

MURATA PRODUCTS Lineup

2014





p2

Capacitors

Chip Monolithic Ceramic Capacitors for General Purpose	3
Chip Monolithic Ceramic Capacitors for Automotive	11
Lead Type Ceramic Capacitors for General Purpose	15
Lead Type Ceramic Capacitors for Automotive	19
High Voltage Ceramic Capacitors	21
Polymer Aluminum Electrolytic Capacitors	21
Trimmer Capacitors	22



p23

Noise Suppression Products/EMI Suppression Filters

Noise Suppression Filters (Chip Ferrite Bead)	24
Noise Suppression Filters (Chip 3 Terminal Capacitor)	25
Noise Suppression Filters (Chip LC/RC Filter)	25
Noise Suppression Filters (Chip Common Mode Choke Coil)	26
Noise Suppression Filters (Block Type)	27
ESD Protection Devices	27
Noise Suppression Filters (Lead Type), Others	28



p29

Inductors (Coils)

Inductors for Power Lines	30
Inductors for General Use	31
RF Inductors	32



p33

Resistors

Trimmer Potentiometers	34
High Voltage Resistors	35



p36

Timing Devices

Crystal Units	37
Ceramic Resonators CERALOCK®	37



p39

Filters for Audio Visual Equipment

Ceramic Filters CERAFIL®	40
Ceramic Traps	42
Ceramic Discriminators	42
SAW Traps	42



p43

Filters for Communication Equipment

SAW Filters for Mobile Communications	44
Dielectric Filters GIGAFIL®	45
Chip Multilayer LC Filters	45
Ceramic Filters CERAFIL®	46
Ceramic Discriminators	47



p48

RF Components

Isolators	49	Chip Multilayer Diplexers	51
Baluns	50	High Frequency Coaxial Connectors	52
Couplers	50	Single Layer Microchip Capacitors	53
Chip Multilayer Hybrid Dividers	51	Thin Film Circuit Substrate RUSUB®	55



p56

Sensors

Pyroelectric Infrared Sensors	58	Accelerometers	57
Ultrasonic Sensors	58	Inclinometers	58
Rotary Sensors	58	Angular Rate Sensors	57
Magnetic Pattern Recognition Sensors	57	Rotary Position Sensors	57
Magnetic Switches (AMR Sensors)	57	Temperature Sensors (Thermistors)	57
Shock Sensors	58		

p2

p23



p60

Thermistors

NTC Thermistors (for Temperature Sensor/Temperature Compensation)	61
NTC Thermistors (for Inrush Current Suppression)	62
PTC Thermistors POSISTOR® (for Overheat Sensing)	63
PTC Thermistors POSISTOR® (for Inrush Current Suppression)	64
PTC Thermistors POSISTOR® (for Overcurrent Protection)	64

p29

p33



p66

Power Supplies/Energy Devices

DC-DC Converters	67
Micro DC-DC Converters	69
High Voltage Transformers	69
High Voltage Power Supplies	70
Switching Power Supplies	71
Electrical Double Layer Capacitors	71

p36

p39



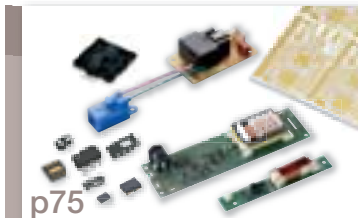
p72

Sound Components

Piezoelectric Sounders	73
Piezoelectric Buzzers	73
Piezoelectric Diaphragms	74

p43

p48



p75

Others

Micromechanics	75	RFID Devices	78
Wireless Communication Modules	76	Wireless Power Transmission Modules	79
Ceramic Applied Products	76		
Ionizer Modules Ionissimo®	77		
Variable Capacitor	77		

p56

p60

Application Guides



Mobile Phones

p82



Refrigerator

p94



Vacuum Cleaner

p99



Personal Computers

p84



Washing Machine

p95



Lighting Control System

p100



Televisions

p86



Air Purifier

p96



Thermometer

p101



Automotive

p88



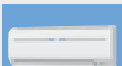
Microwave Oven

p97



Manometer

p102



Air Conditioner

p92



IH Rice Cooker

p98



Blood Glucose Meter

p103

p81

Capacitors

The No. 1 most abundant lineup in the industry, responding to all possible needs, and proposing ideal solutions.



Summary

Using Murata's unique material technology, we offer a variety of capacitors covering a wide range of voltages. Murata also offers technical support that includes design kits and a comprehensive set of software tools to simulate virtually any circuit condition, satisfying the demands of many applications.

Lineup

- Ceramic Capacitors (SMD, lead type, mold type)
- Polymer Aluminum Electrolytic Capacitors
- Ceramic Trimmer Capacitors
- Electrical Double Layer Capacitors

Web Content

Convenient search
Substantial technical information



Various Search Methods

Software Tools
SimSurfing (WEB)

Various Downloadable Data

Frequently Asked Questions (FAQ)

Characteristics Data

Reliability Test Data

Safety Certificates by Series

<http://www.murata.com/products/capacitor/>

Chip Monolithic Ceramic Capacitors For General Purpose

For General Purpose

■ Temperature Compensating Type



GRM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GRM02	0.4X0.2 <01005>	16	0.20pF			47pF							
		10			56pF	100pF							
GRM03	0.6X0.3 <0201>	100	0.10pF			15pF							
		50	0.10pF			120pF							
GRM15	1.0X0.5 <0402>	100	0.10pF			100pF							
		50	0.10pF			1000pF							
		10				1200pF	4700pF						
GRM18	1.6X0.8 <0603>	100	0.50pF			1500pF							
		50	0.50pF			10000pF							
		10				5600pF	22000pF						
GRM21	2.0X1.25 <0805>	250			10pF	5600pF							
		200			10pF	5600pF							
		100				100pF	3300pF						
		50					1200pF	47000pF					
		10						56000pF	0.10μF				
GRM31	3.2X1.6 <1206>	2k			10pF	68pF							
		1k			10pF	1000pF							
		630			10pF	4700pF							
		500			10pF	4700pF							
		250					2700pF	22000pF					
		200					2700pF	10000pF					
		100					1800pF	22000pF					
		50						12000pF	0.10μF				
		25							0.12μF				
		16							0.12μF				
GRM32	3.2X2.5 <1210>	2k				82pF	220pF						
		1k					1200pF	2200pF					
		630					1200pF	10000pF					
		500					1200pF	10000pF					
		250						27000pF	47000pF				
GRM42	4.5X2.0 <1808>	3.15k			10pF	100pF							
GRM43	4.5X3.2 <1812>	1k					2700pF	4700pF					
		630					12000pF	22000pF					
		500					12000pF	22000pF					
GRM55	5.7X5.0 <2220>	1k					5600pF	10000pF					
		630						27000pF	47000pF				
		500						27000pF	47000pF				

Continued on the following page.



For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

High Dielectric Constant Type



GRM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GRM02	0.4X0.2 <01005>	10				100pF		10000pF						
		6.3					1000pF		0.10μF					
		4						15000pF	0.10μF					
GRM03	0.6X0.3 <0201>	50				100pF		1500pF						
		25				100pF			0.10μF					
		16					2200pF		0.10μF					
		10					4700pF		0.22μF					
		6.3					4700pF		0.22μF					
		4							0.22μF					
GRM15	1.0X0.5 <0402>	100				220pF		4700pF						
		50				220pF			0.10μF					
		35							0.22μF	1.0μF				
		25					2200pF			2.2μF				
		16					3300pF			2.2μF				
		10						15000pF		2.2μF				
		6.3							0.10μF	4.7μF				
		4							0.10μF	10μF				
		2.5							0.10μF	10μF				
GRM18	1.6X0.8 <0603>	250				220pF		2200pF						
		200				220pF		2200pF						
		100				220pF			0.10μF					
		50				220pF			2.2μF					
		35							2.2μF	4.7μF				
		25					10000pF			10μF				
		16							0.15μF	10μF				
		10							0.33μF	10μF				
		6.3								4.7μF	22μF			
		4									22μF			
GRM21	2.0X1.25 <0805>	250					1000pF		22000pF					
		200					1000pF		22000pF					
		100						10000pF		0.47μF				
		50						10000pF		4.7μF				
		35								2.2μF	4.7μF			
		25								68000pF		22μF		
		16							0.33μF		22μF			
		10								2.2μF	47μF			
		6.3									10μF	47μF		
		4									10μF	47μF		
		2.5										47μF		
GRM31	3.2X1.6 <1206>	1k				470pF		10000pF						
		630					1000pF		22000pF					
		250						15000pF		0.10μF				
		200						15000pF		0.10μF				
		100							0.47μF	2.2μF				
		50							0.47μF		10μF			
		35									10μF			
		25							0.33μF		22μF			
		16								4.7μF	22μF			

Continued on the following page.



For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GRM31	3.2X1.6 <1206>	10									22μF	47μF	
		6.3								22μF	100μF		
		4								47μF	100μF		
GRM32	3.2X2.5 <1210>	1k					6800pF	22000pF					
		630					22000pF	47000pF					
		250					68000pF	0.22μF					
		200					68000pF	0.22μF					
		100							1.0μF	2.2μF			
		80								4.7μF			
		63								10μF			
		50							4.7μF	10μF			
		35								10μF			
		25								10μF	22μF		
		16								22μF	47μF		
		10								47μF	100μF		
		6.3								47μF	100μF		
		4									100μF		
		GRM43	4.5X3.2 <1812>	1k					33000pF	47000pF			
630							68000pF	0.10μF					
250								0.15μF	0.47μF				
200								0.15μF	0.47μF				
GRM55	5.7X5.0 <2220>	1k					68000pF	0.10μF					
		630						0.15μF	0.22μF				
		250						0.33μF	1.0μF				
		200						0.33μF	1.0μF				

Low ESL Type

LW Reversed Type



LLL

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
LLL15	0.5X1.0 <0204>	6.3							0.10μF	0.22μF				
		4							0.47μF	1.0μF				
LLL18	0.8X1.6 <0306>	50					2200pF	4700pF						
		25					10000pF	22000pF						
		16					22000pF	47000pF						
		10						0.10μF	0.22μF					
		4							0.22μF	2.2μF				
LLL1U	0.6X1.0 <02404>	4								4.3μF				
LLL21	1.25X2.0 <0508>	50					10000pF	22000pF						
		25					22000pF	0.10μF						
		16					47000pF	0.22μF						
		10						0.22μF	1.0μF					
		6.3							0.47μF					
		4							1.0μF	2.2μF				
LLL31	1.6X3.2 <0612>	50					10000pF	0.10μF						
		25					47000pF	0.47μF						
		16						0.22μF	1.0μF					

Continued on the following page.



For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
LLL31	1.6X3.2 <0612>	10								0.47μF	2.2μF			
		6.3									2.2μF	10μF		

Controlled ESR Type



LLR

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
LLR18	0.8X1.6 <0306>	4								1.0μF				

8 Terminal Type



LLA

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
LLA18	1.6X0.8 <0603>	4							0.10μF	2.2μF				
LLA21	2.0X1.25 <0805>	25						10000pF	47000pF					
		16						47000pF	0.22μF					
		10						0.22μF	0.47μF					
		6.3						0.47μF	1.0μF					
		4						1.0μF	4.7μF					
LLA31	3.2X1.6 <1206>	16							0.22μF	1.0μF				
		10						0.47μF	2.2μF					
		6.3						1.0μF	2.2μF					

10 Terminal Type



LLM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
LLM21	2.0X1.25 <0805>	25						10000pF	22000pF					
		16						47000pF	0.10μF					
		6.3							0.22μF	0.47μF				
		4								1.0μF				
LLM31	3.2X1.6 <1206>	16							0.10μF	0.22μF				
		10								0.47μF				
		6.3									2.2μF			

High Frequency HiQ Type (0402 Size Max.)



GJM

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GJM02	0.4X0.2 <01005>	25	0.20pF	22pF										
GJM03	0.6X0.3 <0201>	25	0.20pF	33pF										
GJM15	1.0X0.5 <0402>	50	0.10pF	47pF										



For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

High Frequency HiQ Type (0603 Size Min.)



GQM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GQM18	1.6X0.8 <0603>	250		1.0pF		47pF								
		100		1.0pF		6.8pF								
		50			7.0pF		100pF							
GQM21	2.0X1.25 <0805>	250		1.0pF		100pF								
		100		1.0pF		18pF								
		50				20pF		100pF						
GQM22	2.8X2.8 <1111>	500		1.0pF		100pF								

Product for Bonding/AuSn Soldering



GMD

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GMD03	0.6X0.3 <0201>	25				100pF	1500pF						
		16					1800pF	3300pF					
		10					3900pF	10000pF					
		6.3						56000pF	0.10μF				
GMD15	1.0X0.5 <0402>	50				220pF	4700pF						
		25					5600pF	47000pF					
		16						56000pF	0.10μF				
		10							0.12μF	0.47μF			

Top & Bottom Electrode Type for Bonding



GMA

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GMA05	0.5X0.5 <0202>	100				100pF	1000pF						
		25					1500pF	4700pF					
		10						6800pF	22000pF				
		6.3							0.10μF				
GMA08	0.8X0.8 <0303>	100					1500pF	6800pF					
		25						10000pF	22000pF				
		10						33000pF	0.10μF				
		6.3								0.47μF			
GMA0D	0.38X0.38 <015015>	10						10000pF					



For more details on each series, please refer to our website.

Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

Resin External Electrode Type



GRJ

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GRJ21	2.0X1.25 <0805>	250					1000pF	22000pF						
GRJ31	3.2X1.6 <1206>	1k					470pF	10000pF						
		630					1000pF	22000pF						
		250						15000pF	0.10μF					
GRJ32	3.2X2.5 <1210>	1k					6800pF	22000pF						
		630						22000pF	47000pF					
		250						68000pF	0.22μF					
GRJ43	4.5X3.2 <1812>	1k						33000pF	47000pF					
		630						68000pF	0.10μF					
		250							0.15μF	0.47μF				
GRJ55	5.7X5.0 <2220>	1k						68000pF	0.10μF					
		630							0.15μF	0.22μF				
		250							0.33μF	1.0μF				

For LCD Backlight Inverter Circuit Only



GRM

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GRM42	4.5X2.0 <1808>	3.15k			5.0pF	47pF								

High Effective Capacitance & High Ripple Resistance



GR3

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GR321	2.0X1.25 <0805>	250						10000pF	22000pF					
GR331	3.2X1.6 <1206>	630						10000pF	15000pF					
		450						10000pF	47000pF					
		250							33000pF	68000pF				
GR332	3.2X2.5 <1210>	630						22000pF	47000pF					
		450							68000pF	0.10μF				
		250								0.10μF	0.15μF			
GR343	4.5X3.2 <1812>	630							68000pF					
		450								0.15μF				
		250								0.22μF	0.33μF			
GR355	5.7X5.0 <2220>	630							0.10μF	0.27μF				
		450								0.22μF	0.56μF			
		250								0.47μF	1.0μF			



For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

For Ethernet LAN & Primary-secondary Coupling of DC-DC Converters



GR4

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GR442	4.5X2.0 <1808>	2k				100pF	1500pF						
GR443	4.5X3.2 <1812>	2k					1800pF	4700pF					
GR455	5.7X5.0 <2220>	2k						10000pF					

For Camera Flash Units Only



GR7

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GR721	2.0X1.25 <0805>	350						10000pF	27000pF				
GR731	3.2X1.6 <1206>	350						10000pF	47000pF				

Safety Standard Certified

- The Electrical Appliance and Material Safety Law of Japan



GA2

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GA242	4.5X2.0 <1808>	AC250 (r.m.s.)					470pF	1000pF					
GA243	4.5X3.2 <1812>	AC250 (r.m.s.)					2200pF	47000pF					
GA255	5.7X5.0 <2220>	AC250 (r.m.s.)							0.10μF				

- Type GF (IEC60384-14 Y2, X1/Y2 Class)



GA3

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GA342	4.5X2.0 <1808>	AC250 (r.m.s.)			10pF	1000pF							
GA352	5.7X2.8 <2211>	AC250 (r.m.s.)				100pF	1500pF						
GA355	5.7X5.0 <2220>	AC250 (r.m.s.)					1800pF	4700pF					

- Type GD (IEC60384-14 Y3 Class)



GA3

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GA342	4.5X2.0 <1808>	AC250 (r.m.s.)			10pF	1500pF							
GA343	4.5X3.2 <1812>	AC250 (r.m.s.)				1800pF 4700pF							

Continued on the following page.



For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

Type GB (UL, IEC60384-14 X2 Class)



GA3

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GA355	5.7X5.0 <2220>	AC250 (r.m.s.)						10000pF	56000pF				

Metal Terminal Type

High Effective Capacitance



KRM

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
KRM21	2.2X1.25	25										10μF		
		16										10μF		
KRM31	3.5X1.7	100									1.0μF			
		50									4.7μF			
		35									10μF			
		25									10μF			
	3.6X1.7	50								2.2μF				
	3.7X1.85	100								2.2μF				
KRM55	6.1X5.3	1k							68000pF	0.22μF				
		630							0.15μF	0.47μF				
		250								0.68μF	2.2μF			
		100								4.7μF	15μF			
		63								4.7μF	22μF			
		50								4.7μF	22μF			
		35									10μF	33μF		
		25								15μF	47μF			

High Effective Capacitance & High Ripple Resistance



KR3

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
KR355	6.1X5.3	630								0.10μF	0.56μF			
		450								0.22μF	1.2μF			
		250								0.47μF	2.2μF			



For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Chip Monolithic Ceramic Capacitors

For Automotive

For Automotive (General Purpose)

■ Temperature Compensating Type



GCM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GCM03	0.6X0.3 <0201>	25		1.0pF	100pF								
GCM15	1.0X0.5 <0402>	50		1.0pF	470pF								
GCM18	1.6X0.8 <0603>	100		1.0pF	1500pF								
		50		1.0pF	3900pF								
GCM21	2.0X1.25 <0805>	250				100pF	5600pF						
		100				100pF	3300pF						
		50					1000pF	22000pF					
GCM31	3.2X1.6 <1206>	1k			10pF	1000pF							
		630			10pF	4700pF							
		250					2700pF	10000pF					
		100					1800pF	10000pF					
		50						3900pF	56000pF				
GCM32	3.2X2.5 <1210>	1k				1200pF	2200pF						
		630					1200pF	10000pF					
GCM43	4.5X3.2 <1812>	1k					2700pF	4700pF					
		630						12000pF	22000pF				
GCM55	5.7X5.0 <2220>	1k					5600pF	10000pF					
		630						27000pF	47000pF				

■ High Dielectric Constant Type



GCM

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCM03	0.6X0.3 <0201>	25				100pF	1500pF							
		16					2200pF	3300pF						
		10						4700pF	10000pF					
GCM15	1.0X0.5 <0402>	100				220pF	4700pF							
		50				220pF	0.10μF							
		25						10000pF	47000pF					
		16						33000pF	0.22μF					
GCM18	1.6X0.8 <0603>	100				1000pF	22000pF							
		50				1000pF	0.22μF							
		25						33000pF	1.0μF					
		16							0.10μF	1.0μF				
		6.3								2.2μF				
GCM21	2.0X1.25 <0805>	100					6800pF	0.10μF						
		50						33000pF	1.0μF					
		35							0.68μF	1.5μF				
		25							0.15μF	2.2μF				
		16								0.68μF	4.7μF			

Continued on the following page.



For more details on each series, please refer to our website.

Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCM21	2.0X1.25 <0805>	10								2.2μF	10μF			
		6.3									10μF			
GCM31	3.2X1.6 <1206>	100							0.10μF	1.0μF				
		50							0.33μF	4.7μF				
		25							2.2μF	10μF				
		16							4.7μF	10μF				
		10									10μF			
		6.3										22μF		
GCM32	3.2X2.5 <1210>	50							1.0μF	10μF				
		35									10μF			
		25							4.7μF	10μF				
		16								10μF	22μF			
		10										22μF		
		6.3										47μF		

Resin External Electrode Type



Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GCJ18	1.6X0.8 <0603>	100					1000pF	22000pF							
		50					1000pF	0.10μF							
		35						33000pF	68000pF						
		25					1000pF	0.22μF							
		16						10000pF	0.47μF						
		10							0.12μF	0.22μF					
GCJ21	2.0X1.25 <0805>	250					1000pF	22000pF							
		100				220pF	0.10μF								
		50				330pF	1.0μF								
		35						0.12μF	0.47μF						
		25				470pF	2.2μF								
		16						0.27μF	4.7μF						
		10							2.2μF	10μF					
GCJ31	3.2X1.6 <1206>	1k					1000pF	10000pF							
		630					1000pF	22000pF							
		250						15000pF	0.10μF						
		100							0.10μF	1.0μF					
		50							0.10μF	4.7μF					
		35								0.56μF	1.0μF				
		25							0.10μF	10μF					
		16								1.0μF	10μF				
		10									6.8μF	10μF			
		6.3										22μF			
GCJ32	3.2X2.5 <1210>	1k						15000pF	22000pF						
		630					6800pF	47000pF							
		250						68000pF	0.22μF						
		100								2.2μF					
		50								4.7μF	10μF				
		25								4.7μF	10μF				
		16										22μF			

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For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCJ43	4.5X3.2 <1812>	1k							33000pF	47000pF				
		630							33000pF	0.10μF				
		250								0.15μF	0.47μF			
GCJ55	5.7X5.0 <2220>	1k							68000pF	0.10μF				
		630							0.10μF	0.22μF				
		250								0.33μF	1.0μF			

Specially Designed Product to Reduce Shorts



GCD

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCD18	1.6X0.8 <0603>	100					1000pF	22000pF						
		50					1000pF	22000pF						
		25						27000pF	47000pF					
GCD21	2.0X1.25 <0805>	100					1000pF	0.10μF						
		50					1000pF	0.10μF						

Specially Designed Product to Reduce Shorts & Resin Electrode Product



GCE

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCE18	1.6X0.8 <0603>	100					1000pF		22000pF					
		50					1000pF		22000pF					
GCE21	2.0X1.25 <0805>	100					1000pF		0.10μF					
		50					1000pF		0.10μF					

Conductivity Adhesive Compatible Type

Temperature Compensating Type



GCG

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCG18	1.6X0.8 <0603>	50			10pF	2200pF								
GCG21	2.0X1.25 <0805>	50				100pF	10000pF							

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For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

High Dielectric Constant Type



GCG

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCG15	1.0X0.5 <0402>	50				220pF	4700pF							
		25					5600pF	10000pF						
		16						15000pF	0.10μF					
GCG18	1.6X0.8 <0603>	100					1000pF	68000pF						
		50				220pF	0.22μF							
		25						0.12μF	0.47μF					
GCG21	2.0X1.25 <0805>	16						0.15μF	0.22μF					
		50					27000pF	0.22μF						
		25						0.10μF	1.0μF					
GCG31	3.2X1.6 <1206>							0.33μF	4.7μF					
		25							1.0μF	4.7μF				
		16							1.0μF	4.7μF				
GCG32	3.2X2.5 <1210>	25							3.3μF	10μF				

High Effective Capacitance & High Ripple Resistance



GC3

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GC321	2.0X1.25 <0805>	250						10000pF	22000pF						
GC331	3.2X1.6 <1206>	630						10000pF	15000pF						
		450						10000pF	47000pF						
		250						33000pF	68000pF						
GC332		3.2X2.5 <1210>	630						22000pF	47000pF					
GC343	4.5X3.2 <1812>	450							68000pF	0.10μF					
		250							0.10μF	0.15μF					
		GC343	4.5X3.2 <1812>	630							68000pF				
450										0.15μF					
GC355	5.7X5.0 <2220>	250							0.22μF	0.33μF					
		GC355	5.7X5.0 <2220>	630						0.10μF	0.27μF				
		450							0.22μF	0.56μF					
250									0.47μF	1.0μF					

Metal Terminal Type

High Effective Capacitance



KCM

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
KCM55	6.1X5.3	100								4.7μF	15μF			

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For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
KCM55	6.1X5.3	63									4.7μF	22μF		
		50								4.7μF	22μF			
		35								10μF	33μF			
		25								15μF	47μF			

High Effective Capacitance & High Ripple Resistance



KC3

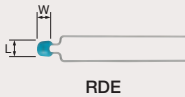
Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
KC355	6.1X5.3	630							0.10μF	0.56μF				
		450							0.22μF	1.2μF				
		250							0.47μF	2.2μF				

Lead Type Ceramic Capacitors

For General Purpose

Radial Lead Type

Temperature Compensating Type



RDE

Series	LxW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
RDE5C	4.0X3.5	100		1.0pF	1500pF									
		50		1.0pF	3900pF									
	4.5X3.5	100					1800pF	3300pF						
		50					4700pF	22000pF						
	5.0X3.5	100		1.0pF	3300pF									
		50		1.0pF	22000pF									
RDE7U	4.5X3.5	250				100pF	4700pF							
		1k			10pF	1000pF								
	5.5X4.0	630			10pF	4700pF								
		250					6800pF	22000pF						
		1k					1500pF	2200pF						
	5.5X5.0	630					6800pF	10000pF						
		250						33000pF	47000pF					
		1k					3300pF	4700pF						
	7.5X5.5	630					15000pF	22000pF						
		1k					6800pF	10000pF						
	7.5X8.0	630					33000pF	47000pF						
		1k						22000pF						
	7.5X13.0	630						0.10μF						

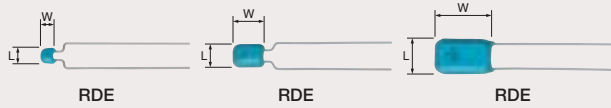
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For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

High Dielectric Constant Type



Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
RDEC7	4.0X3.5	25								0.22μF	1.0μF			
	4.5X3.5	25									2.2μF			
	5.0X3.5	25							0.22μF	2.2μF				
	5.5X4.0	50									4.7μF			
		25									4.7μF	10μF		
	5.5X5.0	100								1.5μF	2.2μF			
		50										10μF		
		25										22μF		
	5.5X7.5	100										4.7μF		
		50										22μF		
25												47μF		
RDED7	5.5X4.0	630						10000pF	15000pF					
		450						10000pF	47000pF					
		250						33000pF	68000pF					
	5.5X5.0	630						22000pF	47000pF					
		450						68000pF	0.10μF					
		250						0.10μF	0.15μF					
	7.5X5.5	630							68000pF					
		450							0.15μF					
		250							0.22μF	0.33μF				
	7.5X7.5	450							0.22μF	0.56μF				
		250							0.47μF	1.0μF				
	7.5X8.0	630							0.10μF	0.27μF				
	7.7X12.5	450								1.0μF	1.2μF			
		250									2.2μF			
7.7X13.0	630							0.47μF	0.56μF					
RDEF1	4.0X3.5	50						10000pF	0.1μF					
	5.0X3.5	50						10000pF	0.1μF					
RDEF5	4.0X3.5	50						10000pF	0.1μF					
	5.0X3.5	50						10000pF	0.1μF					
RDER7	4.0X3.5	100					220pF	22000pF						
		50					220pF	0.1μF						
		25						0.1μF						
	4.5X3.5	100						33000pF	0.47μF					
		50						0.15μF	0.47μF					
	5.0X3.5	630					1000pF	15000pF						
		250					1000pF	47000pF						
		100					220pF	0.47μF						
		50					220pF	0.47μF						
		25						0.1μF						
	5.0X4.5	630						22000pF	47000pF					
		250						68000pF	0.10μF					
	5.5X4.0	1k					470pF	4700pF						
		100						0.15μF	1.0μF					
		50							0.68μF	2.2μF				
	5.5X5.0	1k						6800pF	22000pF					
		50									3.3μF			

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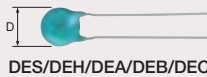


For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
RDER7	7.5X5.5	1k							33000pF	47000pF				
		630							68000pF	0.10μF				
		250							0.15μF	0.22μF				
	7.5X7.5	250							0.33μF	0.47μF				
	7.5X8.0	1k							68000pF	0.10μF				
		630							0.15μF	0.22μF				
	7.7X12.5	250								1.0μF				
	7.7X13.0	1k								0.22μF				
		630								0.47μF				

Disc Type (Medium High Voltage)



High Temperature Guaranteed Low Loss Type (Low Heat Generation)

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
DESD3	6.0 to 17.0	1k				100pF		4700pF						
	6.0 to 14.0	500				100pF		4700pF						

High Temperature Guaranteed Low Loss Type

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
DEHC3	6.0 to 14.0	500				330pF		4700pF						
DEHR3	7.0 to 19.0	3.15k				150pF		2700pF						
	7.0 to 21.0	2k				220pF		4700pF						
	7.0 to 17.0	1k				220pF		4700pF						

Medium Voltage (Low Heat Generation Type for Temperature Compensation)

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
DEA1X	5.0 to 16.0	3.15k			10pF	390pF								
	4.5 to 15.0	2k			10pF	560pF								
	4.5 to 12.0	1k			10pF	560pF								

Medium Voltage Type (High Dielectric Constant)

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
DEBB3	5.0 to 15.0	3.15k				100pF	3300pF							
	4.5 to 15.0	2k				100pF	4700pF							
	4.5 to 15.0	1k				100pF	6800pF							
DEBE3	7.0 to 13.0	3.15k					1000pF	4700pF						
	6.0 to 16.0	2k					1000pF	10000pF						
	5.0 to 13.0	1k					1000pF	10000pF						
DEBF3	5.0 to 12.0	2k					1000pF	10000pF						
	6.0 to 10.0	1k					2200pF	10000pF						

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For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

Medium Voltage Compatible Type

Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
DEC1X	7.0 to 15.0	6.3k			10pF	150pF							
DECB3	9.0 to 13.0	6.3k				100pF	1000pF						
DECE3	11.0 to 15.0	6.3k					1000pF	2200pF					

Disc Type (High Voltage) for LCD Backlight Inverter Circuit Only



Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
DEF1X	7.0 to 9.0	6.3k			10pF	47pF								
DEF2C	7.0 to 8.0	6.3k		2.0pF	10pF									

Disc Type (Safety Standard Certified Type)



Type KY (Basic Insulation Type) -IEC60384-14 X1/Y2 Class

Series	D (mm)	Rated Voltage (V)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
DE21X	8.0	AC250 (r.m.s.)			10pF	68pF							
DE2B3	7.0 to 8.0	AC300 (r.m.s.)				100pF	680pF						
	7.0 to 8.0	AC250 (r.m.s.)				100pF	680pF						
DE2E3	7.0 to 10.0	AC300 (r.m.s.)					1000pF	4700pF					
	7.0 to 10.0	AC250 (r.m.s.)					1000pF	4700pF					
DE2F3	14.0	AC300 (r.m.s.)						10000pF					
	14.0	AC250 (r.m.s.)						10000pF					

Type KX (Reinforced Insulation Type) -IEC60384-14 X1/Y1 Class

Series	D (mm)	Rated Voltage (V)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
DE11X	9.0	AC250 (r.m.s.)			10pF	68pF								
DE1B3	7.0 to 8.0	AC300 (r.m.s.)				100pF	680pF							
	7.0 to 8.0	AC250 (r.m.s.)				100pF	680pF							
DE1E3	7.0 to 12.0	AC300 (r.m.s.)					1000pF	4700pF						
	7.0 to 12.0	AC250 (r.m.s.)					1000pF	4700pF						

The Electrical Appliance and Material Safety Law of Japan

Series	D (mm)	Rated Voltage (V)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
DEJE3	7.0 to 11.0	AC250 (r.m.s.)					1000pF	4700pF					
DEJF3	8.0 to 11.0	AC250 (r.m.s.)						4700pF	10000pF				



For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

Disc Type (Ultra-high-voltage)



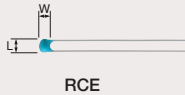
Series	D (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
DHR4E	8.0 to 18.0	15k				100pF	1000pF							
	8.0 to 16.0	12k				100pF	1000pF							
	8.0 to 15.0	10k				100pF	1000pF							
DHRB3	8.0 to 18.0	15k				100pF	1000pF							
	8.0 to 16.0	12k				100pF	1000pF							
	8.0 to 15.0	10k				100pF	1000pF							

Lead Type Ceramic Capacitors

For Automotive

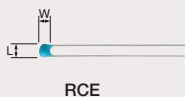
Powertrain/Safety (AEC-Q200)

Temperature Compensating Type



Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
RCE5C	3.6X3.5	100		1.0pF				1500pF						
		50		1.0pF				3900pF						
	4.0X3.5	100					1800pF		3300pF					
		50						4700pF		22000pF				

High Dielectric Constant Type



Series	LxW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
RCEC7	5.5X5.0	100								1.5μF	2.2μF			
	5.5X7.5	100									4.7μF			
RCER7	3.6X3.5	100				220pF	22000pF							
		50				220pF	0.10μF							
	4.0X3.5	100					33000pF	0.33μF						
		50						0.15μF	0.47μF					
	5.5X4.0	100						0.15μF	1.0μF					
		50							0.68μF	2.2μF				
	5.5X5.0	25								3.3μF	4.7μF			
		50								3.3μF	4.7μF			
	5.5X7.5	25									10μF			
		50									10μF			
		25										22μF		



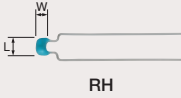
For more details on each series, please refer to our website.

Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

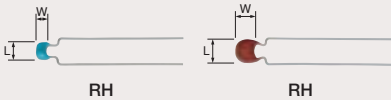
Powertrain/Safety (AEC-Q200) 150°C Max.

Temperature Compensating Type



Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
RHE5G	3.6X3.5	100				100pF	1500pF						
		50				100pF	3900pF						
	4.0X3.5	100					1800pF	3300pF					
		50					4700pF	10000pF					

High Dielectric Constant Type



Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
RHEL8	3.6X3.5	100				220pF	22000pF						
		50				220pF	0.10μF						
	4.0X3.5	100					33000pF	0.10μF					
		50						0.15μF	0.33μF				
	5.5X4.0	100						0.15μF	0.22μF				
		50						0.47μF	2.2μF				
	5.5X5.0	50							3.3μF	4.7μF			
	5.5X7.5	50								10μF			

Safety Standard Certified for Automotive

Type KJ -IEC60384-14 X1/Y2 Class



Series	D (mm)	Rated Voltage (V)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
DE6B3	8.0 to 9.0	AC300 (r.m.s.)				100pF	680pF						
DE6E3	7.0 to 12.0	AC300 (r.m.s.)					1000pF	4700pF					



For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

High Voltage Ceramic Capacitors

Ultra-high-voltage

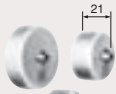


DHS

(in mm)

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
DHS4E	—	40k				140pF	2000pF							
		30k				190pF	2700pF							
		20k				280pF	4000pF							
		15k				370pF	5300pF							
		10k				560pF	8000pF							
DHSF4	—	40k				340pF	2700pF							
		30k				460pF	3600pF							
		20k				600pF	4800pF							

High Voltage AC Rated Type



DHK

(in mm)

Series	LxW (mm)	Rated Voltage (V)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
DHK3V	—	AC10k (r.m.s.)				100pF	1000pF							

Polymer Aluminum Electrolytic Capacitors



ECAS

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
ECAS	7.3X4.3	16									6.8μF	22μF		
		12.5									10μF	100μF		
		10									10μF	150μF		
		6.3									10μF	220μF		
		4										68μF	330μF	
		2										100μF	470μF	



For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/capacitor/>

Capacitors

Trimmer Capacitors

Trimmer Capacitors are variable capacitance capacitors, used for adjusting characteristics of electronic equipment.

Mounting Method	Soldering Method	Series	Max. Height	Size (WXL)	Rated Voltage	Operating Temperature Range	Remarks
Surface Mounting	Reflow Soldering Methods	 TZR1	0.9mm max.	1.5X1.7mm	25V	-25 to 85°C	
		 TZS2	1.0mm max.	2.2X2.7mm	25V	-25 to 85°C	
		 TZY2	1.25mm max.	2.5X3.2mm	25V	-25 to 85°C	
		 TZV2	1.45mm max.	2.3X3.2mm	25V	-25 to 85°C	
		 TZC3	1.7mm max.	3.2X4.5mm	100V	-25 to 85°C	
		 TZW4	2.6mm max.	4.2X5.2mm	250V	-55 to 125°C	for High Frequency Power
		 TZB4_A	3.2mm max.	4.0X4.5mm	100V/50V	-25 to 85°C	
		 TZB4_B	3.2mm max.	4.0X4.5mm	100V/50V	-25 to 85°C	
	Flow Soldering Methods	 TZB4_A	3.2mm max.	4.0X4.5mm	100V/50V	-25 to 85°C	with Cover Film
		 TZB4_B	3.2mm max.	4.0X4.5mm	100V/50V	-25 to 85°C	with Cover Film



For more details on each series, please refer to our website.

Product Search ⇒ <http://www.murata.com/products/capacitor/>

Selection Guide of Trimmer Capacitors ⇒ http://www.murata.com/products/capacitor/kt_search/selection.html



Please refer to p.71 for Electrical Double Layer Capacitors.

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- Chip Monolithic Ceramic Capacitors Cat. No. C02E
- Chip Monolithic Ceramic Capacitors for Automotive Cat. No. C03E
- Safety Standard Certified Ceramic Capacitors/ High Voltage Ceramic Capacitors Cat. No. C85E
- Ceramic Trimmer Capacitors Cat. No. T13E
- Polymer Aluminum Electrolytic Capacitors Cat. No. C90E
- Radial Lead Type Monolithic Ceramic Capacitors Cat. No. C49E
- High Performance Electrical Double Layer Capacitor DMF Series Cat. No. O83E
- High Performance Electrical Double Layer Capacitor DMT Series Cat. No. O84E

<http://www.murata.com/products/capacitor/catalog/>

Noise Suppression Products/ EMI Suppression Filters

Broad lineup of Noise Suppression Products and EMI Suppression Filters



Summary

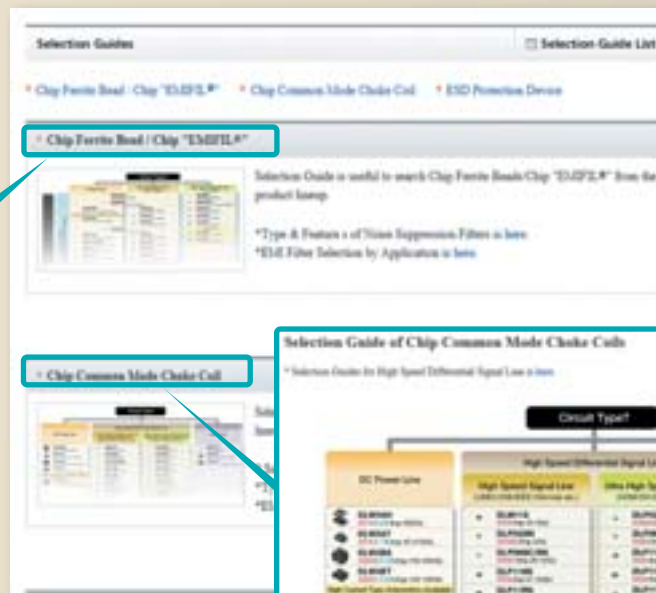
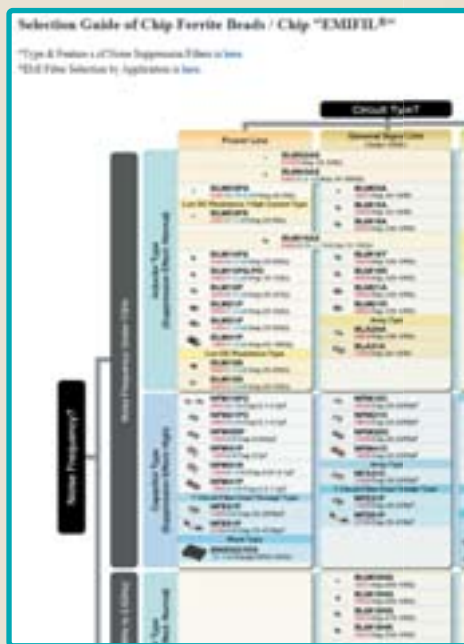
Using Murata's ceramic processing technology and unique material, we offer a variety of Noise Suppression Products and EMI Suppression Filters.

Lineup

- EMI (chip and lead type) ●Noise Suppression Products for Automotive ●ESD Protection Devices
- AC Line Filters ●Ferrite Cores

Selection Guide

The Selection Guide on our website is useful for searching the applications and the product lineup.



http://www.murata.com/products/emc/selection_guide/

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- SMD/BLOCK Type EMI Suppression Filters EMIFIL® Cat. No. C31E
- On-Board Type (DC) EMI Suppression Filters (EMIFIL®) for Automotive Cat. No. C50E
- EMI Suppression Filters (Lead Type EMIFIL®) Cat. No. C30E
- EMI Suppression Filters (EMIFIL®) for AC Power Lines Cat. No. C09E
- Noise Suppression by EMIFIL® Digital Equipment Application Manual Cat. No. C33E
- Noise Suppression by EMIFIL® Application Guide Application Manual Cat. No. C35E
- Application Manual for Power Supply Noise Suppression and Decoupling for Digital ICs Cat. No. C39E
- Ferrite Core for EMI Suppression Microwave Absorber Cat. No. O63E

<http://www.murata.com/products/emc/catalog/>

Noise Suppression Products/EMI Suppression Filters

Noise Suppression Filters (Chip Ferrite Bead)

		Series	Size Code Inch (mm)	Max. Rated Current (mA)	Impedance (Ω) at 100MHz						Effective Frequency Range (Hz) (For Reference Only)								
					10	100			1000			10k	100k	1M	10M	100M	1G	10G	
For General Band Noise	Universal Type [Power Lines / Signal Lines]	BLM02AX	01005 (0402)	750	10	70			120										
		BLM03AX	0201 (0603)	1000	10	80			120	240	600	1000							
		BLM15AX	0402 (1005)	1740	10	30	70	120	220	600	1000								
	Signal Lines Type	For General Signal Lines	BLM03AG	0201 (0603)	-	10	70			120	240	600	1000						
			BLM15AG	0402 (1005)	-	10	70	120	220	600	1000								
			BLM18A	0603 (1608)	-	120			150	220	330	470	600	1000					
			BLM21A	0805 (2012)	-	120			150	220	330	470	600	1000					
			BLM18T	0603 (1608)	-	120			220			600	1000						
			BLA2AA (4 circuits array)	0804 (2010)	-	120			220			600	1000						
			BLA31A (4 circuits array)	1206 (3216)	-	30	60	120	220			600	1000						
			BLM02BX	01005 (0402)	-	150													
			BLM03B	0201 (0603)	-	10	22	33	47	75	120	240	470						
			BLM15B	0402 (1005)	-	5	10	22	33	47	75	120	220	470	1000				
		BLM18B	0603 (1608)	-	5	10	22	47	60	75	140	220	420	600	1500	2200			
		BLM21B	0805 (2012)	-	5	75			120	200	330	470	750	1500	2200	2700			
		BLA2AB (4 circuits array)	0804 (2010)	-	10	22	47	75	120	220		600	470	1000					
		BLA31B (4 circuits array)	1206 (3216)	-	120			220			600	470	1000						
	For Digital Interface Lines	BLM18R	0603 (1608)	-	120			220			600	470	1000						
		BLM21R	0805 (2012)	-	120			220			600	470	1000						
	Power Lines Type	BLM03PX*	0201 (0603)	1800	22 (1.8A)		33 (1.5A)		80 (1A)										
		BLM03PG	0201 (0603)	900	22 (0.9A)		33 (0.75A)												
		BLM15P*	0402 (1005)	3000	10 (1A)	30 (2.2A)	60 (1.7A/2.5A)	120 (1.3A/2A)	220 (1.4A)	470 (1A)	600 (0.9A)								
		BLM18P*	0603 (1608)	3000	30 (1A)		60 (0.5A)	180 (1.5A)	330 (1.2A)	470 (1A)									
		BLM21P*	0805 (2012)	6000	22 (6A)		30 (4A)	60 (3.5A)	120 (3A)	220 (2A)	330 (1.5A)								
		BLM31P*	1206 (3216)	6000	33 (6A)		50 (3.5A)	120 (3.5A)	220 (3A)	390 (2A)	600 (1.5A)								
		BLM41P*	1806 (4516)	6000	60 (6A)		75 (3.5A)	180 (3.5A)	220 (2.2A)	470 (2A)	1000 (1.5A)								
		BLM18K* (Low DC Resistance Type)	0603 (1608)	6000	26 (6A)	30 (5A)	70 (3.5A)	100 (3A)	120 (3A)	330 (1.7A)	600 (1.3A)								
		BLM18S* (Low DC Resistance Type)	0603 (1608)	6000	26 (6A)	70 (4A)	120 (3A)	220 (2.5A)	330 (1.5A)										
For GHz Band Noise		Universal Type [Power Lines / Signal Lines]	BLM03EB*	0201 (0603)	600	25 (0.6A)			50 (0.4A)										
			BLM15EG*	0402 (1005)	1500	120 (1.5A)			220 (0.7A)										
	BLM18EG*		0603 (1608)	2000	100 (2A)	120 (2A)	220 (2A/1A)	330 (0.5A)	470 (0.5A)	600 (0.5A)									
	BLM18HE*		0603 (1608)	800	600 (0.8A)			1500 (0.5A)											
	Signal Lines Type	BLM03HG	0201 (0603)	-	600			1000											
		BLM03HD	0201 (0603)	-	330			470			600	1000							
		BLM03HB	0201 (0603)	-	190														
		BLM15HG	0402 (1005)	-	600			1000											
		BLM15HD	0402 (1005)	-	600			1000			1800								
		BLM15HB	0402 (1005)	-	120			220											
		BLM18HG	0603 (1608)	-	470			600			1000								
		BLM18HD	0603 (1608)	-	470			600			1000								
		BLM18HB	0603 (1608)	-	120			220			330								
		BLM18HK	0603 (1608)	-	330			470			600	1000							

* The derating of rated current is required for some items according to the operating temperature.



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Continued on the following page.

Noise Suppression Products/EMI Suppression Filters

For High-GHz Band Noise		Signal Lines Type	Series	Size Code Inch (mm)	Max. Rated Current (mA)	Impedance (Ω) at 100MHz			Effective Frequency Range (Hz) (For Reference Only)							
						10	100	1000	10k	100k	1M	10M	100M	1G	10G	
				BLM15GG	0402 (1005)	-		220	470							
	BLM15GA	0402 (1005)	-		75											
	BLM18GG	0603 (1608)	-			470										

Noise Suppression Filters (Chip 3 Terminal Capacitor)

		Series	Size Code Inch (mm)	Max. Rated Current (mA)	Capacitance (F)							Effective Frequency Range (Hz) (For Reference Only)							
					10p	100p	1000p	10000p	0.1μ	1μ	10μ	10k	100k	1M	10M	100M	1G	10G	
Signal Lines Type		NFM15CC	0402 (1005)	-	2200 22000														
		NFM18C	0603 (1608)	-	470 2200 22 47 100 220 1000 22000														
		NFM21C	0805 (2012)	-	470 2200 22 47 100 220 1000 22000														
		NFM3DC	1205 (3212)	-	470 2200 22 47 100 220 1000 22000														
		NFM41C	1806 (4516)	-	470 2200 22 47 100 220 1000 22000														
	 (4 circuits array)	NFA31C	1206 (3216)	-	470 2200 22 47 100 220 1000 22000														
Power Lines Type		NFM15PC	0402 (1005)	2000	47000 0.22 1.0 0.1 0.47 4.3														
		NFM18P	0603 (1608)	4000	0.22 1.0 0.1 0.47 2.2														
		NFM21P	0805 (2012)	6000	0.22 1.0 4.7 0.1 0.47 2.2 10														
		NFM3DP*	1205 (3212)	2000	22000														
		NFM31P	1206 (3216)	6000	27														
		NFM31K*	1206 (3216)	10000	10000 22000 15000 0.1														
		NFM41P	1806 (4516)	6000	0.2 1.5														
Universal Type [Power Lines / Signal Lines]		NFE31P	1206 (3216)	6000	470 2200 22 47 100 220 1500														
		NFE61P	2706 (6816)	2000	100 360 1000 33 68 180 680 4700														

Noise Suppression Filters (Chip LC/RC Filter)

		Series	Size Code Inch (mm)	Max. Rated Current (mA)	Cut-off Frequency (MHz)										Effective Frequency Range (Hz) (For Reference Only)							
					10	100	500	10k	100k	1M	10M	100M	1G	10G								
Signal Lines Type		NFL15ST	0402 (1005)	-	150 200 300 500																	
		NFL18ST	0603 (1608)	-	50 70 100 200 300 500																	
		NFL18SP	0603 (1608)	-	150 200 300 500																	
		NFL21S	0805 (2012)	-	10	20	50	70	100	150	200	300	400									
		NFA18S (4 circuits array)	0603 (1608)	-	50 130 180 220 300 350 480																	
		NFA21S (4 circuits array)	0805 (2012)	-	50 80 200 300 330 400																	
		NFW31S	1206 (3216)	-	10	20	50	100	150	200	300	400	500									
		NFR21G	0805 (2012)	-																		
		NFA31G (4 circuits array)	1206 (3216)	-																		

* The derating of rated current is required for some items according to the operating temperature.



For more details on each series, please refer to our website.
Product Search $\Rightarrow$ <http://search.murata.co.jp/>

Noise Suppression Products/EMI Suppression Filters

Noise Suppression Filters (Chip Common Mode Choke Coil)

		Series	Size Code Inch (mm)	Max. Rated Current (mA)	Common Mode Impedance (Ω) at 100MHz			Effective Frequency Range (Hz) (For Reference Only)				
					100	500	1000	1M	10M	100M	1G	10G
Signal Lines Type	For Audio Lines	 DLM11G	0504 (1210)	-	600							
		For Ultra-High-Speed Signal Lines	 DLM11S	0504 (1210)	-	45 90						
	 DLP0QSN		025020 (0605)	-	60							
	 DLP0QSA		025020 (0605)	-	15 7 35							
	 DLP0NSC		03025 (0806)	-	28							
	 DLP0NSN		03025 (0806)	-	35 90 67 120							
	 DLP0NSA		03025 (0806)	-	15 7							
	 DLP11SN		0504 (1210)	-	67 90 120 160 200 280 330							
	 DLP11SA		0504 (1210)	-	35 90 67							
	 DLP11RN		0504 (1210)	-	45							
	 DLP11RB		0504 (1210)	-	15 40							
	 DLP11TB		0504 (1210)	-	80							
	 DLP31S		1206 (3216)	-	120 220 550							
	 DLP1NDN (2 circuits array)		05025 (1506)	-	35 90 67							
	 DLP2ADA (2 circuits array)		0804 (2010)	-	35 90 67							
	 DLP2ADN (2 circuits array)		0804 (2010)	-	90 120 160 200 280							
	 DLP31DN (2 circuits array)		1206 (3216)	-	90 130 200 320 440							
	 DLW21S		0805 (2012)	-	90 120 180 260 370 500							
	 DLW21H		0805 (2012)	-	90 120 180							
	 DLW31SN		1206 (3216)	-	90 160 260 600 1000 2200							
Universal Type [Power Lines / Signal Lines]	DLW5AH/DLW5BS*	2014 /2020 (5036)/(5050)	5000	190 350 1000 1500 4000 3000								
	DLW5AT*/DLW5BT*	2014 /2020 (5036)/(5050)	7000	50 110 230 330 500 1000 1400 45 100 150 250 400 850 1100 2700								

Large Current Type for Auto-motive Available	Series	Size Code Inch (mm)	Max. Rated Current (mA)	Common Mode Impedance (Ω) at 10MHz			Effective Frequency Range (Hz) (For Reference Only)					
				100	500	1000	100k	1M	10M	100M	1G	10G
	 PLT10HH*	-	-	45 100	400 500	900 1000						

* The derating of rated current is required for some items according to the operating temperature.



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Noise Suppression Products/EMI Suppression Filters

Noise Suppression Filters (Block Type)

		Series	Height (mm)	Rated Voltage (Vdc)	Rated Current (A)	Effective Frequency Range (Hz) (For Reference Only)						
						10k	100k	1M	10M	100M	1G	10G
Power Lines Type	SMD Type	 BNX022*	3.1	50	10							
		 BNX023*	3.1	100	15							
		 BNX024*	3.5	50	15							
		 BNX025*	3.5	25	15							
	Lead Type	 BNX002	13 max.	50	10							
		 BNX003	13 max.	150	10							
		 BNX005	13.5 max.	50	15							
		 BNX012*	8.0 max.	50	15							
		 BNX016*	8.0 max.	25	15							

* The derating of rated current is required for some items according to the operating temperature.

ESD Protection Devices

Support ESD protection for various kinds of electronic devices.

Ceramic ESD Protection Devices LXES_A Series

Applying Murata's original ceramic technology for excellent ESD suppression performance and ultra-small capacitance value.



Silicon ESD Protection Devices LXES_B Series

Applying accumulated design technology to have excellent ESD suppression performance.



Continued on the following page. 



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Noise Suppression Products/EMI Suppression Filters

Common mode filter with ESD Protection Devices LXES_D Series

Applying Murata's original ceramic technology for excellent ESD suppression performance with Common Mode Choke Coil and small capacitance value.



Product Lineup ⇒ http://www.murata.com/products/emc/selection_guide/emc3/

<Category Search> Primary: "Noise Suppression Products/EMI Suppression Filters"

Secondary: "ESD Protection Device"

<Part Number Search> Part Number: "LXES"

Noise Suppression Filters (Lead Type), Others

	Series							Effective Frequency Range (Hz) (For Reference Only)						
								10k	100k	1M	10M	100M	1G	10G
Lead Type EMIFIL®	 BL01	 BL02	 BL03	 DSN6	 DSN9(H)	 DSS6	 DST9(H)							
EMIGUARD®	 VFR3V	 VFS6V	 VFS9V											
AC Line Filters	Common Mode Choke Coil	 PLA10AN	 PLA10AH	 PLH10AN										
	Hybrid Common Mode Choke Coil	 PLY10AN	 PLY10AH	 PLY17BN										
Common Mode Choke Coils	 PLT09H													
Microwave Absorbers	 EA10	 EA20/21/30												
Ferrite Core	 FSRH	 FSRB	 FSRC	 FSSA										



For more details on each series, please refer to our website.

Product Search ⇒ <http://search.murata.co.jp/>

Inductors (Coils)

Broad lineup of Chip Inductors and Power Inductors



Summary

Using Murata's ceramic processing technology and unique material we offer a variety of inductor products that are suitable for the demands of many applications.

Lineup

- Inductors for Power Circuits (power inductors and choke inductors)
- Chip Inductors (for general purpose, RF circuits, and automotive)

Selection Guide

You can see product data from various viewpoints.

Simulation tool that assists circuit designing



The top page is divided between RF Inductors and Power Inductors.

For details, please refer to our printed catalogs or PDF catalogs.

Cat.No. 005

Shows Murata's inductor selection guides for each application.

Frequently Asked Questions (FAQ)



<http://www.murata.com/products/inductor/>

Inductors (Coils)

Inductors for Power Lines

	Series	Structure	Size Code inch (mm)	Inductance Range (H)								Rated Current (A)			
				1n	10n	100n	1μ	10μ	100μ	1m	10m	10m	100m	1	10
Inductors for Power Lines	 LQW15CN_00	Wire Wound Type (Ferrite Core)	0402 (1005)			18nH							390mA		1.4A
	 LQW15CN_10		0402 (1005)				220nH						300mA		450mA
	 LQW18CN_00		0603 (1608)			4.9nH							430mA		2.6A
	 LQH2MCN_02		0806 (2016)				1.0μH				82μH		90mA		485mA
	 LQH2MCN_52		0806 (2016)				1.0μH				22μH		130mA		595mA
	 LQH2HPN_G0		1008 (2520)				2.2μH				100μH		130mA		1.0A
	 LQH2HPN_GR		1008 (2520)				470nH				22μH		430mA		2.52A
	 LQH2HPN_J0		1008 (2520)				1.5μH				10μH		550mA		1.5A
	 LQH2HPN_M0		1008 (2520)				2.2μH				4.7μH		800mA		1.25A
	 LQH3NPN_G0		1212 (3030)				1.0μH				250μH		130mA		1.525A
	 LQH3NPN_J0		1212 (3030)				1.0μH				47μH		350mA		1.62A
	 LQH3NPN_M0		1212 (3030)				1.0μH				100μH		240mA		2.05A
	 LQH3NPN_MR		1212 (3030)				1.0μH				47μH		460mA		2.15A
	 LQH32PN_N0		1210 (3225)				470nH				120μH		200mA		2.55A
	 LQH32PN_NC		1210 (3225)				470nH				22μH		550mA		2.9A
	 LQH32PB_N0		1210 (3225)				470nH				120μH		200mA		2.55A
	 LQH32PB_NC		1210 (3225)				470nH				22μH		550mA		2.9A
	 LQH43PN_26		1812 (4532)				1.0μH				220μH		240mA		3.3A
	 LQH43PB_26		1812 (4532)				1.0μH				220μH		240mA		3.3A
	 LQH44PN_J0		1515 (4040)				1.0μH				47μH		380mA		1.53A
	 LQH44PN_P0		1515 (4040)				1.0μH				22μH		790mA		2.45A
	 LQH5BPN_T0		2020 (5050)				470nH				22μH		1.05A		4.0A
	 LQH5BPN_T0		2020 (5050)				470nH				22μH		1.05A		4.0A
	 LQH31CN_03		1206 (3216)				120nH				100μH		80mA		970mA
	 LQH32CN_23/33		1210 (3225)				150nH				560μH		60mA		1.45A
	 LQH32CN_53		1210 (3225)				1.0μH				100μH		100mA		1.0A
	 LQH43CN_03		1812 (4532)				1.0μH				470μH		90mA		1.08A
	 LQH43CN_33		1812 (4532)				560nH				3.9μH			1.6A	2.95A
	 LQH55DN_03		2220 (5750)				120nH				10mH		50mA		6.0A
	 LQH66SN_03		2525 (6363)				270nH				10mH		50mA		6.0A
	 LQM18PN_B0	Multilayer Type (Ferrite Core)	0603 (1608)				1.5μH						600mA		
	 LQM18PN_C0		0603 (1608)				470nH				2.2μH		700mA		850mA
	 LQM18PN_D0		0603 (1608)				2.5μH						700mA		
	 LQM18PN_F0		0603 (1608)				1.0μH						600mA		
	 LQM18PN_FR		0603 (1608)				220nH				4.7μH		620mA		1.25A

CAUTION: Use rosin-based flux, but not strong acidic flux (with chlorine content exceeding 0.2wt%) when soldering chip inductors (chip coils).
Do not use water-soluble flux.



For more details on each series, please refer to our website.
Product Search ⇒ <http://www.murata.com/products/inductor/power/>

Continued on the following page. 

Inductors (Coils)

Inductance Lineup

: E-24 or Higher

: E-12

: 0.1nH Step

: Other

*Some items do not match E step.

	Series	Structure	Size Code inch (mm)	Inductance Range (H)								Rated Current (A)			
				1n	10n	100n	1μ	10μ	100μ	1m	10m	10m	100m	1	10
Inductors for Power Lines	LQM21PN_C0	Multilayer Type (Ferrite Core)	0805 (2012)				470nH	2.2μH					600mA	1.1A	
	LQM21PN_G0		0805 (2012)				470nH	3.3μH					800mA	1.3A	
	LQM21PN_GS		0805 (2012)				2.2μH	4.7μH					750mA	950mA	
	LQM21PN_GC		0805 (2012)				1.0μH	2.2μH					800mA	900mA	
	LQM21PN_GR		0805 (2012)				1.0μH	4.7μH					800mA	1.3A	
	LQM2MPN_G0		0806 (2016)				470nH	4.7μH					1.1A	1.6A	
	LQM2MPN_GH		0806 (2016)				160nH	2.2μH					1.0A	4.0A	
	LQM2HPN_G0		1008 (2520)				470nH	4.7μH					1.1A	1.8A	
	LQM2HPN_GS		1008 (2520)				2.2μH	4.7μH					1.0A	1.1A	
	LQM2HPN_GC		1008 (2520)				1.0μH	4.7μH					800mA	1.5A	
	LQM2HPN_GH		1008 (2520)				470nH	2.2μH					1.5A	2.6A	
	LQM2HPN_J0		1008 (2520)				1.0μH	3.3μH					1.0A	1.5A	
	LQM2HPN_JC		1008 (2520)				1.0μH	2.2μH					1.0A	1.5A	
	LQM2HPN_JH		1008 (2520)				470nH	2.2μH					1.5A	2.7A	
	LQM2HPN_E0		1008 (2520)				560nH						1.5A		
	LQM31PN_00		1206 (3216)				470nH	4.7μH					700mA	1.4A	
	LQM31PN_C0		1206 (3216)				470nH	2.2μH					900mA	1.3A	
	LQM32PN_G0		1210 (3225)				1.0μH							1.8A	
	LQM18FN_00		0603 (1608)				1.0μH	10μH					50mA	150mA	
	LQM21DN_00		0805 (2012)				1.0μH	47μH				7.0mA	60mA		
	LQM21FN_00		0805 (2012)				1.0μH	47μH				7.0mA	220mA		
	LQM21FN_70		0805 (2012)				4.7μH	10μH					100mA	120mA	
	LQM21FN_80		0805 (2012)				4.7μH	10μH					100mA	120mA	

Inductors for General Use

	Series	Structure	Size Code inch (mm)	Inductance Range (H)								Rated Current (A)			
				1n	10n	100n	1μ	10μ	100μ	1m	10m	10m	100m	1	10
Inductors for General Use	LQB15NN_10	Multilayer Type (Ferrite Core)	0402 (1005)				220nH	560nH					300mA	380mA	
	LQB18NN_10		0603 (1608)				220nH	560nH					300mA	450mA	
	LQM18NN_00		0603 (1608)				47nH	2.2μH					15mA	50mA	
	LQM21NN_10		0805 (2012)				100nH	4.7μH					30mA	250mA	
	LQH31MN_03	Wire Wound Type (Ferrite Core)	1206 (3216)				150nH	100μH					45mA	250mA	
	LQH32MN_23		1210 (3225)				1.0μH	560μH					40mA	445mA	
	LQH43M(N)N_03		1812 (4532)				1.0μH	2.2mH					30mA	500mA	
	LQH44NN_03		1515 (4040)				510nH	470μH					145mA	4.5A	

CAUTION: Use rosin-based flux, but not strong acidic flux (with chlorine content exceeding 0.2wt%) when soldering chip inductors (chip coils).
Do not use water-soluble flux.



For more details on each series, please refer to our website.

Product Search ⇒ <http://www.murata.com/products/inductor/power/>

Inductors (Coils)

Inductance Lineup

 : E-24 or Higher

 : E-12

 : 0.1nH Step

 : Other

*Some items do not match E step.

RF Inductors

	Series	Structure	Size Code inch (mm)	Inductance Range (H)								Rated Current (A)			
				1n	10n	100n	1μ	10μ	100μ	1m	10m	10m	100m	1	10
RF Inductors	 LQG15HN_02	Multilayer Type (Non-Magnetic Core)	0402 (1005)	1.0nH		120nH						150mA		300mA	
	 LQG15HS_02		0402 (1005)	1.0nH		270nH						110mA		300mA	
	 LQG18HN_00		0603 (1608)	1.2nH		100nH						300mA		500mA	
	 LQP02TN_02	Film Type (Non-Magnetic Core)	01005 (0402)			0.2nH to 39nH						90mA		320mA	
	 LQP02TQ_02		01005 (0402)			0.4nH to 10nH						170mA		990mA	
	 LQP03TG_02		0201 (0603)			0.6nH to 120nH						80mA		850mA	
	 LQP03TN_02		0201 (0603)			0.6nH to 270nH						60mA		850mA	
	 LQP15MN_02		0402 (1005)	1.0nH		33nH						60mA		400mA	
	 LQP18MN_02		0603 (1608)	1.3nH		100nH						50mA		300mA	
	 LQW03AW_00	Wire Wound Type (Non-Magnetic Core)	-	5.4nH		13nH						280mA		460mA	
	 LQW04AN_00		03015 (0804)	1.1nH		33nH						140mA		990mA	
	 LQW15AN_00		0402 (1005)	1.5nH		120nH						110mA		1.0A	
	 LQW15AN_10		0402 (1005)	1.3nH		5.6nH						800mA		1.2A	
	 LQW15AN_80		0402 (1005)	1.3nH		75nH						320mA		3.15A	
	 LQW18AN_00		0603 (1608)	2.2nH		470nH						75mA		850mA	
	 LQW18AN_10		0603 (1608)	2.2nH		33nH						550mA		1.4A	
	 LQW18AN_80		0603 (1608)	2.2nH		390nH						190mA		3.2A	
	 LQW2BAS_00		0805 (2015)	2.8nH		820nH						180mA		800mA	
	 LQW2BHN_03		0805 (2015)	3.3nH		470nH						160mA		1.32A	
	 LQW2BHN_13		0805 (2015)	2.7nH		27nH						900mA		1.9A	
	 LQW2UAS_00		1008 (2520)	12nH		4.7μH						260mA		1.0A	
	 LQW31HN_03		1206 (3216)	8.8nH		100nH						230mA		750mA	
	 LQW21HN_00	Wire Wound Type (Ferrite Core)	0805 (2012)			470nH			2.2μH			75mA		160mA	
	 LQH31HN_03		1206 (3216)			54nH			880nH			180mA		920mA	

CAUTION: Use rosin-based flux, but not strong acidic flux (with chlorine content exceeding 0.2wt%) when soldering chip inductors (chip coils).
Do not use water-soluble flux.



For more details on each series, please refer to our website.

Product Search ⇒ <http://www.murata.com/products/inductor/rf/>

Resistors

Full lineup for various applications



Summary

Using Murata's ceramic processing technology and unique material, we offer a variety of resistor products.

Lineup

- Trimmer Potentiometers
- High Voltage Resistors

Web Content

Introducing Trimmer Potentiometer content on our website.

Trimmer Potentiometer Basic Knowledge

What is Trimmer Potentiometer

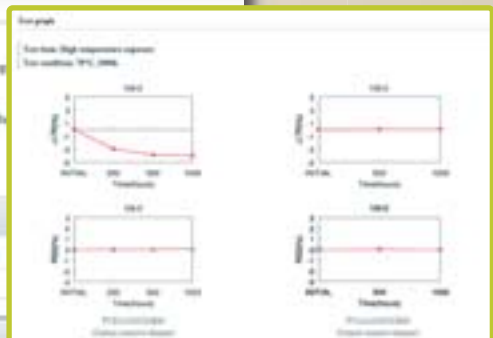
Trimmer Potentiometers are variable resistors for circuit use for circuit boards. They are used in various applications that require adjustment. Since no soldering is required after their fine adjustments, they are useful for prototyping. For the other hand, since potentiometers are also called variable resistors, but they are designed for adjustment for the last minute of products.

There is a table about the classification of Trimmer potentiometers.

In general classification, there are solid type potentiometers and open type with high regard to cost. And there is also another one for the long-term stable products with high resistance and angle. Also, products with high precision performance.

Resistance adjustment type	Solid type	Open type
Single turn	PV01, PV04, PV02	PV02, PV03, PV04
Multi turn (1 turn of 10 turns)	PV01T1, PV01T2, PV01T3, PV01T4	

Trimmer Potentiometer Technical Guides



<http://www.murata.com/products/resistor/>

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- Trimmer Potentiometers Cat. No. R50E

<http://www.murata.com/products/resistor/catalog/>

Resistors

Trimmer Potentiometers

Trimmer Potentiometers are used for trimming the resistance value of electronic equipment.
Murata offers a broad range of Trimmer Potentiometers using both carbon and cermet materials.

Mounting	Structure	Resistive Element Type	Adjustment Angle	Adjustment Turns	Size	Series	Remarks
Surface Mounting	Open Type	Carbon	Top Adjustment	1	2mm	 PVZ2A	Low Profile (0.85mm max.)
					3mm	 PVZ3A	Automatic Adjustment
			Rear Adjustment	1	3mm	 PVZ3G	Low Profile (1.25mm max.)
					3mm	 PVZ3H	
		Cermet	Top Adjustment	1	2mm	 PVZ2R	Low Profile with Smaller Footprint (0.9mm max.)
					3mm	 PVZ3K	
	Sealed Type	Cermet	Top Adjustment	1	2mm	 PVA2A	Automatic Adjustment
					3mm	 PVG3A	Automatic Adjustment with Rotational Stop
					3mm	 PVG3G	with Rotational Stop
			Side Adjustment	11	4mm	 PVM4	
PCB Insertion	Sealed Type	Cermet	Top Adjustment	1	6mm	 PV32H	with Rotational Stop
				4	7mm	 PV12P	
				12	6mm	 PV37W	
				25	10mm	 PV36W	
			Side Adjustment	1	6mm	 PV32N	with Rotational Stop
				4	7mm	 PV12T	
				12	6mm	 PV37X	
				25	10mm	 PV36X	

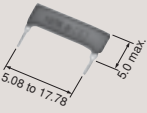


For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Resistors

High Voltage Resistors

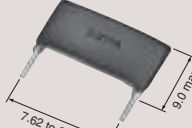
High Voltage Resistors are used for home and office equipment such as printers, copies and air-conditioners. Murata offers the High Voltage Resistors "MHR Series".



MHR03 Series



MHR04 Series



MHR06 Series

(in mm)

Series	Resistance (min.) (MΩ)	Resistance (max.) (MΩ)	Maximum Operating Voltage (Single Use) (kV)	Maximum Operating Voltage (Molded Use) (kV)	Rated Power (W)
MHR03	1	500 to 1000	2 to 8	3 to 14	0.3 to 1.0
MHR04	1	1000	3.5 to 9	10 to 16	0.6 to 1.3
MHR06	1	1000	3.5 to 9	10 to 18	0.8 to 1.5

We have many products with various specifications.
For resistance value and ratio of B circuit, please contact us.



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Timing Devices

A stable timing source for microprocessors in various electronic devices



Summary

Murata's ceramic processing technology and unique piezoelectric material has led to the development of a range of small and thin ceramic timing devices that offer high oscillation frequency and remarkable oscillation tolerance.

Lineup

- Crystal Units
- Ceramic Resonators CERALOCK®

IC Part Number - Timing Devices Search

Search for Timing Devices by IC part number or search for IC part number by Timing Devices on our website. It is possible to search by either oscillating frequency or frequency range, too.

Part Number	Frequency	Other Specifications
1-618-000-0000	1.000	...
1-618-000-0001	1.000	...
1-618-000-0002	1.000	...
1-618-000-0003	1.000	...
1-618-000-0004	1.000	...
1-618-000-0005	1.000	...
1-618-000-0006	1.000	...
1-618-000-0007	1.000	...
1-618-000-0008	1.000	...
1-618-000-0009	1.000	...
1-618-000-0010	1.000	...
1-618-000-0011	1.000	...
1-618-000-0012	1.000	...
1-618-000-0013	1.000	...
1-618-000-0014	1.000	...
1-618-000-0015	1.000	...
1-618-000-0016	1.000	...
1-618-000-0017	1.000	...
1-618-000-0018	1.000	...
1-618-000-0019	1.000	...
1-618-000-0020	1.000	...

<http://search.murata.co.jp/Ceramy/ICsearchAction.do?sLang=en>

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- Ceramic Resonators (CERALOCK®)
- Ceramic Resonator (CERALOCK®) Application Manual
- Crystal Unit

Cat. No. P16E
Cat. No. P17E
Cat. No. P79E

<http://www.murata.com/products/resonator/catalog/>

Timing Devices

Crystal Units

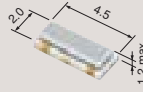
Available in the applications to be necessary for high accuracy resonator.
Especially, the communication clocks such as S-ATA and USB2.0/3.0.

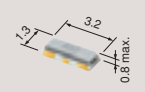
 		(in mm)				
Series	Nominal Frequency (MHz)	Frequency Tolerance (25±3°C)	Equivalent Series Resistance (Ω)	Temperature Stability	Drive Level (μW)	Load Capacitance (pF)
XRCGB	24.0000 to 29.9999	±100ppm max.	150 max.	±50ppm max. (-30 to 85°C)	300 max.	6
	30.0000 to 48.0000	±100ppm max.	100 max.	±50ppm max. (-30 to 85°C)	300 max.	6
XRCHA	12.0000 to 24.0000	±100ppm max.	100 max. (16MHz) 80 max. (20MHz)	±100ppm max. (-40 to 125°C)	300 max.	8

Ceramic Resonators CERALOCK®

Wide variety of product lineup for automotive and consumer use by SMD and lead package.

MHz Chip Type for Automotive (Tight Frequency Tolerance)







(in mm)

Series	1	2	3	4	5	6	7	8	9	10	20	30	40	50	70	100	Temperature Stability (%)	Temperature Range (°C)
CSTCR_G15C				4.00±0.1%							7.99±0.1%						±0.13	-40 to 125
CSTCE_G15C										8.00±0.1%							±0.13	-40 to 125
CSTCE_V13C																	±0.13	-40 to 125

MHz Chip Type for Automotive (Standard Frequency Tolerance)

CSTCC_G_A

CSTCR_G_B

CSTCE_G_A

CSTCE_V_C

CSTCV_X_Q

CSACV_X_Q

(in mm)

Series	Frequency Range (MHz)																Temperature Stability (%)	Temperature Range (°C)
	1	2	3	4	5	6	7	8	9	10	20	30	40	50	70	100		
CSTCC_G_A	2.00±0.5%										3.99±0.5%						±0.4 (15pF) -0.6/+0.3 (47pF)	-40 to 125
CSTCR_G_B		4.00±0.5%									7.99±0.5%						±0.15	-40 to 125
CSTCE_G_A				8.00±0.5%							13.99±0.5%						±0.2	-40 to 125
CSTCE_V_C										14.00±0.5%							±0.15	-40 to 125
CSTCV_X_Q											20.01±0.5%					70.00±0.5%	±0.3	-40 to 125
CSACV_X_Q (No built-in load capacitance)											20.01±0.5%					70.00±0.5%	±0.3	-40 to 125



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Timing Devices

MHz Chip Type for Consumer Electronics (Tight Frequency Tolerance)



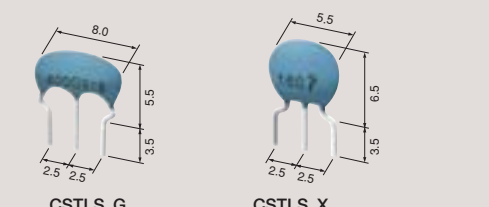
Series	Frequency Range (MHz)																Temperature Stability (%)	Temperature Range (°C)	
	1	2	3	4	5	6	7	8	9	10	20	30	40	50	70	100			
CSTCR_G15L				4.00±0.1%						7.99±0.1%								±0.08	0 to 70
CSTCE_G15L					8.00±0.1%					13.99±0.1%								±0.08	0 to 70
CSTCE_V13L								14.00±0.1%		20.00±0.1%								±0.08	0 to 70
CSTCW_X11										20.01±0.1%				48.00±0.1%				±0.1	0 to 70

MHz Chip Type for Consumer Electronics (Standard Frequency Tolerance)



Series	Frequency Range (MHz)																Temperature Stability (%)	Temperature Range (°C)	
	1	2	3	4	5	6	7	8	9	10	20	30	40	50	70	100			
CSTCC_G	2.00±0.5%				3.99±0.5%													±0.3 (15pF) ±0.4 (47pF)	-20 to 80
CSTCR_G		4.00±0.5%								7.99±0.5%								±0.2	-20 to 80
CSTCE_G					8.00±0.5%						13.99±0.5%							±0.2	-20 to 80
CSTCE_V									14.00±0.5%		20.00±0.5%							±0.3	-20 to 80
CSTCW_X											20.01±0.5%			70.00±0.5%				±0.2	-20 to 80
CSACW_X (No built-in load capacitance)											20.01±0.5%			70.00±0.5%				±0.2	-20 to 80
CSTCG_V											20.00±0.5%			33.86±0.5%				±0.3	-20 to 80

MHz Lead Type for Consumer Electronics (Standard Frequency Tolerance)



CSTLS_G

CSTLS_X

(in mm)

Series	Frequency Range (MHz)																Temperature Stability (%)	Temperature Range (°C)	
	1	2	3	4	5	6	7	8	9	10	20	30	40	50	70	100			
CSTLS_G				3.40±0.5%						10.00±0.5%								±0.2 (15pF) -0.4/+0.2 (47pF)	-20 to 80
CSTLS_X											16.00±0.5%			70.00±0.5%				±0.2	-20 to 80



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Filters for Audio Visual Equipment

Signal extraction for visual and audio in electronic devices



Summary

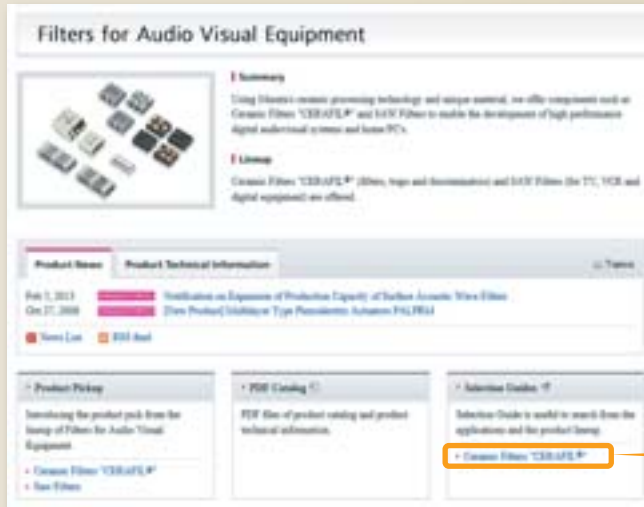
Using Murata's ceramic processing technology and unique material, we offer components such as Ceramic Filters CeraFIL® and SAW Filters to enable the development of high-performance digital audio/visual systems and home PCs.

Lineup

●Ceramic Filters CeraFIL® (Filters, Traps and Discriminators) ●SAW Traps

Web Content

View the CeraFIL® Selection Guide on our website.



http://www.murata.com/products/av_filter/

Application Lineup of CeraFIL®

		Applications				
		Hi-Fi Audio	Portable Audio	Car Audio	TV / VCR	RKE / TPMS
Ceramic Filters	450kHz	●	●	●		●
	10.7MHz	●	●	●	●	●
	2.3 to 6.5MHz	●			●	
Ceramic Discriminators	450kHz					●
	10.7MHz	●	●	●		
Ceramic Traps	4.5 to 6.5MHz				●	

CeraFIL® Selection Guide



Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- CeraFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment
Cat. No. P50E
- CERAMIC FILTER (CeraFIL®) Application Manual
Cat. No. P11E

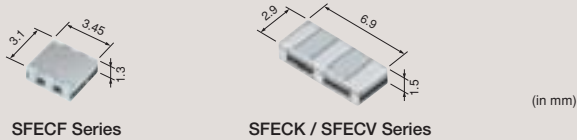
http://www.murata.com/products/av_filter/catalog/

Filters for Audio Visual Equipment

Ceramic Filters CERAFIL®

CERAFIL® 10.7MHz Chip Type

This series is suitable for FM radio and VICS/RKE/TPMS receiver use.
This series enables customers to design thinner and smaller circuits.

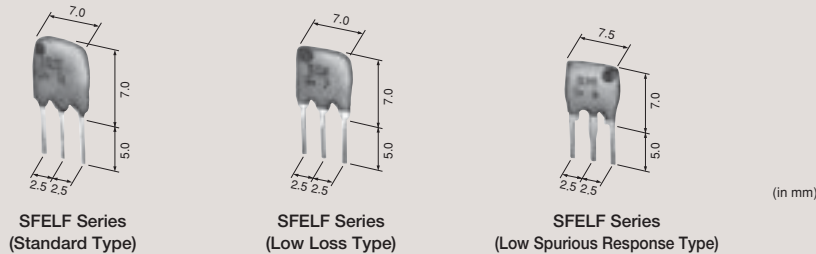


Type	Series	3dB Bandwidth (kHz)						
		D 350	E 330	F 280	G 230	H 180	J 150	K 110
Standard Type	SFECF10M7□	●	●	●	●	●	—	—
High-reliability Type	SFECK10M7□	—	—	—	—	—	●	●
Standard Type	SFECV10M7□	—	—	—	—	—	●	●
Standard Type	SFECV15M0□	—	●	—	—	—	—	—

□ is filled in with a letter denoting 3dB bandwidth.

CERAFIL® 10.7MHz Lead Type

This series is suitable for FM radio, car-audio or AM up-conversion use.



Type	Series	3dB Bandwidth (kHz)							
		F 280	G 230	H 180	J 150	K 110	L 80	M 50	N 35
Standard Type	SFELF10M7□	●	●	●	—	●	—	—	—
Low Loss Type		●	●	●	●	—	—	—	—
Low Spurious Response Type		●	●	●	●	●	—	—	—

□ is filled in with a letter denoting 3dB bandwidth.

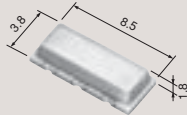


For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

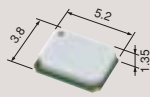
Filters for Audio Visual Equipment

CERAFIL® 2.3 to 6.5MHz Chip Type

SFSKA Series has distinctive features such as wide bandwidth and stable filter performance, enabling customers to design smaller products.
SFSKB Series is suitable for low frequency range.



SFSKA Series



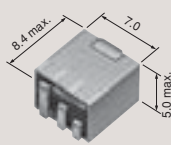
SFSKB Series

(in mm)

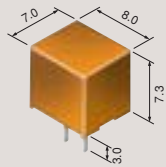
Series	Center Frequency (MHz)												3dB Bandwidth (kHz)
	2.3	2.8	3.2	3.8	4.3	4.5	4.8	5.2	5.5	5.7	6.0	6.5	
SFSKA	—	—	—	—	—	●	—	—	●	—	●	●	±60 min.
SFSKB	●	●	●	●	●	—	●	●	—	●	—	—	±75 min.

CERAFIL® 450kHz

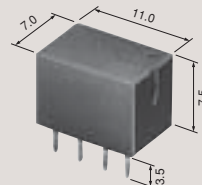
This series features high selectivity, high stability and adjustment-free operation, suitable for intermediate filters for AM radios.



SFPKA Series



SFPLA / CFULA Series



CFWLA Series

(in mm)

Type	Series	6dB Bandwidth (kHz) min.					
		D ±10	E ±7.5	F ±6	G ±4.5	H ±3	J ±2
Chip Standard Type	SFPKA450K□	—	—	—	●	●	—
Lead Standard Type	SFPLA450K□ / CFULA450K□	●	●	●	●	●	●
Lead High-selectivity Type	CFWLA450K□	●	●	●	●	●	●

□ is filled in with a letter denoting 6dB bandwidth.

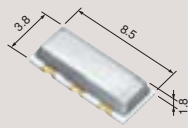


For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Filters for Audio Visual Equipment

Ceramic Traps

TPSKA Series has distinctive features such as high attenuation and high performance group delay time, enabling customers to design smaller products.



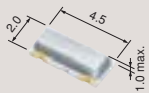
(in mm)

TPSKA Series

Series	Center Frequency (MHz)	Attenuation (dB)
TPSKA	4.500/5.500/6.000/6.500	35 min.

Ceramic Discriminators

In combination with ICs, this type obtains stable demodulation characteristics in a wide bandwidth.



(in mm)

CDSCB Series

Series	Center Frequency
CDSCB	10.700MHz±30kHz

Recommended part number depends on IC specifications. Please contact us with the IC part number to be applied.

SAW Traps

Features: Wide pass band width, Highly selective attenuation band, High performance, Small size, Chip Size Package



SAEEA / SAEEL Series



SAEEB Series

(in mm)

SAW Filters and SAW Duplexers must be used only for the below equipment:

Mobile phones, cordless telephones (except automobile telephone), smartphones, tablet PC, PC (including laptop/netPC), game machines, cameras (except for business use and for security), STB, electronic dictionaries, and digital audio instruments.
Please contact us for other usages.



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Filters for Communication Equipment

Broad lineup of Filters for RF/Local, Duplexers and Filters for IF



Summary

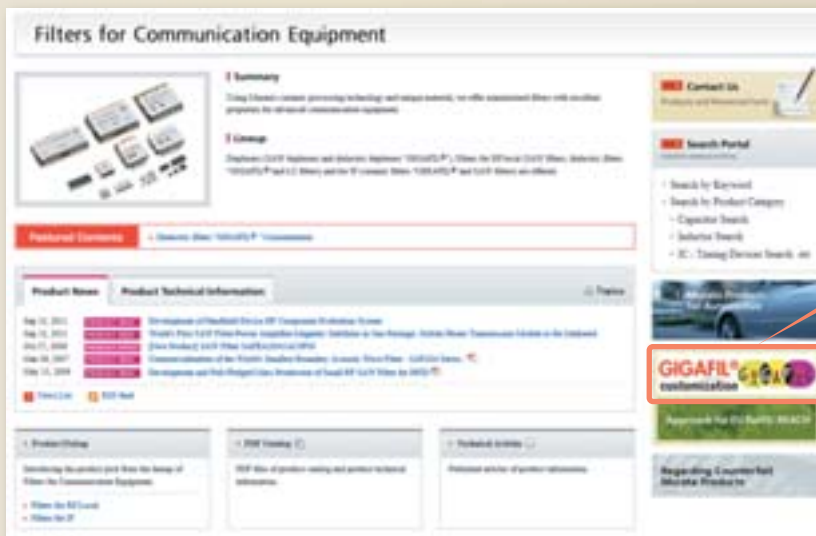
Using Murata's ceramic processing technology and unique material, we offer miniaturized filters with excellent properties for advanced communication equipment.

Lineup

- SAW Filters for Mobile Communications
- Dielectric Filters GIGAFIL®
- Chip Multilayer LC Filters
- Ceramic Filters CERAFIL®
- Ceramic Discriminators

Web Content

For more details on communication equipment, please refer to our website.



Contact Form for Dielectric Filters GIGAFIL® Customization

1. Filter Requirements

Application (Please select):

Filter Type (Please select):

Frequency (Please select):

Power (Please select):

Mounting (Please select):

Remarks (Please select):

Request of price (Please select):

http://www.murata.com/products/comm_filter/

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- Ceramic Filters (CERAFIL®)/Ceramic Discriminators for Communications Equipment
Cat. No. P05E
- CERAMIC FILTER (CERAFIL®) Application Manual
Cat. No. P11E

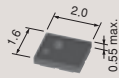
http://www.murata.com/products/comm_filter/catalog/

Filters for Communication Equipment

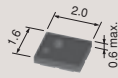
SAW Filters for Mobile Communications

SAW Duplexers

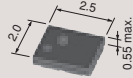
Features: Low Loss, High attenuation performance, Small size, Highly selective pass band, Chip Size Package



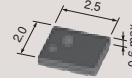
SAYFH Series



SAYRF Series



SAYFP Series



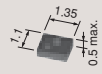
SAYRJ Series

(in mm)

RF Filters

Features: Low Loss, High attenuation performance, Small size, Highly selective pass band, Chip Size Package

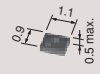
Single Filter



SAFEA Series



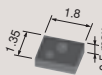
SAFEB Series



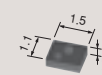
SAFFB Series

(in mm)

Dual Filter



SAWEN Series



SAWFD Series

(in mm)

SAW Bank

This module, which has matching components, can simplify the connection to RFIC.



Filter Bank

Please contact us if you have any questions regarding our SAW Bank products.

DPX Bank

Please contact us if you have any questions regarding our DPX Bank products.

SAW Filters and SAW Duplexers must be used only for the below equipment:

Mobile phones, cordless telephones (except automobile telephone), smartphones, tablet PC, PC (including laptop/netPC), game machines, cameras (except for business use and for security), STB, electronic dictionaries, and digital audio instruments. Please contact us for other usages.



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Filters for Communication Equipment

Dielectric Filters GIGAFIL®

Suitable for the cellular base stations and other telecom infrastructure systems.

Customized proposal responded to the request characteristics is also available in our applicable range mentioned below.

										
DFYH Series		DFCH Series								
	Series	100	1000	2000	3000	4000	5000	Number of Resonators	Input Power Range	
Duplexers	DFYH	700	2600					5 to 10	1 to 10W*	
RF/IF/Local Filter	DFCH	600	3800					2 to 6	1 to 10W*	

*Power depends upon specifications.

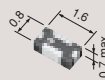
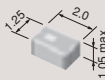
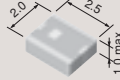


Characteristic customization is available. You can contact us also from our website.
Contact Form ⇒ https://www.murata.co.jp/en/contact/product_gigafil/

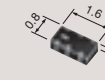
Chip Multilayer LC Filters

Ultra-small and low-profile filters based on ceramic multilayer technology.

Band Pass Filters

					(in mm)
LFB15 Series	LFB18 Series	LFB21 Series	LFB2H Series	LFB31 Series	

Low Pass Filters

			(in mm)
LFL15 Series	LFL18 Series	LFL21 Series	



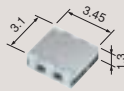
For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Filters for Communication Equipment

Ceramic Filters CERAFIL®

Small and light Filters for IF in communications equipment using unique piezo-electric material.

CERAFIL® 10.7MHz Chip Type

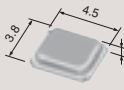


(in mm)

SFEFC Series

Type	Series	3dB Bandwidth (kHz)				
		D	E	F	G	H
		350	330	280	230	180
Standard Type	SFEFC10M7□	●	●	●	●	●

□ is filled in with a letter denoting 3dB bandwidth.



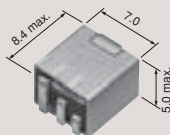
(in mm)

SFSCE Series

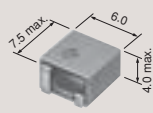
Type	Series	3dB Bandwidth (kHz) min.		
		03	04	05
		±500	±400	±325
Wide Bandwidth	SFSCE10M7WF□□	●	●	●

□ is filled in with a number denoting 3dB bandwidth.

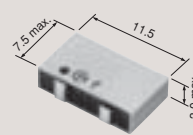
CERAFIL® 450/455kHz Chip Type



SFPKA Series



CFUKG / CFUKF Series



(in mm)

CFWKA Series

Type	Series	6dB Bandwidth (kHz) min.							
		A	B	C	D	E	F	G	H
		±17.5	±15	±12.5	±10	±7.5	±6	±4.5	±3
High-selectivity	SFPKA455K□ (4 Elements)	—	—	—	●	●	●	●	●
High-selectivity Miniature	CFUKG455K□ (4 Elements)	—	—	—	●	●	●	●	—
GDT Flat Type Miniature	CFUKF455K□ (4 Elements)	●	●	●	●	●	—	—	—
High-selectivity	CFWKA450K□ (6 Elements)	—	—	—	●	●	●	●	—

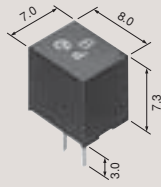
□ is filled in with a letter denoting 6dB bandwidth.



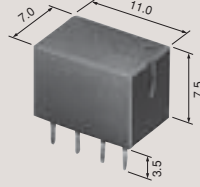
For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Filters for Communication Equipment

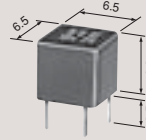
CERAFIL[®] 450/455kHz Lead Type



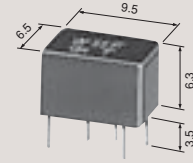
CFULA Series



CFLWA Series



CFULB Series



CFWLB Series

(in mm)

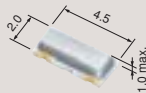
Type	Series	6dB Bandwidth (kHz) min.							
		B ±15	C ±12.5	D ±10	E ±7.5	F ±6	G ±4.5	H ±3	J ±2
High-selectivity Low-profile	CFULA455K□ (4 Elements)	●	●	●	●	●	●	●	—
High-selectivity Low-profile	CFLWA455K□ (6 Elements)	●	●	●	●	●	●	●	●
High-selectivity Miniature	CFULB455K□ (4 Elements)	●	●	●	●	●	●	●	●
High-selectivity Miniature	CFWLB455K□ (6 Elements)	●	●	●	●	●	●	●	●

□ is filled in with a letter denoting 6dB bandwidth.

Ceramic Discriminators

In combination with ICs, Ceramic Discriminators obtain stable demodulation characteristics.

Ceramic Discriminators 10.7MHz Type



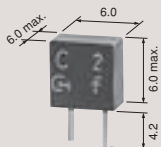
CDSCB Series

(in mm)

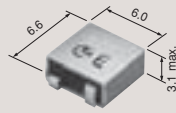
Series	Center Frequency
CDSCB	10.700MHz±30kHz

Recommended part number depends on IC specifications.
Please contact us with the IC part number to be applied.

Ceramic Discriminators 450/455kHz Type



CDBLB Series



CDBKB Series

(in mm)

Series	Center Frequency (kHz)
CDBLB	450/455
CDBKB	450/455

Recommended part number depends on IC specifications.
Please contact us with the IC part number to be applied.



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

RF Components

Broad lineup of RF Components for RF/Local circuits in communications equipment



Summary

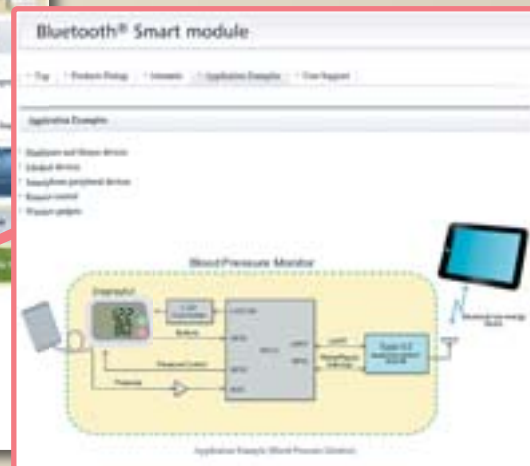
To enhance the technical advantages of communication equipment, Murata offers miniaturized, sophisticated components to meet the demands of many applications.

Lineup

- Isolators
- GaAs Switch ICs
- RF Diode Switches
- Baluns (Chip Multilayer and Wire Wound/Film type)
- Couplers (Chip Multilayer and Film type)
- Chip Multilayer Components (Hybrid Dividers and Diplexers)
- High Frequency Coaxial Connectors
- Single Layer Microchip Capacitors
- Thin Film Circuit Substrate RUSUB®

Web Content

Introducing the details of various RF products.



<http://www.murata.com/products/microwave/>

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- High Frequency Single Layer Microchip Capacitors
Cat. No. C01E

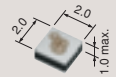
<http://www.murata.com/products/microwave/catalog/>

RF Components

Isolators

Passing signals in the forward direction and blocking signals in the reverse direction

For Mobile Phones

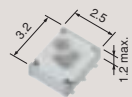


CEG23 Series

(in mm)

Series	Adaptive Frequency Range (MHz)				Size (mm)	Rating Power (W)
	100	1000	2000	3000		
CEG23		700	2600		2.0×2.0×1.0 max.	1.2 max.

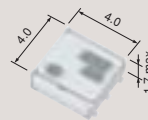
For Base Stations



CES20 Series



CES30 Series



CES40 Series

(in mm)

Series	Adaptive Frequency Range (MHz)				Size (mm)	Rating Power (W)
	100	1000	2000	3000		
CES20			1900	2600	3.2×2.5×1.2 max.	5 max.
CES30			1700	2200	3.2×3.2×1.6 max.	5 max.
CES40		800	950		4.0×4.0×1.7 max.	5 max.



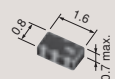
For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

RF Components

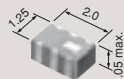
Baluns

SMD baluns constructed with a copper conductor and ceramic material. Ideal for high-frequency applications. Small-size and low-loss baluns can be customized for balance impedance of 50Ω to 200Ω.

Chip Multilayer Type



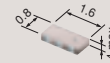
LDB18 Series



LDB21 Series



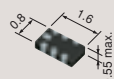
LDM15 Series



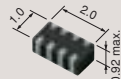
LDM18 Series

(in mm)

Film Type



DXP18B Series



DXP2AB Series

(in mm)

Wire Wound Type



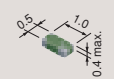
DXW21B Series

(in mm)

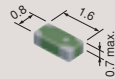
Couplers

An ultra-small, low-profile directional coupler based on ceramic multilayer technology. This coupler achieves ultra-small size, low insertion loss and high isolation.

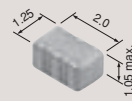
Chip Multilayer Type



LDC15 Series

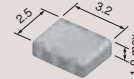


LDC18 Series



LDC21 Series

*It is available with Integrated LPF for LDC21 Series.

LDC32 Series
(3dB Hybrid)

(in mm)



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

RF Components

Film Type

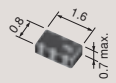


(in mm)

DXP18C Series

Chip Multilayer Hybrid Dividers

Power divider with a multilayer low pass filter in an ultra-compact package.



LDD18 Series

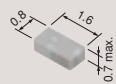


LDD21 Series

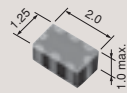
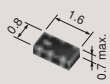
(in mm)

Chip Multilayer Diplexers

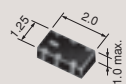
A diplexer branching low and high band.
Suitable for band-switching for dual-band system.



LFD18 Series



LFD21 Series



(in mm)

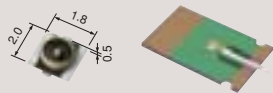


For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

High Frequency Coaxial Connectors

High Frequency Coaxial Cable Connectors

The mating height is only 1.0mm maximum by new mechanical design. Suitable for low profile design.



MM5829-2700



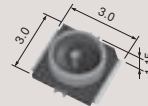
MXJA01



MM4829-2702



MXHP32



MM9329-2700



MXTK92

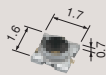
(in mm)

Type	Receptacle Part Number	Rated Voltage (Vrms)	Frequency Rating (GHz)	Temperature Range	VSWR	Cable Number	Mating Height (mm)
JSC	MM5829-2700	30	to 12	-40 to 85°C	1.3 max. (DC to 3GHz)	MXJA01	1.0 max.
HSC	MM4829-2702	250	to 6	-40 to 85°C	1.3 max. (DC to 3GHz)	MXHP32	1.2 max.
GSC	MM9329-2700	250	to 6	-40 to 90°C	1.2 max. (DC to 3GHz)	MXTK92	2.0 max.

Nominal Impedance: 50Ω

High Frequency Coaxial Connectors with Switch

The coaxial connector with switch is very useful for characteristic measurement in cellular phones and microwave circuits.



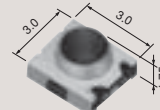
MM8930-2600



MM8030-2610



MM8130-2600



MM8430-2610

(in mm)

Type	Receptacle Part Number	Rated Voltage (Vrms)	Frequency Rating (GHz)	Temperature Range	VSWR	Standard Measurement Probe Part Number
SWH	MM8930-2600	250	to 6	-40 to 85°C	1.2 max. (DC to 3GHz)	MM126515 MXHQ87PA3000
SWG	MM8030-2610	250	to 11	-40 to 85°C	1.2 max. (DC to 3GHz)	MM126320 MXHQ87WJ3000
SWF	MM8130-2600	250	to 6	-40 to 85°C	1.2 max. (DC to 3GHz)	MM126036 MXHS83QE3000
SWD	MM8430-2610	250	to 6	-40 to 85°C	1.2 max. (DC to 3GHz)	

Nominal Impedance: 50Ω



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Single Layer Microchip Capacitors

Very reliable performance and excellent frequency characteristics



Temperature Compensation Type

Capacitance Change (Temperature Range)	Series	Size (mm)	Rated Voltage (Vdc)	Capacitance Range at 25°C (pF)					Operating Temperature Range (°C)
				0.1	1	10	100	1000	
0±30ppm/°C (-25 to 85°C)	CLB0A	0.25×0.25	100	0.1					-55 to 125
	CLB0C	0.35×0.25	100	0.2					-55 to 125
	CLB0D	0.38×0.38	100	0.2	0.4				-55 to 125
	CLB05	0.5×0.5	100	0.3	0.6				-55 to 125
	CLB0E	0.55×0.38	100	0.5	0.6				-55 to 125
	CLB0F	0.64×0.64	100	0.3	1				-55 to 125
	CLB0G	0.7×0.5	100	0.7	1				-55 to 125
	CLB0H	0.71×0.38	100	0.7	0.8				-55 to 125
	CLB0J	0.76×0.76	100	0.4	1.3				-55 to 125
	CLB09	0.9×0.9	100	0.5	1.8				-55 to 125
	CLB1A	1.00×0.64	100	1.1	1.6				-55 to 125
	CLB1B	1.09×0.76	100	1.5	2				-55 to 125
	CLB1C	1.27×1.27	100	1	3.6				-55 to 125
	CLB1E	1.49×0.9	100	2	2.7				-55 to 125
	CLB1G	1.73×1.27	100	3.9	4.7				-55 to 125
	CLB1H	1.78×1.78	100	1.8	6.8				-55 to 125
	CLB2C	2.19×1.27	100	5.1					-55 to 125
	CLB2E	2.29×2.29	100	3	10				-55 to 125
	CLB2L	2.95×1.78	100	7.5	10				-55 to 125
	CLB3G	3.71×2.29	100	11	16				-55 to 125
-750±60ppm/°C (-25 to 85°C)	CLB0A	0.25×0.25	100	0.3	0.7				-55 to 125
	CLB0B	0.30×0.25	100	0.8					-55 to 125
	CLB0C	0.35×0.25	100	0.9					-55 to 125
	CLB0D	0.38×0.38	100	0.9	1.6				-55 to 125
	CLB05	0.5×0.5	100	1	2.4				-55 to 125
	CLB0E	0.55×0.38	100	1.8	2.4				-55 to 125
	CLB0F	0.64×0.64	100	2	4.3				-55 to 125
	CLB0G	0.7×0.5	100	2.7	3				-55 to 125
	CLB0H	0.71×0.38	100	2.7					-55 to 125
	CLB0J	0.76×0.76	100	3	6.2				-55 to 125
	CLB09	0.9×0.9	100	3.3	6.8				-55 to 125
	CLB1A	1.00×0.64	100	4.7	6.2				-55 to 125
	CLB1B	1.09×0.76	100	6.8	7.5				-55 to 125
	CLB1C	1.27×1.27	100	7.5	15				-55 to 125
	CLB1E	1.49×0.9	100	7.5	9.1				-55 to 125
	CLB1H	1.78×1.78	100	13	15				-55 to 125
	CLB2E	2.29×2.29	100	20					-55 to 125

Some capacitances are not available in the CLB05 Series.
All Single Layer Microchip Capacitors are produced after receiving an order.



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

RF Components

High Dielectric Constant Type

Capacitance Change (Temperature Range)	Series	Size (mm)	Rated Voltage (Vdc)	Capacitance Range at 25°C (pF)					Operating Temperature Range (°C)
				0.1	1	10	100	1000	
±10% (-25 to 85°C)	CLB0A	0.25×0.25	100			5.6 12			-55 to 125
	CLB0B	0.30×0.25	100			13 15			-55 to 125
	CLB0C	0.35×0.25	100			16 18			-55 to 125
	CLB0D	0.38×0.38	100			18 30			-55 to 125
	CLB05	0.5×0.5	100			22 43			-55 to 125
	CLB0E	0.55×0.38	100			33 43			-55 to 125
	CLB0F	0.64×0.64	100			43 75			-55 to 125
	CLB0G	0.7×0.5	100			47 68			-55 to 125
	CLB0H	0.71×0.38	100			47 56			-55 to 125
	CLB0J	0.76×0.76	100			68 110			-55 to 125
	CLB09	0.9×0.9	100			68 130			-55 to 125
	CLB1A	1.00×0.64	100			82 120			-55 to 125
	CLB1C	1.27×1.27	100				160 200		-55 to 125
	CLB1E	1.49×0.9	100				150 160		-55 to 125
	CLB1G	1.73×1.27	100				300		-55 to 125
	CLB1H	1.78×1.78	100				300 430		-55 to 125
	CLB2E	2.29×2.29	100				470 620		-55 to 125
+30, -80% (-25 to 85°C)	CLB0A	0.25×0.25	100			27 33			-55 to 125
	CLB0B	0.30×0.25	100			36 39			-55 to 125
	CLB0C	0.35×0.25	100			43 51			-55 to 125
	CLB0D	0.38×0.38	100			62 82			-55 to 125
	CLB05	0.5×0.5	100			75 130			-55 to 125
	CLB0E	0.55×0.38	100			91 120			-55 to 125
	CLB0F	0.64×0.64	100			130 220			-55 to 125
	CLB0G	0.7×0.5	100			150 200			-55 to 125
	CLB0H	0.71×0.38	100			130 150			-55 to 125
	CLB0J	0.76×0.76	100			200 300			-55 to 125
	CLB09	0.9×0.9	100			200 390			-55 to 125
	CLB1A	1.00×0.64	100			240 360			-55 to 125
+30, -90% (-25 to 85°C)	CLB0A	0.25×0.25	100			36 56			-55 to 125
	CLB0D	0.38×0.38	100			91 150			-55 to 125
	CLB05	0.5×0.5	100			130 220			-55 to 125
	CLB0F	0.64×0.64	100			220 390			-55 to 125
	CLB0J	0.76×0.76	100			330 560			-55 to 125
	CLB09	0.9×0.9	100			390 680			-55 to 125

Some capacitances are not available in the CLB0A/B/C/D/E, CLB1C Series.
All Single Layer Microchip Capacitors are produced after receiving an order.



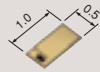
For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Thin Film Circuit Substrate RUSUB®

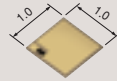
Suitable for Photo diode module.

■ Features

- RUSUB® technology provides a single-layer capacitor and thin film resistor formed in one chip. It reduces not only the number of parts to build a device, but also the assembly costs. It will also contribute to making a device smaller.
- The single-layer structure makes its self-resonant frequency higher. It allows stable operation even at a high frequency range.
- The short distance between the capacitor and thin film resistor makes the residue inductance smaller and contributes to attenuating unnecessary noise so the device can work at its best characteristics.
- Since it has a gold electrode, it is feasible to be installed inside a module, and it allows wire-bonding with gold wire.
- AuSn pre-coating finish is also available.
- It is very suitable for APD (Avalanche Photo Diode), because the capacitor has a withstanding voltage of 100V.



RUCYT101 Series



RUCYT201 Series

(in mm)

- Six types of standard samples of RUSUB® C+R (Capacitor + Resistor) are available.
- Custom substrate size, capacity, resistance value, and electrode pattern shape is available upon request.

Part Number	Size (mm) (L×W×T)	Capacitance (pF)	Resistance (Ω)	Temperature Characteristics of Capacitance at -25 to 85°C	Capacitor Rated Voltage (V)	Temperature Coefficient of Resistance (ppm/°C)	Resistor Rated Power (mW/mm ²)
RUCYT101K00009GNTC	1.0×0.5×0.11	100±10%	50±20%	±10%	100	-70±50	100
RUCYT101K00011GNTC	1.0×0.5×0.11	100±10%	100±20%				
RUCYT101K00012GNTC	1.0×0.5×0.11	100±10%	200±20%				
RUCYT201K00010GNTC	1.0×1.0×0.12	200±10%	50±20%				
RUCYT201K00013GNTC	1.0×1.0×0.12	200±10%	100±20%				
RUCYT201K00014GNTC	1.0×1.0×0.12	200±10%	200±20%				



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Sensors

Offering sensing elements for various applications



Summary

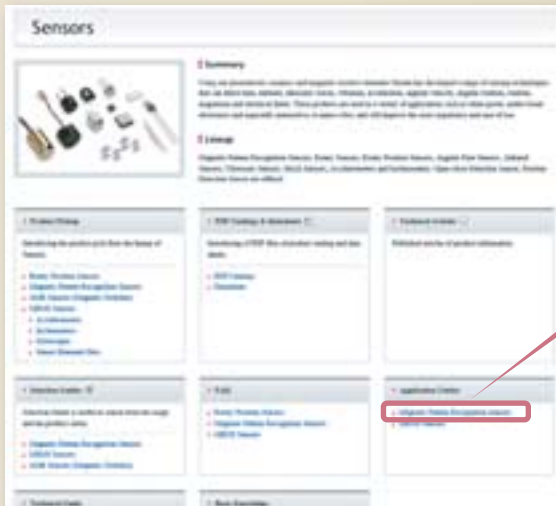
Using our piezoelectric ceramics and magnetic resistive elements Murata has developed a range of sensing technologies that can detect heat, infrared, ultrasonic waves, vibration, acceleration, angular velocity, angular rotation, rotation, magnetism and electrical fields. These products are used in a variety of applications such as white goods, audio/visual electronics and especially automotive, to name a few, improving the user's experience.

Lineup

- Infrared Sensors
- Ultrasonic Sensors
- Rotary Sensors
- Magnetic Pattern Recognition Sensors
- Magnetic Switches
- Shock Sensors
- Accelerometers
- Inclinometers
- Angular Rate Sensors
- Rotary Position Sensors
- Temperature Sensors (Thermistors)

Web Content

Introducing Sensor details on our website.



<http://www.murata.com/products/sensor/>

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- MEMS Sensors & Sensing Elements
- Rotary Position Sensors
- Pyroelectric Infrared Sensors
- NTC Thermistors
- POSISTOR® for Circuit Protection

- Cat. No. S47E
- Cat. No. R51E
- Cat. No. S21E
- Cat. No. R44E
- Cat. No. R90E

<http://www.murata.com/products/sensor/catalog/>

Product Pickup

Rotary Position Sensors

The output voltage of contact type rotary position sensors are proportional to the rotational angle of a rotor in potentiometer fashion.



SV Series

For more details, please refer to our website.
<http://www.murata.com/products/sensor/>

Magnetic Switches (AMR Sensors)

Magnetic switches are used for opening and shutting detection in products such as cellular phones, notebook PCs, and digital cameras.

You can choose the best product from our wide range of features such as the direction of the magnetic field detection, the package, the sampling period, and the sensitivity standard.



MR Series

For more details, please refer to our website.
<http://www.murata.com/products/sensor/>

Magnetic Pattern Recognition Sensors

Magnetic pattern recognition sensors are suitable for differentiation of bank note types and patterns printed with magnetic ink.

Murata's magnetic pattern recognition sensors combine InSb (indium antimonide) magnetoresistive elements with a permanent magnet, enabling weak magnetic information to be easily detected. The features of these sensors are wide dynamic range, wide gap characteristic, and high output, enabling detection of either ferromagnetic or magnetic patterns.



BS05 Series



BS05 Series

For more details, please refer to our website.
<http://www.murata.com/products/sensor/>

Temperature Sensors NTC/PTC Thermistors

NTC/PTC Thermistors are used to detect overheating. Murata offers a variety of thermistor products to meet the demands of various temperatures.



NCP Series



NX Series



PRF Series



PTF Series

For more details on Thermistors, please refer to p.60.

For more details, please refer to our website.
<http://www.murata.com/products/thermistor/>

Accelerometers

Accelerometers are based on the company's proprietary 3-D MEMS technology.

Accelerometers have excellent performance and reliability in a humid environment and at temperature cycling, making high accuracy acceleration detection possible.



SCA Series

For more details, please refer to our website.
<http://www.murata.com/products/sensor/>

Angular Rate Sensors

Gyroscope components and combined sensors (including gyroscopes and accelerometers) based on the company's proven 3-D MEMS technology and highly integrated electronics. High accuracy and high performance sensors are optimum for navigation systems and motion analysis.



SCC Series

For more details, please refer to our website.
<http://www.murata.com/products/sensor/>

Sensors

Lineup

Applications

Detection	Murata's Sensors			Applications										
	Products	Series or Main Part Number	Dimensions (mm)	AV Equipment					Communications Devices					
				TV	Audio	DVD, CD	Digital Video Camera	Digital Camera	PC	Scanner	Multifunction Machine	Printer	FAX	Electronic Bulletin Board
Infrared	Pyroelectric Infrared Sensors	IRS Series	 4.9×4.7×2.4	●										●
		IRA Series	 ø9.2 H4.7	●	●	●		●	●	●	●	●	●	●
Ultrasonic	Ultrasonic Sensors Open Structure Type	MA40S4R (for Receiver) MA40S4S (for Transmitter)	 ø9.9 H7.1											●
	Ultrasonic Sensors Enclosed Type	MA58AF14-0N (for Dual Use)	 ø14.0 H9.0											
	Ultrasonic Sensors High Frequency Type	MA300D1-1 (for Dual Use)	 ø9.9 H7.3							●	●	●		
Magnetic	Rotary Sensors	FR05CM21AR	 ø12.7 H20											
	Magnetic Pattern Recognition Sensors	BS05 Series	 11.15×8.8×12.5 193.0×16.0×7.5											
	Magnetic Switches (AMR Sensors)	MR Series	 MRMS201A: 2.8×2.9×1.1 MRMS501A: 1.45×1.45×0.55				●	●	●					
Acceleration	Shock Sensors	PKGS Series	 3.2×2.0×1.05						●					
	Accelerometers	SCA Series	 10.48×11.31×5.08											
	Inclinometers	SCA Series	 15.58×11.31×5.08								●			
Angle Velocity	Angular Rate Sensors	SCC Series	 8.5×18.7×4.5											
Angle	Rotary Position Sensors	SV Series	 11×12×2.1	●				●			●	●		
Temperature	NTC Thermistors	Chip Type NCP Series	 NCP03: 0.6×0.3×0.3 NCP15: 1.0×0.5×0.5 NCP18: 1.6×0.8×0.8 NCP21: 2.0×1.25×0.85	●	●	●	●	●	●	●	●	●	●	●
		Lead Type NX Series	 NXF: ø1.2 L25 to 150 NXR: ø4.0 L10 to 40	●	●				●	●	●	●	●	●
	PTC Thermistors POSISTOR®	Chip Type PRF Series	 PRF15: 1.0×0.5×0.5 PRF18: 1.6×0.8×0.8 PRF21: 2.0×1.25×0.9	●	●	●	●	●	●	●	●	●	●	●
		Lead Type PTF Series	 ø5.0 max. T4.0 max. ø7.5 T3.0	●	●				●	●	●	●	●	●



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Applications																									
	Home Electronics										Security			Car Electronics		Toy	Others								
	Refrigerator	Electric Rice-cooker	Air Conditioner	Air Purification System	Humidifier	Cleaner	Laundry Machine	Food Fan	Water Heater	Toilet Seats with a Warm-water Shower Feature	Lighting	Security Camera	Security Light	Indoor Security Sensor	Intrusion Detection Sensor	Navigation System	Climate Control	Parking Assist	Radio Control (Attitude Control)	Game Controller	Machine Tool	ATM, CD	Vending Machine	Amusement Machine	
	Murata's Sensors																								
	Products																								
																									Pyroelectric Infrared Sensors
	●		●	●	●				●	●	●	●	●	●	●					●		●	●	●	
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					●	●	●	●	●	●	●														●

Murata's Sensors

Products

Pyroelectric Infrared Sensors

Ultrasonic Sensors Open Structure Type

Ultrasonic Sensors Enclosed Type

Ultrasonic Sensors High Frequency Type

Rotary Sensors

Magnetic Pattern Recognition Sensors

Magnetic Switches (AMR Sensors)

Shock Sensors

Accelerometers

Inclinometers

Angular Rate Sensors

Rotary Position Sensors

NTC Thermistors

PTC Thermistors
POSISTOR®

Thermistors

Facilitate your designs and products utilizing our thermal design and thermistor products.



Summary

Using Murata's semi-conductive ceramics and electrode printing technologies, such as PTC and NTC Thermistors, provides vital protection and sensing within electronic equipment. Simulation software tools are also available for your convenience.

Lineup

- NTC Thermistors (for temperature sensor/compensation, inrush current suppression, and automotive)
- PTC Thermistors POSISTOR® (for overheat sensing, overcurrent protection, inrush current suppression, and automotive)

Features

●Chip Type NTC Thermistor for Temperature Sensor/ Compensation

We have many series of thermistor products with a wide variety of resistance and B-Constant.

The line-up is still expanding, for example,

1. Small size 01005 inch size
2. Tighter tolerance series such as $\pm 0.5\%$ on resistance value.

●Lead Type NTC Thermistor for Sensing Temperature

Thermostrapping products that consist of SMD type NTC with lead wire.

This product has the following advantages:

1. Small head size due to 0402 inch sized chip NTC (NCP15 Series) inside.
2. Soft lead wire
3. Excellent thermal response

●Chip Type PTC Thermistor for Overheat Sensing

PTC thermistor detects abnormal temperatures.

The sensing temperature range is 65°C to 150°C.

We have devised the PRF15 (0402 inch size) Series, which are the smallest PTC thermistors in the world with a tight sensing temperature tolerance of $\pm 3^\circ\text{C}$.

●Chip Type PTC Thermistor for Overcurrent Protection

Our PRG Series of PTC thermistor can be used as a resettable fuse.

Murata provides a variety of PRG Series in different sizes: 0402 (PRG15), 0603 (PRG18) and 0805 (PRG21) inch.

The hold current is up to 500mA and maximum voltage is up to 30V.

●Lead Type PTC Thermistor for Overcurrent Protection

Murata has many series of lead type PTC products; some of our series have a hold current up to 1200mA and maximum voltage is up to 265V. Some series have a resistance tolerance of $\pm 10\%$.

Web Content

Introducing Thermistor content on our website.

Product Lineup $\Rightarrow$ <http://www.murata.com/products/thermistor/>

Product Search $\Rightarrow$ <http://search.murata.co.jp/>

We offer simulation software tools.

Design Tool $\Rightarrow$ http://www.murata.com/products/thermistor/design_support/

Thermistors

NTC Thermistors (for Temperature Sensor/Temperature Compensation)

Chip Type

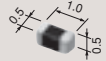
Chip NTC Thermistors have Ni barrier terminations, provide excellent solderability, and offer high stability in harsh environments due to their unique inner construction.



NCP02 Series



NCP03 Series



NCP15 Series



NCP18 Series



NCP21 Series

(in mm)

Series	Size Code Inch (mm)	Resistance (25°C) (Ω)	B-Constant (25-50°C) (K)	Permissible Operating Current (25°C) (mA)	Rated Electric Power (25°C) (mW)	Typical Dissipation Constant (25°C) (mW/°C)	Operating Temperature Range (°C)
NCP02	01005 (0402)	100k	4250	0.01	100	1	-40 to 125
NCP03	0201 (0603)	1.0k to 220k	3500 to 4485	0.06 to 9.5	100	1	-40 to 125
NCP15	0402 (1005)	22 to 470k	3100 to 4500	0.04 to 6.7	100	1	-40 to 125
NCP18	0603 (1608)	100 to 470k	3250 to 4500	0.04 to 3.1	100	1	-40 to 125
NCP21	0805 (2012)	220 to 100k	3500 to 4250	0.14 to 3.0	200	2	-40 to 125

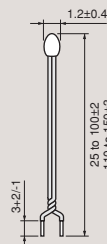
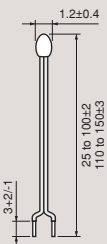
Rated Electric Power shows the required electric power that causes the Thermistor's temperature to rise to 125°C by self heating, at ambient temperature of 25°C.



Please use our online search tool to narrow the search for NCP Series.
http://www.murata.com/products/thermistor/cptc_lineup_nthchp/index.php

Thermo String Type

Small flexible lead type NTC Thermistors with a small head and a thin lead wire.

Twist
NXFT15_1B SeriesWithout twist
NXFT15_2B Series

(in mm)

Series	Resistance (25°C) (Ω)	B-Constant (25-50°C) (K)	Operating Current for Sensor (25°C) (mA)	Thermal Time Constant (25°C) (s)	Full Length (mm)	Operating Temperature Range (°C)
NXFT15	10k to 100k	3380 to 4250	0.04 to 0.12	4	25 to 150	-40 to 125

Operating Current for Sensor raises the Thermistor's temperature by 0.1°C.
 There are also items for automotive use in the NXF Series.

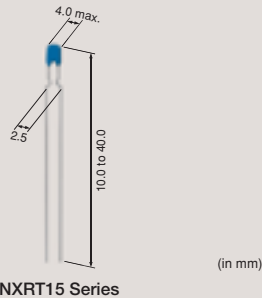


For more details on each series, please refer to our website.
 Product Search ⇒ <http://search.murata.co.jp/>

Thermistors

Lead Type

This product is a thermistor for normal temperature level sensors having self-subsistence due to strong lead strength based on chip NTC.



Series	Resistance (25°C) (Ω)	B-Constant (25-50°C) (K)	Operating Current for Sensor (25°C) (mA)	Thermal Time Constant (25°C) (s)	Full Length (mm)	Operating Temperature Range (°C)
NXRT15	2k to 100k	3500 to 4250	0.04 to 0.27	4	10 to 40	-40 to 125

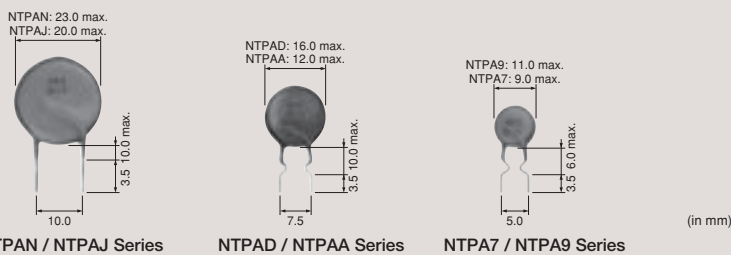
Operating Current for Sensor raises the Thermistor's temperature by 0.1°C.
There are also items for automotive use in the NXR Series.



Please use our online search tool to narrow the search for NXRT Series.
http://www.murata.com/products/thermistor/cptc_lineup_nx_t/index.php

NTC Thermistors (for Inrush Current Suppression)

Effectively suppresses surge currents that are generated when switching power regulators are turned on.



Series	Resistance (25°C) (Ω)	Permissible Max. Current (25°C) (A)	Permissible Max. Current (55°C) (A)	Thermal Time Constant (25°C) (s)	Permissible Electrolytic Capacitor (100V) (μF)	Operating Temperature Range (°C)
NTPAN / NTPAJ	3 to 10	2.6 to 5.4	2.2 to 4.7	125 to 135	5000 to 8600	-20 to 160
NTPAD / NTPAA	2.2 to 16.0	1.7 to 3.7	1.5 to 3.2	65 to 70	1400 to 2700	-20 to 160
NTPA7 / NTPA9	4.0 to 22.0	1.0 to 2.3	0.88 to 2.0	40 to 65	400 to 800	-20 to 160



Please use our online search tool to narrow the search for NTP Series.
http://www.murata.com/products/thermistor/cptc_lineup_ntp/index.php



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Thermistors

PTC Thermistors POSISTOR® (for Overheat Sensing)

Chip Type

For overheat sensing for power transistors, power diodes, and power ICs in hybrid circuits.



Series	Sensing Temperature Range (°C)										Sensing Temperature Tolerance (°C)	Maximum Voltage (V)	Size Code Inch (mm)
	60	70	80	90	100	110	120	130	140	150			
PRF15			●	●	●	●	●	●	●	●	±3/±5	32	0402 (1005)
PRF18		●	●	●	●	●	●	●	●	●	±3/±5	32	0603 (1608)
PRF21			●	●	●	●	●	●	●	●	±5	32	0805 (2012)

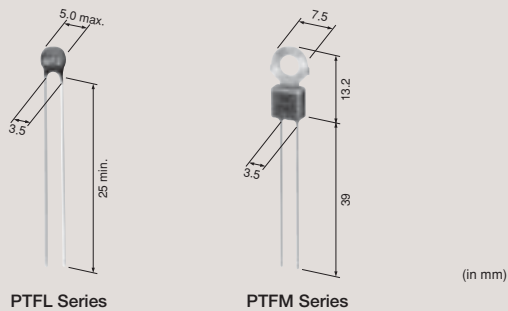
There are also items for automotive use in the PRF Series.



Please use our online search tool to narrow the search for PRF Series.
http://www.murata.com/products/thermistor/cptc_lineup_prf/index.php

Lead Type

For protecting power transistors, stereo main amplifiers, etc., from overheating, and also for sensing the temperature of other components that may be overheated.



Series	Sensing Temperature Range (TS) (°C)										Maximum Voltage (V)	Resistance (25°C) (max.) (Ω)	Resistance (TS-10°C) (max.) (Ω)	Resistance (TS°C) (min.) (Ω)
	60	70	80	90	100	110	120	130	140	150				
PTF□_471Q	●	●	●	●	●	●	●				16	100	330	470
PTF□_222Q	●	●	●	●	●	●	●				16	330	1.5k	2.2k

The blank is filled with type codes. (L: Lead type, M: with lug-terminal)
 Operating Temperature Range is -10 to TS+10°C.



Please use our online search tool to narrow the search for PTF Series.
http://www.murata.com/products/thermistor/cptc_lineup_ptf/index.php

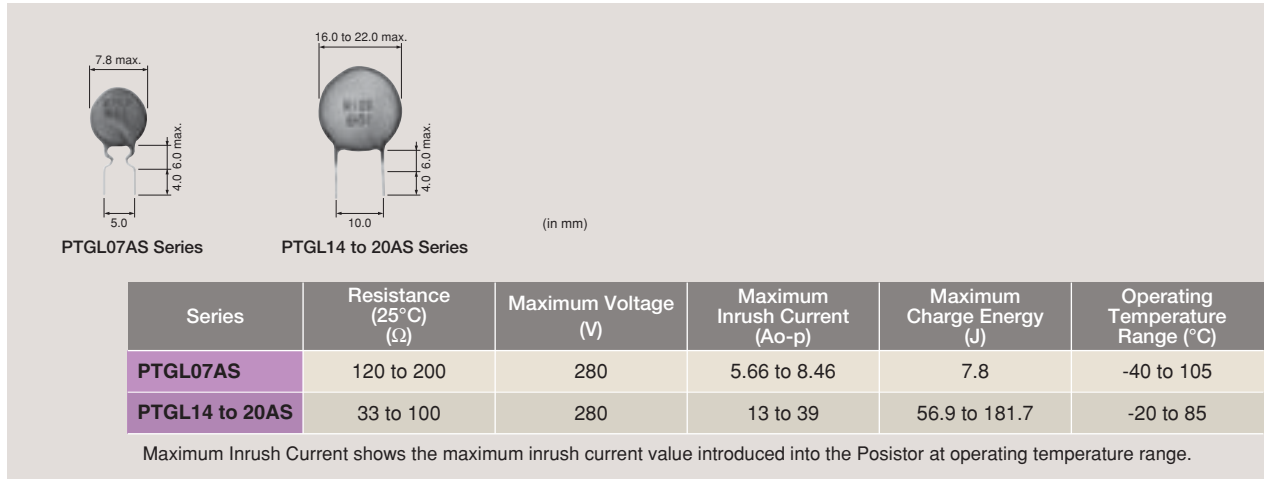


For more details on each series, please refer to our website.
 Product Search ⇒ <http://search.murata.co.jp/>

Thermistors

PTC Thermistors POSISTOR® (for Inrush Current Suppression)

This series is able to support overcurrent or inrush current issues on the power supply circuit.



PTC Thermistors POSISTOR® (for Overcurrent Protection)

Chip Type

Overcurrent Protection device with resettable function suitable for current limiting resistor.



Series	Maximum Voltage (V)	Hold Current (60°C) (mA)	Trip Current (-10°C) (mA)	Maximum Current (A)	Resistance (25°C) (Ω)	Size Code Inch (mm)
PRG15	6 to 30	25 to 88	92 to 318	1.2 to 3.5	2.2 to 33	0402(1005)
PRG18	6 to 24	7 to 220	25 to 850	0.06 to 7.5	1.0 to 470	0603 (1608)
PRG21	6 to 30	30 to 500	110 to 2000	1.1 to 10	0.2 to 22	0805 (2012)

Maximum Current shows typical transformer capacities that can be used.
There are also items for automotive use in the PRG Series.



Please use our online search tool to narrow the search for PRG Series.
http://www.murata.com/products/thermistor/cptc_lineup_prg/index.php



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Thermistors

Lead Type

Best suited to meet the requirements for power supplies and motor protection.
Error-free operations are assured by rush current.



(in mm)

PTGL Series

*The Lead shape is an example.

Series	Maximum Voltage (V)	Hold Current (60°C) (mA)	Trip Current (-10°C) (mA)	Maximum Current (A)	Resistance (25°C) (Ω)
PTGL	16	370 to 1200	1040 to 3360	2.0 to 10.0	0.15 to 1.0
	24	80 to 180	320 to 710	2.0	2.2 to 10
	30	122 to 685	240 to 1900	0.7 to 7.0	0.8 to 13
	32	30 to 60	140 to 240	1.5	15 to 47
	51	213 to 749	332 to 1168	1.0 to 5.0	1.2 to 10
	56	90 to 380	240 to 980	1.0 to 2.5	3.3 to 22
	60	88 to 439	175 to 867	1.0 to 5.0	2.2 to 22
	80	50 to 310	135 to 860	0.7 to 5.5	3.7 to 55
	125	30 to 420	75 to 1050	0.3 to 2.0	3.3 to 180
	140	74 to 340	147 to 780	0.5 to 3.5	4.7 to 56
	250	90 to 100	280 to 300	0.5 to 0.6	12 to 39
	265	28 to 300	78 to 830	0.2 to 4.1	6.0 to 180

Maximum Current shows typical transformer capacities that can be used.
There are also items for automotive use in the PTGL Series.



Please use our online search tool to narrow the search for PTGL Series.
http://www.murata.com/products/thermistor/cptc_lineup_ptg/index.php

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- NTC Thermistors
- POSISTOR® for Circuit Protection
- PTC Thermistor (POSISTOR®) Application Manual
- PTC - NTC for Surface Mounting Application

Cat. No. R44E
Cat. No. R90E
Cat. No. R16E
Cat. No. R01E

<http://www.murata.com/products/thermistor/catalog/>



For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Power Supplies/Energy Devices

Eco-friendly and high quality power supplies



Summary

To meet consumer needs Murata offers power supply products and energy devices that can be used with a variety of equipment, such as video equipment, household information appliances, and communication/transfer equipment. Murata provides standard and customized products using highly reliable, Murata-made components utilizing advanced design and high-density packaging technology. The electrical double-layer capacitor is an energy device that can provide various merits such as downsizing, efficiency, and high function.

Lineup

- DC-DC Converters ●Micro DC-DC Converters ●High Voltage Transformers ●High Voltage Power Supplies
- Switching Power Supplies ●Electrical Double Layer Capacitors

Web Content

Introducing DC-DC Converter and Electrical Double Layer Capacitor content on our website.

Power Supplies

Summary

To meet the needs of various applications, Murata offers power supply products that can be used with a variety of equipment, such as video equipment, household information appliances, and communication/transfer equipment. Murata provides standard and customized products using highly reliable, Murata-made components utilizing advanced design and high-density packaging technology.

Lineup

DC-DC Converter, Switching Power Supplies, High Voltage Transformer, High Voltage Power Supply, Switching Power Supply, Electrical Double Layer Capacitor

DC-DC Converter Selection Guide

Electrical Double Layer Capacitor

Summary

To meet the needs of various applications, Murata offers energy devices that can be used with a variety of equipment, such as video equipment, household information appliances, and communication/transfer equipment. Murata provides standard and customized products using highly reliable, Murata-made components utilizing advanced design and high-density packaging technology.

Product News

Aug. 12, 2013: Murata has announced the introduction of the DMF Series of Electrical Double Layer Capacitors (EDLCs) to its product lineup. The DMF Series is a new series of EDLCs that offers high performance and high reliability. It is designed for use in a variety of applications, including power supply decoupling, energy storage, and backup power. The DMF Series is available in a variety of package sizes and voltage ratings. For more information, please visit the Murata website.

Product Technical Information

Aug. 12, 2013: Murata has announced the introduction of the DMT Series of Electrical Double Layer Capacitors (EDLCs) to its product lineup. The DMT Series is a new series of EDLCs that offers high performance and high reliability. It is designed for use in a variety of applications, including power supply decoupling, energy storage, and backup power. The DMT Series is available in a variety of package sizes and voltage ratings. For more information, please visit the Murata website.

Detailed Catalogs

- High Performance Electrical Double Layer Capacitor DMF Series
Cat. No. O83E
- High Performance Electrical Double Layer Capacitor DMT Series
Cat. No. O84E

Power Supplies ⇒ <http://www.murata.com/products/power/>

Electrical Double Layer Capacitors ⇒ <http://www.murata.com/products/edlc/>

Power Supplies/Energy Devices

DC-DC Converters

DC-DC Converters are vital to the demands of electronic equipment.

Murata offers DC-DC Converters that set the standard for miniaturization, low profile, high efficiency, power-saving, low noise power supplies. Murata provides standard products and customized products, ultra-low-profile products, and products for FPGA.

Non-isolated Type

Non-Isolated Type



MPDRX002S



MPDRX103S



MYGTM01210BZN



MYGTR01205BZN



MYSSM0123EBENL



MYUSP3R303FMP



MPDRX312S



OKL-T/3-W5N-C



OKL-T/6-W12P-C



OKL2-T/20-W12P-C

Part Number	Package	Input Voltage (V)	Nominal Output Power (W)	Output Voltage (V)	Current (A)	Efficiency (%)	Size (mm) L×W×H
MPDRX002S	SMD	3.0 to 5.5	28.8	0.8 to 1.8	16	90	33.0×13.5×8.5
MPDRX103S	SIL	10.8 to 13.2	28.8	0.8 to 1.8	16	86	50.8×5.8×14.0
MYGTM01210BZN	SIL	17 to 40	120	5 to 12	10	97.3	40×40.3×29.2
MYGTR01205BZN	SIL	17 to 40	36	5 to 12	3 to 5.2	93	25.1×12×27
MYSSM0123EBENL	SMD	14 to 40	42	5 to 12	3.5	96	30.2×20.9×12
MYUSP3R303FMP	SMD	3.0 to 5.5	9.9	0.7 to 3.3	3	94	11.0×8.5×5.6
MPDRX312S	SMD	3.0 to 5.5	28.8	0.8 to 1.8	16	86.5	27.8×15.4×4.2
OKL-T/3-W5N-C	SMD	2.7 to 5.5	10.9	0.6 to 3.63	3	95.3	12.2×12.2×6.2
OKL-T/6-W12P-C	SMD	4.5 to 14	33	0.591 to 5.5	6	93	12.2×12.2×7.2
OKL2-T/20-W12P-C	SMD	4.5 to 14	110	0.69 to 5.5	20	94	33.02×13.46×8.75

These are just a few examples of our large assortment of power products.



For more details on our product lineup, please refer to our website.

Product Search ⇒ <http://search.murata.co.jp/>

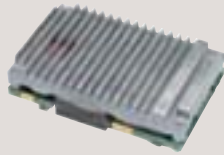
Power Supplies Contents ⇒ <http://www.murata.com/products/power/>

Power Supplies/Energy Devices

Isolated Type



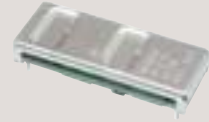
MYBQC01138AZTB



MYBQC01138AZTF



MYBEA01212AZT



MYBEA01212AZTB



MYBEA01210CZT



MYBEA01210CZTB



MYBEB00520AZT

MYBSC01208AZT
MYBSC00520AZTMYBSC01208ABT
MYBSC00520ABT

Part Number	Package	Input Voltage (V)	Nominal Output Power (W)	Output Voltage (V)	Current (A)	Efficiency (%)	Isolation Voltage (VDC)	Footprint (Brick)	Size (mm) L×W×H
MYBQC01138AZTB	Insert	48V (36V to 75V)	400	10.6±6%	38	95.0	1500	1/4	58.4×36.8×14 max.
MYBQC01138AZTF	Insert	48V (36V to 75V)	400	10.6±6%	38	95.0	1500	1/4	58.4×36.8×17 max.
MYBEA01212AZT	Insert	48V (36V to 75V)	140	12±3%	12	92.5	1500	1/8	58.4×22.8×9 max.
MYBEA01212AZTB	Insert	48V (36V to 75V)	140	12±3%	12	92.5	1500	1/8	58.4×22.8×9 max.
MYBEA01210CZT	Insert	24V (18V to 36V)	120	12±3%	10	93.0	1500	1/8	58.4×22.8×9 max.
MYBEA01210CZTB	Insert	24V (18V to 36V)	120	12±3%	10	93.0	1500	1/8	58.4×22.8×9 max.
MYBEB00520AZT	Insert	48V (36V to 75V)	100	5±3%	20	93.0	1500	1/8	57.0×22.8×10 max.
MYBSC01208AZT	Insert	48V (36V to 75V)	100	12±3%	8	92.5	1500	1/16	33.0×23.2×10 max.
MYBSC01208ABT	SMD	48V (36V to 75V)	100	12±3%	8	92.5	1500	1/16	33.0×23.2×10 max.
MYBSC00520AZT	Insert	48V (36V to 75V)	100	5±3%	20	92.0	1500	1/16	33.0×22.8×10 max.
MYBSC00520ABT	SMD	48V (36V to 75V)	100	5±3%	20	92.0	1500	1/16	33.0×22.8×10 max.

These are just a few examples of our large assortment of power products.



For more details on our product lineup, please refer to our website.

Product Search ⇒ <http://search.murata.co.jp/>

Power Supplies Contents ⇒ <http://www.murata.com/products/power/>

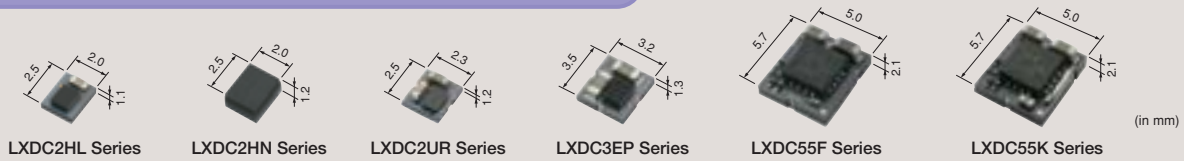
Power Supplies/Energy Devices

Micro DC-DC Converters

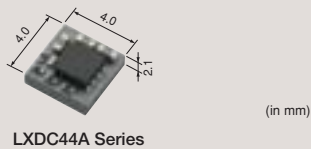
Micro DC-DC Converters are ultra-small power modules that utilize a ferrite substrate and embedded power inductor with superior EMI suppression and mounted power management IC on the ferrite substrate.

The features are ultra-small size, superior EMI suppression, and low conductive and emitted noise, helping to reduce design and process cost. We have a wide range of voltages.

General Buck Converter



Boost Converter



High Voltage Transformers



Series	Type	Features	Output Voltage Vout	Output Current Iout	Drive Frequency	Dimensions (mm) L×W×H
MSH	QF	Small Size	Max. 6kV	0.3mA	35 to 70kHz	39×24×13
	QP	Standard	Max. 8.5kV	0.4mA	35 to 70kHz	41×26×16
	WP	Low Profile	Max. 8.5kV	0.4mA	35 to 70kHz	44×27×11
	NU	High Power	Max. 8.5kV	1mA	30 to 70kHz	44×27×17
	WR	High Voltage	Max. 13kV	0.5mA	30 to 70kHz	49×25×27



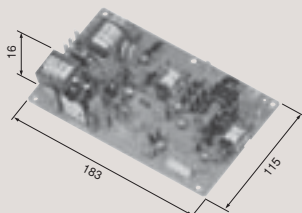
For more details on our product lineup, please refer to our website.

Product Search ⇒ <http://search.murata.co.jp/>

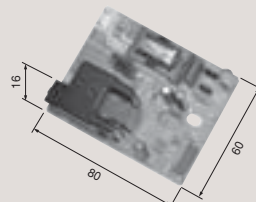
Power Supplies Contents ⇒ <http://www.murata.com/products/power/>

Power Supplies/Energy Devices

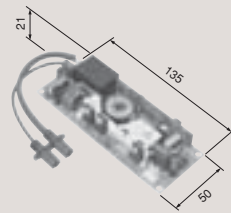
High Voltage Power Supplies



MPH7000 Series



MPH4000 Series
(for Air Purifier/Air Conditioner)



MPL3000 Series
(AC/DC Ballast)

(in mm)

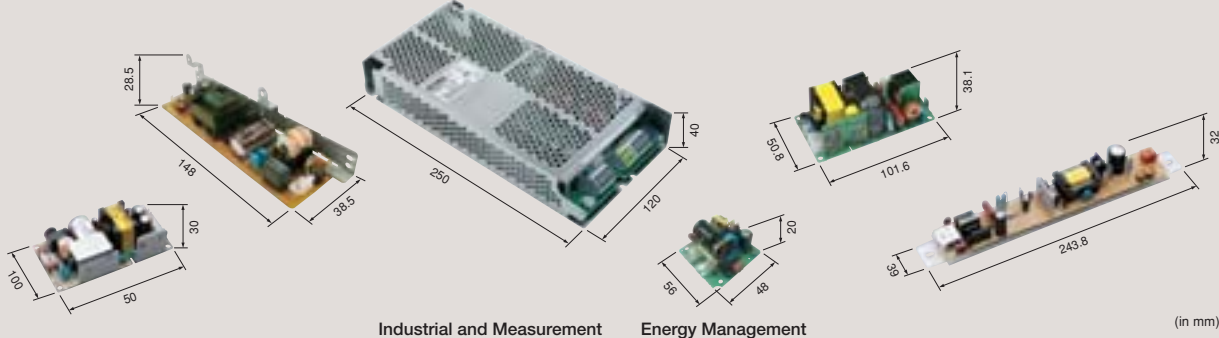
Series	Input Voltage Vin	Power Supply Type		Output Voltage Vout	Output Current Iout	Adjustable Range
MPH7000	24V DC	DC Constant Current		(6kV)	250μA	Iout: 200 to 300μA
		DC Constant Voltage		0.6kV	(1μA)	Vout: 550 to 650μV
		Switching	DC Constant Current	(-1.5kV)	-3μA	Iout: -2 to -4μA
			DC Constant Voltage	1.5kV	(0.5μA)	Vout: 1.4 to 1.6kV
		AC Constant Voltage		1.5kV rms	(250μA rms)	Vout: 1.3 to 1.7kV rms
MPH4000 (for Air Purifier/Air Conditioner)		DC Constant Voltage		±6kV	±400μA	—
		DC Constant Current		(±6kV)	±400μA	—

Series	Applications		Input Voltage Vin	Output Power	Other Specification
MPL3000 (AC/DC Ballast)	Projector		250 to 420V DC	to 350W	For extra-high pressure mercury lamp

For more details on our products, please contact us.

Power Supplies/Energy Devices

Switching Power Supplies



Medical Equipment SOHO Equipment Industrial and Measurement Equipment Energy Management Equipment PBX LED Lighting (in mm)

Applications	Input Voltage	Output Voltage	Safety Standard	EMI Standard	Remarks
Medical Equipment	90 to 264V AC	5V 12V 24V 48V	UL, IEC	CISPR	
SOHO Equipment	90 to 264V AC	5V 12V 24V 48V	UL, IEC	CISPR	Models that provide a power-saving standby mode are also available.
Industrial and Measurement Equipment	90 to 264V AC	24V	UL, IEC	VCCI	150W/300W
Energy Management Equipment	60 to 225V AC	3.3V 24V	UL, IEC	VCCI, CISPR	
PBX	90 to 264V AC	12V 48V	UL, IEC	CISPR	Operating Ambient Temperature 80°C
LED Lighting	90 to 264V AC	24V	IEC, PSE	VCCI, CISPR	PWM Dimming, Accepted for DALI, UART

For more details on our products, please contact us.

Electrical Double Layer Capacitors

Electrical Double-Layer Capacitors (EDLCs), often referred to as supercapacitors, are energy storage devices with high power density characteristics. Murata has focused its R&D efforts on electrical double-layer energy devices, and also established collaboration with the component design and manufacturing firm CAP-XX Limited (CAP-XX). This has led to Murata's development of an EDLC technology resulting in low ESR and high capacitance in a very small package.



DMF/DMT Series (in mm)

Series	Main Part Number	Thickness (mm)	Capacitance (mF)	Rated Voltage (V)	ESR (mΩ)	Operating Temperature (°C)
DMF (High Peak Power Type)	DMF3Z5R5H474M3DTA0	3.2	470	5.5 (Peak Voltage)	45	-30 to 70
DMT (High Reliability Type)	DMT334R2S474M3DTA0	3.5	470	4.2	130	-30 to 85



For more details on each series, please refer to our website.

Product Search ⇒ <http://search.murata.co.jp/>

Electrical Double Layer Capacitors Contents ⇒ <http://www.murata.com/products/edlc/>



For Ionizer Modules, please refer to p.77.

Sound Components

Piezoelectric ceramic materials that expand and shrink by applying voltage are used in piezoelectric sound components.



Summary

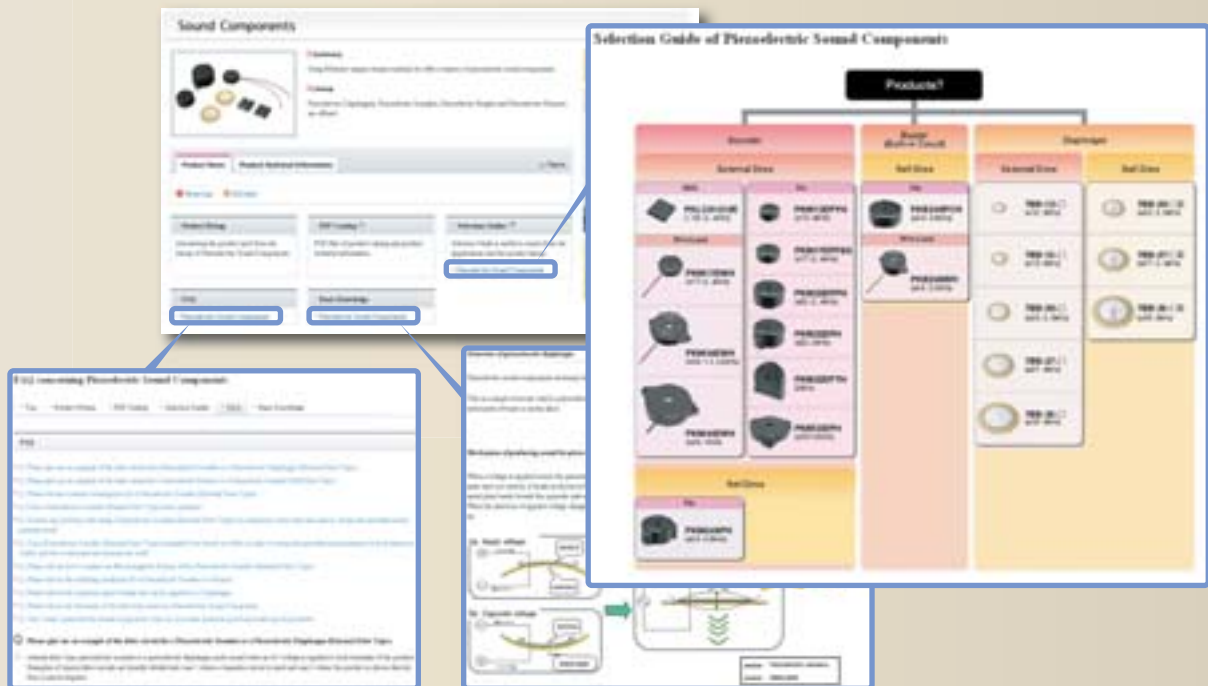
Using Murata's unique ceramic material we offer a variety of piezoelectric sound components.

Lineup

- Piezoelectric Sounders
- Piezoelectric Buzzers
- Piezoelectric Diaphragms

Web Content

Introducing Sound Component content on our website.



<http://www.murata.com/products/sound/>

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- Piezoelectric Sound Components Cat. No. P37E
- Piezoelectric Sound Components Application Manual Cat. No. P15E

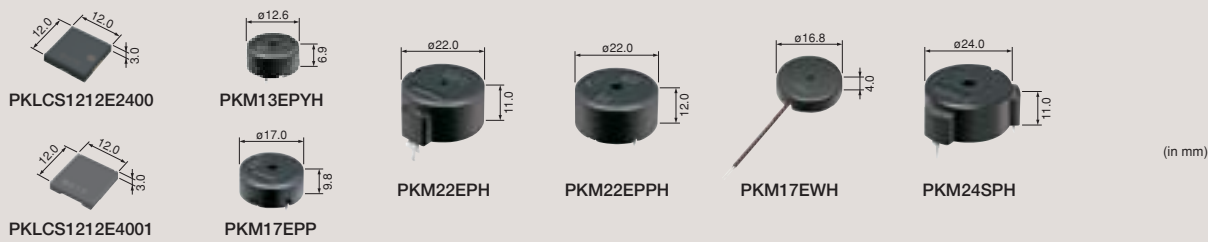
<http://www.murata.com/products/sound/catalog/>

Sound Components

Piezoelectric Sounders

Low power consumption, lightweight

Suitable for office equipment/home appliances/audio equipment

 PKLCS1212E2400 PKM13EPYH PKM22EPH PKM22EPPH PKM17EWH PKM24SPH PKLCS1212E4001 PKM17EPP (in mm)					
Drive Type	Mounting Type	Main Part Number	Sound Pressure Level (dB)	Measurement Condition of Sound Pressure Level	
External Drive	Surface Mounting Type	PKLCS1212E2400-R1	75 min.	[3Vp-p, 2.4kHz, square wave, 10cm]	
		PKLCS1212E4001-R1	75 min.	[3Vp-p, 4kHz, square wave, 10cm]	
	Pin Type	PKM13EPYH4000-A0	70 min.	[3Vp-p, 4kHz, square wave, 10cm]	
		PKM17EPP-2002-B0	70 min.	[3Vp-p, 2kHz, square wave, 10cm]	
		PKM22EPH2001	75 min.	[3Vp-p, 2kHz, square wave, 10cm]	
		PKM22EPPH2001-B0	70 min.	[3Vp-p, 2kHz, square wave, 10cm]	
Self Drive	Lead Type	PKM17EWH4000	75 min.	[3Vp-p, 4kHz, square wave, 10cm]	
	Pin Type	PKM24SPH3805	90 min.	[12Vdc, 10cm]	

Piezoelectric Buzzers

This is a unified piezoelectric sounder connected to a built-in self drive circuit, and it easily generates sound with only a DC power supply.

Suitable for gas detector alarms/burglar alarms/home-electronic appliances

 PKB24SPCH (in mm)				
Drive Type	Mounting Type	Main Part Number	Sound Pressure Level (dB)	Measurement Condition of Sound Pressure Level
Self Drive	Pin Type	PKB24SPCH3601-B0	90 min.	[12Vdc, 10cm]



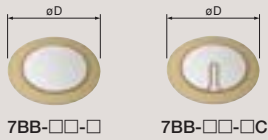
For more details on each series, please refer to our website.
Product Search ⇒ <http://search.murata.co.jp/>

Sound Components

Piezoelectric Diaphragms

Low power consumption, lightweight

Suitable for Clocks/Calculators/Digital cameras/Various alarms (Burglar alarms, etc.)



Drive Type	Main Part Number	Plate Size (øD)
External Drive	7BB-12-9	ø12.0mm
	7BB-15-6	ø15.0mm
	7BB-20-6	ø20.0mm
	7BB-27-4	ø27.0mm
Self Drive	7BB-20-6C	ø20.0mm
	7BB-27-4C	ø27.0mm





Micromechatronics

Utilizing the vibration and deformation of piezoelectric materials.

Microblowers

Tiny air pumps without a motor



■ Features

Microblowers are designed to function as an air pump, using the ultrasonic vibrations of piezoelectric ceramics, which can generate high pressure air from a thin and extremely compact unit.

■ Applications

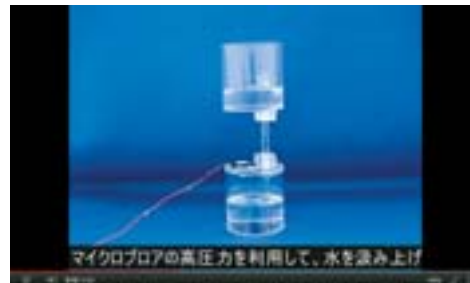
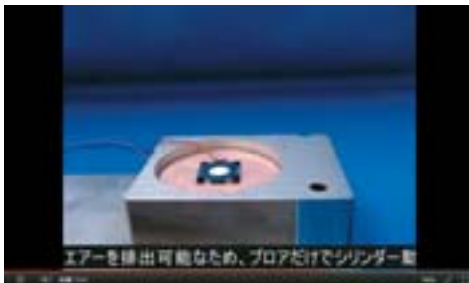
Aroma/diffuser, Gas & Alcohol Sensor, Air ionizer, Amusement, etc.

Part Number	Size	Air Flow	Static Pressure	Voltage of Operation
MZB1001T02	20(W)×20(L)×1.85(H)mm without the nozzle	≥0.7L/min@15Vp-p	≥1.42kPa@15Vp-p	10 to 20Vp-p



Microblower demonstration videos

<http://www.murata.com/products/micromechatronics/demonstration/microblower/>



Piezoelectric Actuators

Quick response and high-accuracy position control.



PALPRM Series

■ Features

Piezoelectric actuators, utilizing the deformation properties of the Piezoelectric ceramics itself, are used for position control within the autofocus system of cellular camera modules and within the image stabilization system of digital still cameras. The features of Murata's piezoelectric actuators contribute to miniaturization of various modules, due to its very usable displacement in spite of its small size and a low profile.

*Please contact us for custom specifications.



For more details on Micromechatronics products, please refer to our website.

<http://www.murata.com/products/micromechatronics/>



Wireless Communication Modules

Available for a wide range of applications such as automotive, mobile computing devices, and household appliances.

Wi-Fi Modules / Bluetooth® · Wi-Fi Combo Modules



■ Features

Compact, highly efficient and flexible custom-made correspondence

■ Applications

Mobile phones, automotive, tablet PC, POS, HT, electric equipment, smart grid, etc.

Bluetooth® Modules / Bluetooth® Low Energy Modules



■ Features

Compact, highly efficient and flexible custom-made correspondence

■ Applications

Mobile phones, automotive, PMP, POS, HT, healthcare, wireless remote control, etc.



Please contact us about Wireless Communication Modules.



Ceramic Applied Products

Contribution to high integration and miniaturization requirements of the automotive industry and RF modules.

Low Temperature Co-fired Ceramics (LTCC) Multi-layer Module Boards



LTCC, Low Temperature Co-fired Ceramics is a multi-layer, glass ceramic substrate that is co-fired with low resistance metal conductors. What makes Murata's LTCC special is our unique "Zero Shrinking Sintering Process," which restricts the ceramic shrinkage to only thickness.

Murata's LTCC multilayer substrates LFC® are useful in a wide range of electronic equipment such as substrates for highly-reliable electronic control units equipping vehicles and functional substrates for miniaturized high-frequency modules in cellular phones.

LFC® Series

Murata's LFC® Series LTCC substrate meets high integration and miniaturization requirements necessary for the automotive industry.

AWG Series

Utilized in low profile, small outline RF modules, the AWG Series features ultra-thin ceramic tapes, multiple material tape lamination and enhanced board strength.



For more details on Ceramic Applied Products, please refer to our website and the PDF catalogs on our website.
<http://www.murata.com/products/ceramic/>



Cat.No. N20E

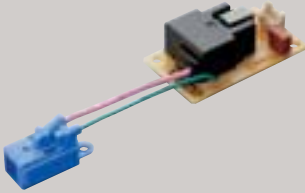
Others Ionizer Modules Ionissimo®

High-concentration ion, compact design, ozone control

Ionissimo® is an ionizer module with unprecedented compactness and high efficiency, capable of generating the largest amount of ions in the industry* owing to Murata's own high-voltage technology and structural design. The ion generator is connected to the driving power supply for modularization and ease of incorporating into equipment.

*Surveyed by Murata (As of March 2011)

MHM Series



■ Features

- Ion is generated at low voltage (-2.0kV) with high efficiency, resulting in high ion concentration.
- Compact equipment may be designed due to small ionizer element and driving power supply.
- Ozone amounts may be optimized for specific applications by controlling the generation of ozone without changing the number of ions.

■ Applications

Air Conditioner, Air Purifier, Static Eliminator, Vacuum Cleaner, etc.



For more details on the Ionizer Modules, please refer to our website.
<http://www.murata.com/products/ionissimo/>



View a demonstration video of Ionizer Modules Ionissimo® on our website

Others

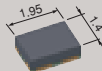
Variable Capacitor

Capacitance value can be adjusted by the tuning voltage

LXRW_V Series



LXRW19V Series



LXRWJFV Series

(in mm)

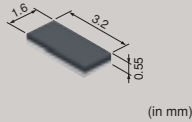
Thin Film Variable Capacitors can carry out the variable of the capacitor by adjusting the tuning voltage. It is designed for use as Frequency Matching for HF band (13.56MHz).

RFID Devices

Built-in IC module for high functional and robust small RFID tags

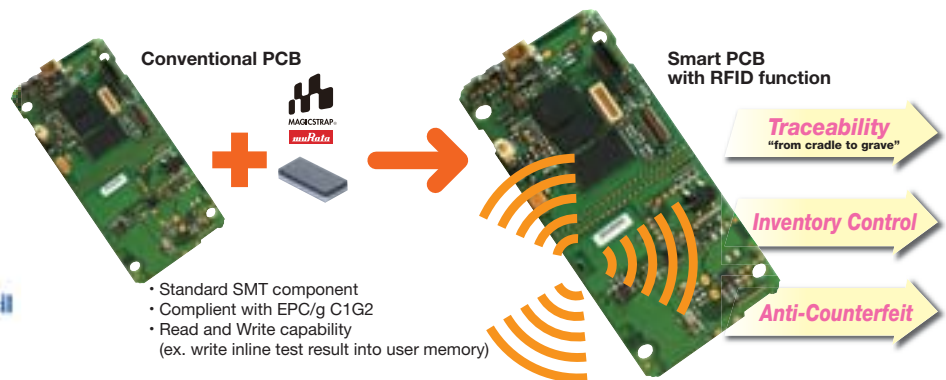
UHF-band MAGICSTRAP®

LXMS31 Series



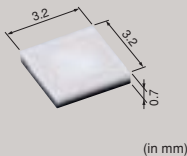
MAGICSTRAP® can be easily assembled by means of reflow soldering and adhesive (electrically conductive or non-conductive). Even if non-conductive adhesive is used, communication will take place when MAGICSTRAP® is bonded onto the antenna, and the RFID tag will function correctly.

MAGICSTRAP® complies with international standard EPC/gC1G2. It is an ultra-miniature (3.2x1.6x0.55mm) robust package with impedance transformation function. MAGICSTRAP® can be bonded onto the antenna over a wide range ($\pm 500\mu\text{m}$). In addition, MAGICSTRAP® supports wide UHF band (860-960MHz) for worldwide use in a single design.

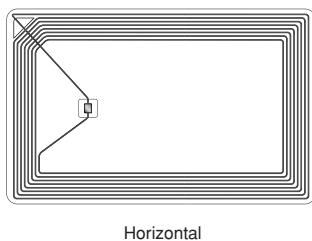


HF-band MAGICSTRAP®

LXMS33 Series



HF-band MAGICSTRAP® is one of the world's smallest HF-band RFID tags (3.2x3.2x0.7mm). Murata has applied its proprietary multi-layer circuit board technology and high-frequency module technology, with which the successful miniaturization of an RFID tag to one-tenth the size of an RFID tag composed of plane surface, was achieved. Furthermore, the new RFID product uses a ceramic module structure that makes it highly resistant to the environment and enables it to achieve stable operation under various environmental conditions.



Miniaturization !



Applications

Small appliance/object tracking, management, certification, authentication, etc.

Electrical Characteristics

Read range: 15mm (reader/writer output: 200mW, antenna size: 35x54mm)



For more details on RFID Devices, please refer to our website.
<http://www.murata.com/products/rfid/>

Wireless Power Transmission Modules

Realization of wireless charging systems

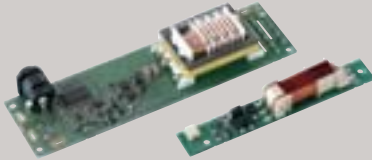
Murata has begun mass production of the capacitive coupling type* of wireless power transmission modules capable of charging at 10W.

This module makes wireless charging systems a reality (Wireless charging systems are capable of charging equipment placed on a charging pad without the need for cable connection).

*Capacitive coupling system

The capacitive coupling system is a method that involves transmitting energy using the electrical fields generated between these electrodes. Since the electric field is generated between the electrodes, it is also called an electric field coupling system.

LXWS Series



■ Features

- Wide charging area
- Ease of mounting
- No heat generation in the wireless power transmission area



For more details on Wireless Power Transmission Modules, please refer to our website.
http://www.murata.com/products/wireless_power/



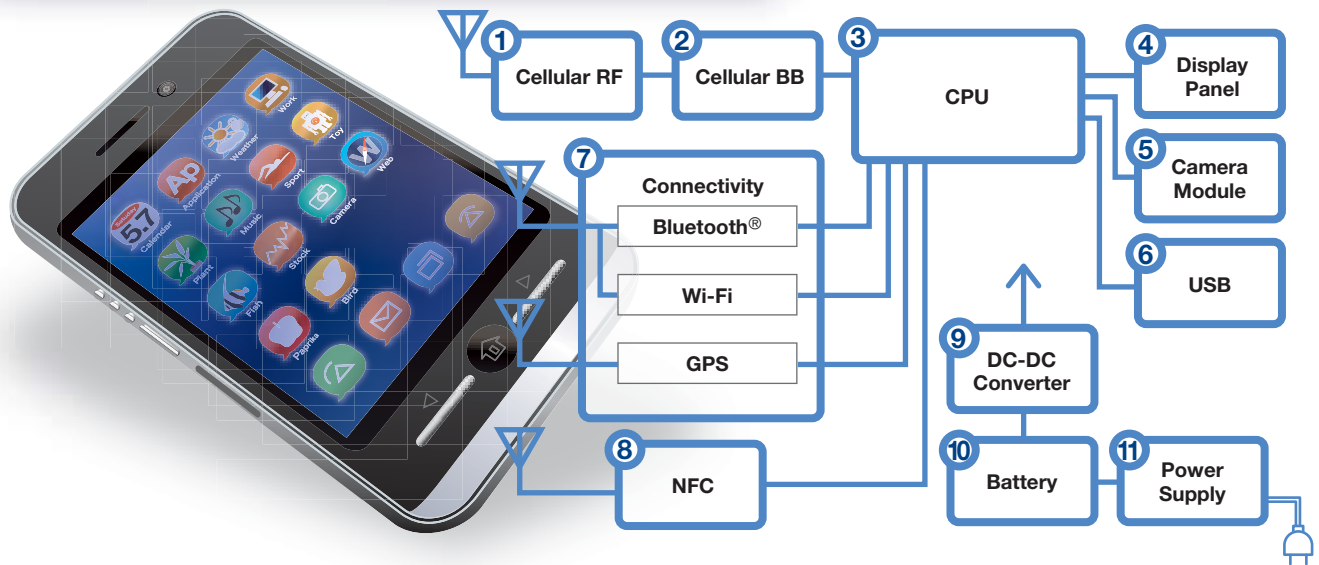
View demonstration videos of Wireless Power Transmission Modules on our website

Memo



Application Guides

Mobile Phones



1 Cellular RF

RF Diode Switches
SWITCHPLEXER®
LMSP Series



Chip Multilayer Diplexers
LFD Series



p51

SAW Duplexers
SAY Series



p44

SAW Filters
SAF Series



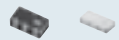
p44

Chip Multilayer LC Filters



p45

Chip Multilayer Hybrid Baluns
LDB/LDM Series



p50

Chip Multilayer Hybrid Dividers
LDD Series



p51

RF Transformer
SMST Series



Coaxial Connectors



p52

GaAs Switch IC



Isolators
CEG23 Series



p49

Micro DC-DC Converters
LXDC Series



p69

Chip Inductors (Chip Coils)
LQW/LQP Series



p30

Trimmer Capacitors
TZY2 Series



p22

ESD Protection Devices
LXES Series



p27

Thermistors
NCP/PRF Series



p61

2 Cellular BB

Micro DC-DC Converters
LXDC Series



p69

3 Terminal Capacitors
NFM Series



p25

Chip Common Mode Choke Coils
DLW/DLP Series



p26

Thermistors
NCP/PRF Series



p61

3 CPU

Crystal Units
XRCGB Series



p37

Chip Ferrite Beads
BLM Series



p24

3 Terminal Capacitors
NFM Series



p25

Thermistors
NCP/PRF Series



p61

4 Display Panel

Micro DC-DC Converters
LXDC Series



p69

Ceramic Resonators CERALOCK®
CSTCE Series



p37

EMI Suppression Filters EMIFIL®
NFA Series



p25

Chip Common Mode Choke Coils
DLW/DLP Series



p26

Trimmer Potentiometers
PVZ2 Series



p34

ESD Protection Devices
LXES Series



p27

Thermistors
NCP/PRF Series



p61

5 Camera Module

Micro DC-DC Converters
LXDC Series



p69

Electrical Double Layer Capacitors
DMF Series



p71

Monolithic Ceramic Capacitors
for Medium Voltage
GR7 Series



p9

Actuators
PALPRM Series



p75

Chip Ferrite Beads
BLM Series



p24

Trimmer Potentiometers
PVZ2 Series



p34

ESD Protection Devices
LXES Series



p27

Thermistors
NCP/PRF Series



p61

6 USB

Micro DC-DC Converters
LXDC Series



p69

Chip Common Mode Choke Coils
DLW/DLP Series



p26

Chip Ferrite Beads
BLM Series



p24

ESD Protection Devices
LXES Series



p27

Thermistors
NCP/PRF Series



p61

7 Connectivity

Bluetooth® Modules



p76

Wi-Fi Modules



p76

Bluetooth® - Wi-Fi Combo Modules



p76

TransferJet® Modules



SAW Filters
SAF Series



p44

Chip Multilayer LC Filters



p45

Chip Multilayer Hybrid Baluns
LDB/LDM Series



p50

Coaxial Connectors



p52

Micro DC-DC Converters
LXDC Series



p69

ESD Protection Devices
LXES Series



p27

Thermistors
NCP/PRF Series



p61

8 NFC

NFC Antennas
FLAN Series



Micro DC-DC Converters
LXDC Series



p69

Crystal Units
XRCGB Series



p37

Chip Ferrite Beads
BLM Series



p24

Chip Inductors (Chip Coils)
LQM/LQH/LQB Series



p30

Trimmer Capacitors
TZY2 Series



p22

Variable Capacitors
LXRW Series



p77

ESD Protection Devices
LXES Series



p27

9 DC-DC Converter

Micro DC-DC Converters
LXDC Series



p69

Metal Terminal Type
Monolithic Ceramic Capacitors
KRM Series



p10

Polymer Aluminum Electrolytic Capacitors
ECAS Series



p21

Thermistors
NCP/PRF Series



p61

10 Battery

Thermistors
NCP/PRF/PRG Series



p61

11 Power Supply

Wireless Power
Transmission Modules



p79

Monolithic Ceramic Capacitors
for Medium Voltage
GR/GA Series



p3

Medium High Voltage
Ceramic Capacitors
DEA/DES Series



p17

Safety Standard Certified
Ceramic Capacitors
Type KX/KY



p18

Chip Inductors (Chip Coils)
LQM/LQH Series



p30

Monolithic Ceramic Capacitors	GRM/GJM Series	High Frequency Filter Circuit		p3
Monolithic Ceramic Capacitors	GRM Series	Coupling/Decoupling/For Step-up		p3
Polymer Aluminum Electrolytic Capacitors	ECAS Series	Smoothing/Transient Backup		p21
Chip Inductors (Chip Coils)	LQM/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance		p30
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
3 Terminal Capacitors	NFM/NFE Series	Noise Suppression		p25
Chip Common Mode Choke Coils	DLW/DLP Series	Noise Suppression		p26
Microwave Absorbers	EA Series	Noise Suppression		p28
Ferrite Cores	FS Series	Noise Suppression		p28
Thin Type Sandwich Cores	FSSA Series	Noise Suppression		p28

Personal Computers

1 CPU/Chip Set

Micro DC-DC Converters LXDC Series
Low ESL Monolithic Ceramic Capacitors LLL/LLA/LLM Series



p69



p5

Polymer Aluminum Electrolytic Capacitors ECAS Series



p21

Crystal Units XRCGB Series



p37

Chip Ferrite Beads BLM Series



p24

3 Terminal Capacitors NFM Series



p25

Thermistors NCP/PRF Series



p61

2 DDR Memory

Micro DC-DC Converters LXDC Series



p69

Polymer Aluminum Electrolytic Capacitors ECAS Series



p21

Chip Ferrite Beads BLM Series



p24

3 Display Panel

Metal Terminal Type Monolithic Ceramic Capacitors KRM Series



p10

Ceramic Resonators CERALOCK® CSTCE/CSTCR Series



p37

Power Inductors LQH Series



p30

Trimmer Potentiometers PVZ2 Series



p34

Thermistors PRF/PRG Series



p63

4 LVDS/eDP

Chip Common Mode Choke Coils DLW/DLP Series



p26

ESD Protection Devices LXES Series



p27

Thermistors NCP/PRF Series



p61

5 ODD

Ceramic Resonators CERALOCK® CSTCW Series



p38

Crystal Units XRCGB Series



p37

Trimmer Potentiometers PVZ2 Series



p34

Thermistors NCP Series



p61

6 HDD/SSD

Shock Sensors PKGS Series



p58

Micro DC-DC Converters LXDC Series



p69

Electrical Double Layer Capacitor DMT Series



p71

Actuators PALHRS Series



p75

Polymer Aluminum Electrolytic Capacitors ECAS Series



p21

Crystal Units XRCGB Series



p37

Thermistors NCP/PRF Series



p61

7 LAN

Monolithic Ceramic Capacitors for Medium Voltage GR4 Series



p9

Chip Common Mode Choke Coils DLW/DLP Series



p26

8 USB3.0/USB2.0

Micro DC-DC Converters LXDC Series



p69

Polymer Aluminum Electrolytic Capacitors ECAS Series



p21

Crystal Units XRCGB Series



p37

Chip Common Mode Choke Coils DLW/DLP Series



p26

Chip Ferrite Beads BLM Series



p24

ESD Protection Devices LXES Series



p27

Thermistors PRG Series



p64

9 HDMI®/DisplayPort

Chip Common Mode Choke Coils DLW/DLP Series



p26

ESD Protection Devices LXES Series

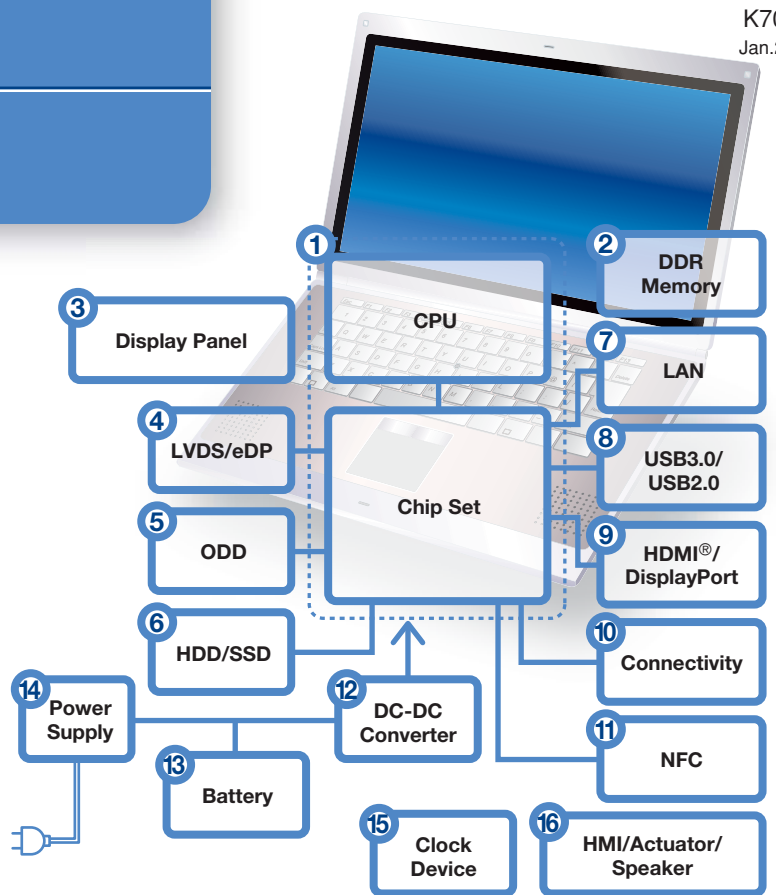


p27

Thermistors PRG Series



p64



10 Connectivity

Bluetooth® Modules



p76

Wi-Fi Modules



p76

Bluetooth® - Wi-Fi Combo Modules



p76

TransferJet® Modules



SAW Filters
SAF Series



p44

Chip Multilayer LC Filters



p45

Chip Multilayer Hybrid Baluns
LDB/LDM Series



p50

Coaxial Connectors



p52

Micro DC-DC Converters
LXDC Series



p69

ESD Protection Devices
LXES Series



p27

11 NFC

NFC Antennas
FLAN Series



Micro DC-DC Converters
LXDC Series



p69

Crystal Units
XRCGB Series



p37

Chip Ferrite Beads
BLM Series



p24

Chip Inductors (Chip Coils)
LQM/LQH/LQB Series



p30

Trimmer Capacitors
TZY2 Series



p22

Variable Capacitors
LXRW Series



p77

ESD Protection Devices
LXES Series



p27

12 DC-DC Converter

Micro DC-DC Converters
LXDC Series



p69

Thermistors
NCP/PRF Series



p61

Metal Terminal Type
Monolithic Ceramic Capacitors
KRM Series



p10

Polymer Aluminum
Electrolytic Capacitors
ECAS Series



p21

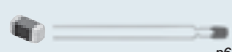
13 Battery

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

Thermistors
NXP/PRF/PRG Series



p62

14 Power Supply

Micro DC-DC Converters
LXDC Series



p69

Wireless Power
Transmission Modules



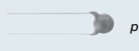
p79

Monolithic Ceramic Capacitors
for Medium Voltage
GR/GA Series



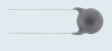
p3

Medium High Voltage
Ceramic Capacitors
DEA/DES Series



p17

Safety Standard Certified
Ceramic Capacitors
Type KX/KY



p18

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

Trimmer Potentiometers
PVG3 Series



p34

Chip Common Mode Choke Coils
DLW/DLP Series



p26

Thermistors
NCP/NTP/PRF Series



p61

15 Clock Device

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

Crystal Units
XRCGB Series



p37

16 HMI/Actuator/Speaker

Pyroelectric Infrared Sensors
IRA Series



p58

Ultrasonic Sensors
MA Series



p58

ESD Protection Devices
LXES Series

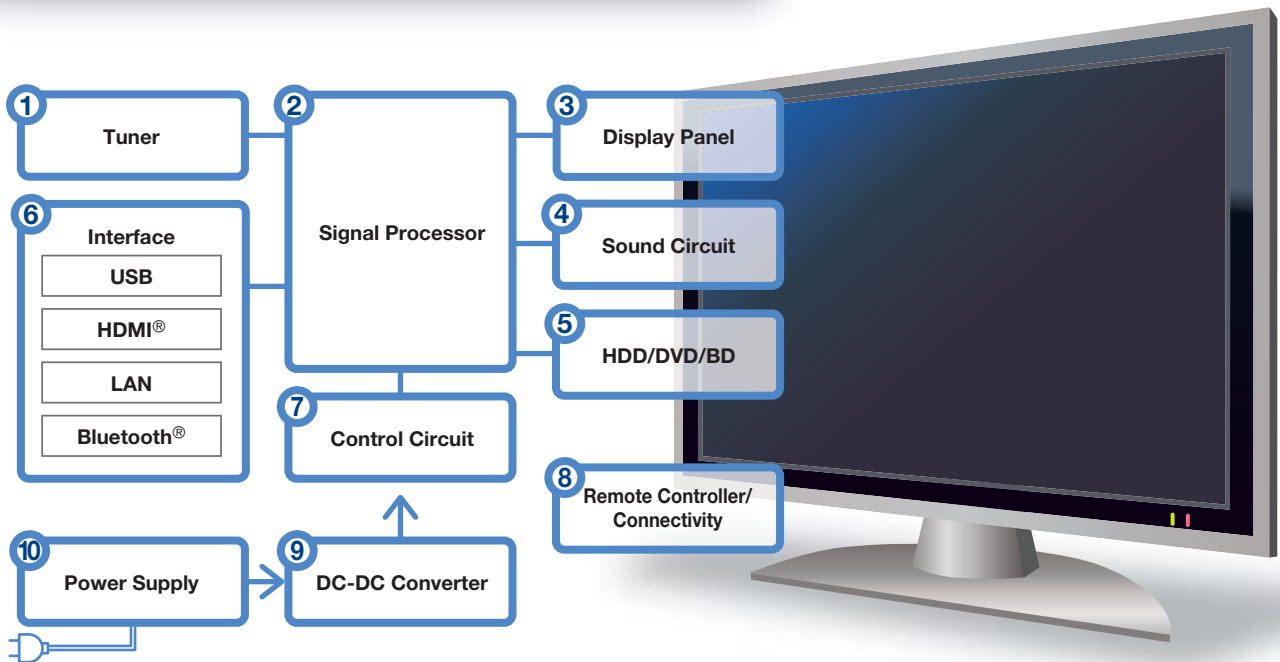


p27

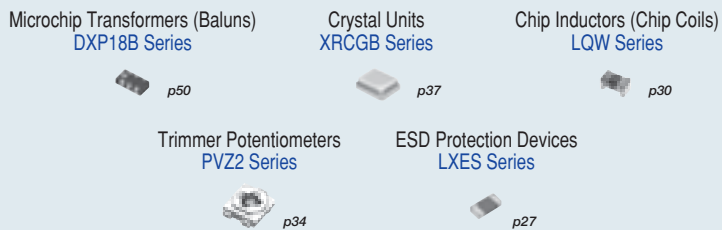
General Purpose

Monolithic Ceramic Capacitors	GRM Series	Coupling/Decoupling		p3
Polymer Aluminum Electrolytic Capacitors	ECAS Series	Smoothing/Transient Backup		p21
Radial Lead Type Monolithic Ceramic Capacitors	RDE Series	Coupling/Decoupling		p15
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
3 Terminal Capacitors	NFM/NFE Series	Noise Suppression		p25
Microwave Absorbers	EA Series	Noise Suppression		p28
Ferrite Cores	FS Series	Noise Suppression		p28

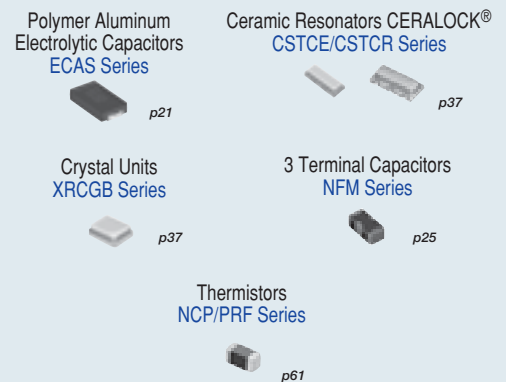
Televisions



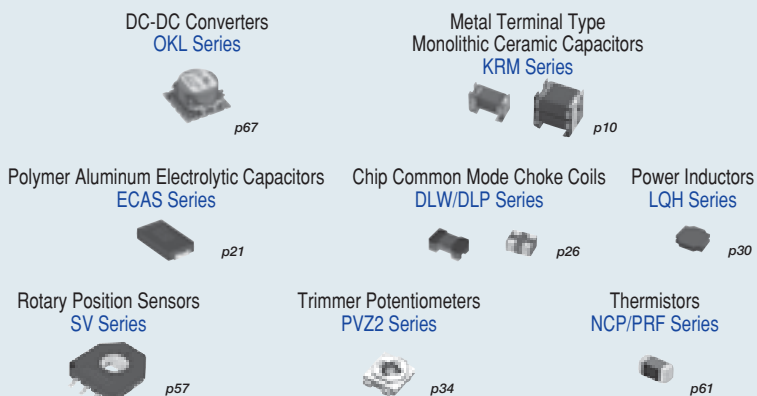
1 Tuner



2 Signal Processor



3 Display Panel



4 Sound Circuit



5 HDD/DVD/BD



6 Interface

Bluetooth® Modules



p76

Bluetooth® Smart Modules
LBCA/LBMA Series



11n Modules



Polymer Aluminum Electrolytic Capacitors
ECAS Series



p21

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

Crystal Units
XRCGB Series



p37

Chip Common Mode Choke Coils
DLW/DLP Series



p26

ESD Protection Devices
LXES Series



p27

Thermistors
PRG Series



p64

7 Control Circuit

Bluetooth® Modules



p76

Pyroelectric Infrared Sensors
IRS Series



p58

Micro DC-DC Converters
LXDC Series



p69

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

9 DC-DC Converter

Micro DC-DC Converters
LXDC Series



p69

Metal Terminal Type Monolithic Ceramic Capacitors
KRM Series



p10

Polymer Aluminum Electrolytic Capacitors
ECAS Series



p21

Power Inductors
LQH Series



p30

Thermistors
NCP/PRF Series



p61

8 Remote Controller/Connectivity

Bluetooth® Modules



p76

Wi-Fi Modules



p76

Bluetooth® Smart Modules



TransferJet® Modules



Shock Sensors
PKGS Series



p58

Micro DC-DC Converters
LXDC Series



p69

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

Piezoelectric Sounders
PKM/PKLC Series



p73

Chip Inductors (Chip Coils)
LQB Series



p31

ESD Protection Devices
LXES Series



p27

10 Power Supply

Monolithic Ceramic Capacitors
for Medium Voltage
GR/GA Series



p3

Medium High Voltage
Ceramic Capacitors
DEA/DES Series



p17

Safety Standard Certified
Ceramic Capacitors
Type KX/KY



p18

Trimmer Potentiometers
PVG3 Series



p34

AC Line Filters
PLA/PLY Series



p28

Thermistors
NCP/NTP/PRF/PTG Series



p61

General Purpose

Monolithic Ceramic Capacitors	GRM Series	High Frequency Filter Circuit/Frequency Control		p3
Monolithic Ceramic Capacitors	GRM Series	Coupling/Decoupling		p3
Polymer Aluminum Electrolytic Capacitors	ECAS Series	Smoothing/Transient Backup		p21
Radial Lead Type Monolithic Ceramic Capacitors	RDE Series	Coupling/Decoupling		p15
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance		p30
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
3 Terminal Capacitors	NFM/NFE Series	Noise Suppression		p25
Ferrite Cores	FS Series	Noise Suppression		p28
Thin Type Sandwich Cores	FSSA Series	Noise Suppression		p28



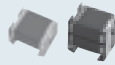
1 ECU

Low Temperature Co-fired
Ceramics (LTCC) Ceramic
Multilayer Substrates LFC®



p76

Metal Terminal Type
Monolithic Ceramic Capacitors
KCM Series



p14

Monolithic Ceramic
Capacitors
GCM/GCJ Series



p11

Monolithic Ceramic Capacitors
for Conductive Glue Mounting
GCG Series



p13

Radial Lead Type
Monolithic Ceramic Capacitors
RH Series



p20

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

Crystal Units
XRCHA-F-A Series



p37

Accelerometers
SCA Series



p57

Gyroscopes
SCC Series



p57

Thermistors
PRF/PTG Series



p63

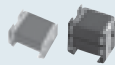
2 AT

Low Temperature Co-fired
Ceramics (LTCC) Ceramic
Multilayer Substrates LFC®



p76

Metal Terminal Type Monolithic
Ceramic Capacitors
KCM Series



p14

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

Crystal Units
XRCHA-F-A Series



p37

Accelerometers
SCA Series



p57

Thermistors
PRF/PTG Series



p63

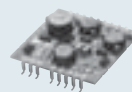
3 Auxiliary Motors

Low Temperature Co-fired
Ceramics (LTCC) Ceramic
Multilayer Substrates LFC®



p76

DC-DC Converters



p67

Metal Terminal Type
Monolithic Ceramic Capacitors
KCM Series



p14

Radial Lead Type
Monolithic Ceramic Capacitors
RH Series



p20

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

Large Current Common Mode Choke Coils
PLT10HH Series



p26

Thermistors
PRF/PTG Series



p63

4 TPMS

Shock Sensors
PKGS Series



p58

Ceramic Filters CERAFIL®
SFECF Series



p40

Ceramic Discriminators
CDSCB Series



p42

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

Crystal Units
XRCHA-F-A Series



p37

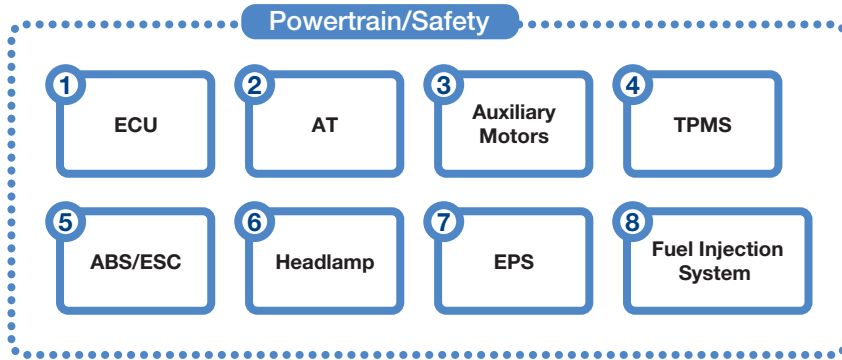
Pressure Sensor Elements



Thermistors
PRF Series



p63



5 ABS/ESC

Low Temperature Co-fired
Ceramics (LTCC) Ceramic
Multilayer Substrates LFC®



p76

Metal Terminal Type
Monolithic Ceramic Capacitors
KCM Series



p14

Monolithic Ceramic
Capacitors
GCM/GCJ Series



p11

Monolithic Ceramic Capacitors
for Conductive Glue Mounting
GCG Series



p13

Ceramic Resonators
CERALOCK®
CSTCE/CSTCR Series



p37

Crystal Units
XRCHA-F-A Series



p37

Accelerometers
SCA Series



p57

Gyroscopes
SCC Series



p57

Thermistors
for Conductive Glue Mounting
NCG18 Series



6 Headlamp

Monolithic Ceramic Capacitors
GCM/GCJ Series



p11

Monolithic Ceramic Capacitors
for Conductive Glue Mounting
GCG Series



p13

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

Crystal Units
XRCHA-F-A Series



p37

Thermistors
for Conductive Glue Mounting
NCG18 Series



7 EPS

Low Temperature Co-fired
Ceramics (LTCC) Ceramic
Multilayer Substrates LFC®



p76

Metal Terminal Type
Monolithic Ceramic Capacitors
KCM Series



p14

Monolithic Ceramic Capacitors
GCM/GCJ Series



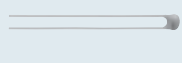
p11

Monolithic Ceramic Capacitors
for Conductive Glue Mounting
GCG Series



p13

Radial Lead Type
Monolithic Ceramic Capacitors
RCE Series



p19

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series



p37

Crystal Units
XRCHA-F-A Series



p37

Thermistors
for Conductive Glue Mounting
NCG18 Series



p57

Accelerometers
SCA Series



p57

Gyroscopes
SCC Series



p57

Thermistors
PRF/PTG Series



p63

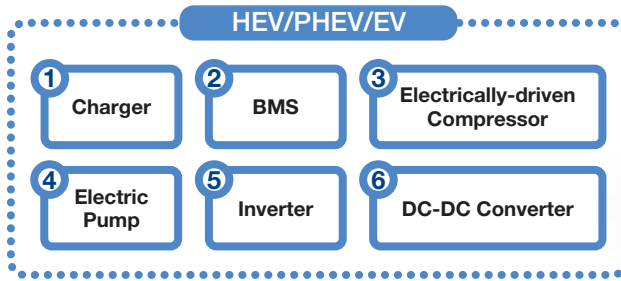
8 Fuel Injection System

Radial Lead Type
Monolithic Ceramic Capacitors
RPF Series



General Purpose (High Reliability)

Monolithic Ceramic Capacitors	GCM Series	Coupling/Decoupling		150°C	p11
Radial Lead Type Monolithic Ceramic Capacitors	RCE Series	Noise Suppression/Decoupling		125°C	p19
Radial Lead Type Monolithic Ceramic Capacitors	RH Series	Noise Suppression/Decoupling		150°C	p20
Chip Inductors (Chip Coils)	LQH32CH Series	Voltage Conversion		105°C	
Chip Inductors (Chip Coils)	LQG15HH Series	Impedance Matching/Choke		125°C	
Chip Ferrite Beads	BLM_SH Series	Noise Suppression		125°C	
3 Terminal Capacitors	NFM_H/NFE_H Series	Noise Suppression		125°C	
Chip Common Mode Choke Coils	DLW31SH/DLW43SH Series	Common Mode Noise Suppression		125°C	



1 Charger

Metal Terminal Type
Monolithic Ceramic Capacitors
KCM Series

p14

Monolithic Ceramic Capacitors
GCM/GCJ Series

p11

Safety Standard Certified
Ceramic Capacitors
Type KJ

p20

Ceramic Resonators CERALOCK®
CSTCE Series

p37

Crystal Units
XRCHA-F-A Series

p37

Large Current Common Mode Choke Coils
PLT10HH Series

p26

Thermistors
PRF/PTG Series

p63

2 BMS

DC-DC Converters

p67

Metal Terminal Type
Monolithic Ceramic Capacitors
KCM Series

p14

Monolithic Ceramic Capacitors
GCM/GCJ Series

p11

Monolithic Ceramic Capacitors
for Conductive Glue Mounting
GCG Series

p13

Ceramic Resonators CERALOCK®
CSTCE Series

p37

Crystal Units
XRCHA-F-A Series

p37

Thermistors
PRF/PTG Series

p63

3 Electrically-driven Compressor

Metal Terminal Type
Monolithic Ceramic Capacitors
KCM Series

p14

Monolithic Ceramic Capacitors
GCM/GCJ Series

p11

Monolithic Ceramic Capacitors
for Conductive Glue Mounting
GCG Series

p13

Thermistors
PRF/PTG Series

p63

4 Electric Pump

Metal Terminal Type
Monolithic Ceramic Capacitors
KCM Series

p14

Monolithic Ceramic Capacitors
GCM/GCJ Series

p11

Monolithic Ceramic Capacitors
for Conductive Glue Mounting
GCG Series

p13

Large Current Common Mode Choke Coils
PLT10HH Series

p26

Thermistors
PRF/PTG Series

p63

5 Inverter

Metal Terminal Type
Monolithic Ceramic Capacitors
KCM Series

p14

Monolithic Ceramic Capacitors
GCM/GCJ Series

p11

Monolithic Ceramic Capacitors
for Conductive Glue Mounting
GCG Series

p13

Radial Lead Type
Monolithic Ceramic Capacitors
RH Series

p20

Large Current
Common Mode Choke Coils
PLT10HH Series

p26

Thermistors
PRF/PTG Series

p63

6 DC-DC Converter

Metal Terminal Type
Monolithic Ceramic Capacitors
KCM Series

p14

Monolithic Ceramic Capacitors
GCM/GCJ Series

p11

Monolithic Ceramic Capacitors
for Conductive Glue Mounting
GCG Series

p13

Ceramic Resonators CERALOCK®
CSTCE/CSTCR Series

p37

Crystal Units
XRCHA-F-A Series

p37

Large Current Common Mode Choke Coils
PLT10HH Series

p26

Thermistors
PRF/PTG Series

p63

General Purpose (High Reliability)	Monolithic Ceramic Capacitors	GCM Series	Coupling/Decoupling		150°C	p11
	Radial Lead Type Monolithic Ceramic Capacitors	RCE Series	Noise Suppression/Decoupling		125°C	p19
	Radial Lead Type Monolithic Ceramic Capacitors	RH Series	Noise Suppression/Decoupling		150°C	p20
	Chip Inductors (Chip Coils)	LQH32CH Series	Voltage Conversion		105°C	
	Chip Inductors (Chip Coils)	LQG15HH Series	Impedance Matching/Choke		125°C	
	Chip Ferrite Beads	BLM_SH Series	Noise Suppression		125°C	
	3 Terminal Capacitors	NFM_H/NFE_H Series	Noise Suppression		125°C	
	Chip Common Mode Choke Coils	DLW31SH/DLW43SH Series	Common Mode Noise Suppression		125°C	



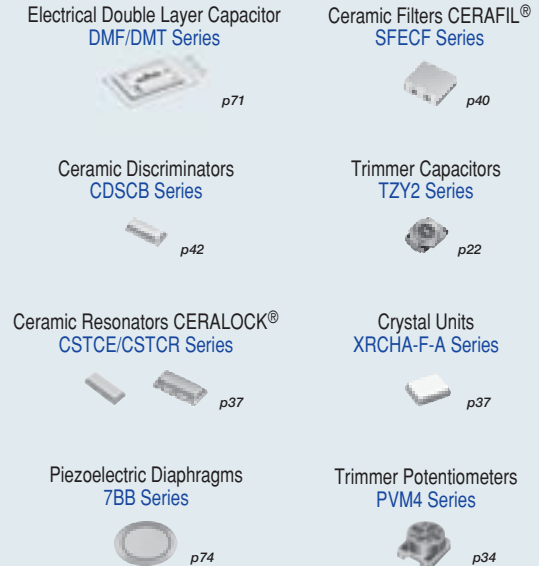
Information/Comfort/Accessory

- 1 Navigation/Infotainment
- 2 RKE
- 3 Meter/HUD
- 4 Power Seat/Power Mirror
- 5 Parking Assist

1 Navigation/Infotainment



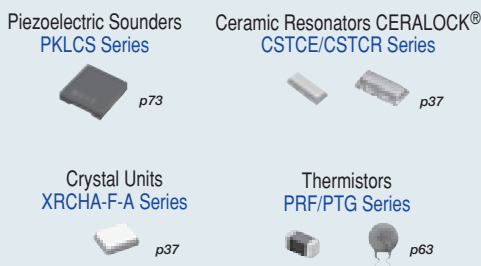
2 RKE



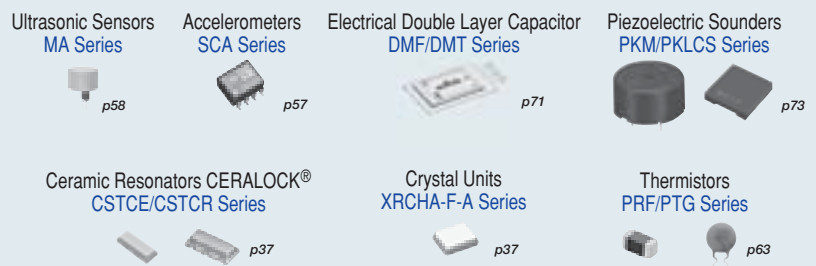
3 Meter/HUD



4 Power Seat/Power Mirror



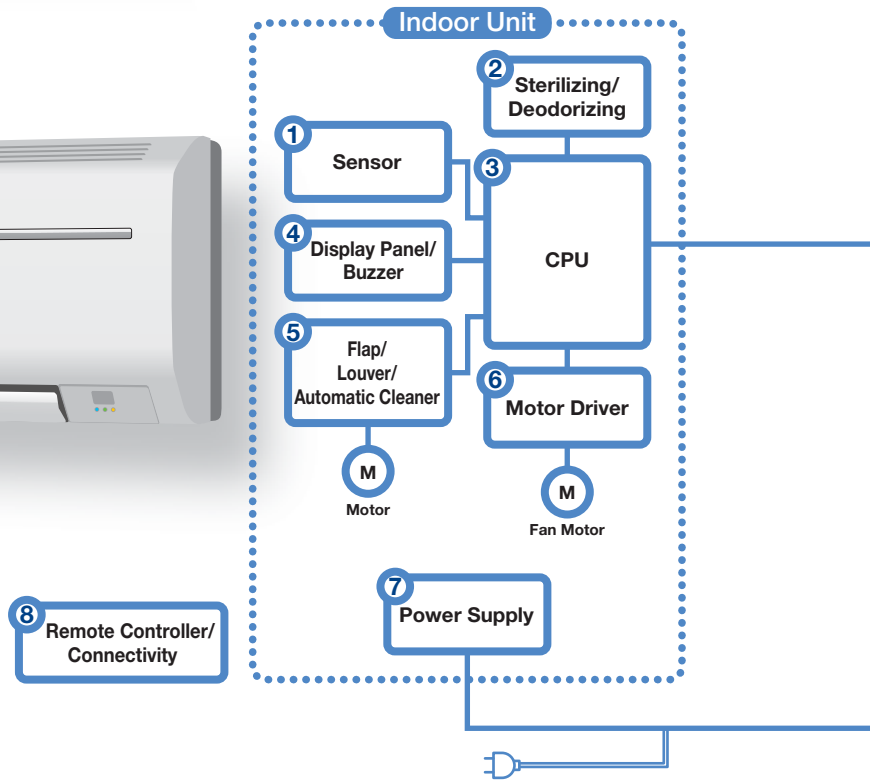
5 Parking Assist



General Purpose

Monolithic Ceramic Capacitors	GRM Series	Coupling/Decoupling		p3
Monolithic Ceramic Capacitors for Medium Voltage	GRM Series	For Snubber		p3
Radial Lead Type Monolithic Ceramic Capacitors	RCE Series	Noise Suppression/Decoupling		p19
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
EMI Suppression Filters EMIFIL®	NFM/NFA/NFL/NFE/NFW/NFR Series	Noise Suppression		p25
Chip Common Mode Choke Coils	DLW Series	Common Mode Noise Suppression		p26
Ferrite Cores	FS Series	Noise Suppression		p28

Air Conditioner



1 Sensor

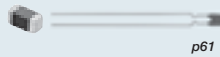
Pyroelectric Infrared Sensors
IRA Series



Ultrasonic Sensors
MA Series

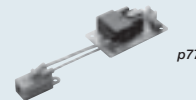


Thermistors
NCP/NXR/PRF Series



2 Sterilizing/Deodorizing

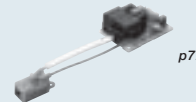
Ionizer Modules Ionissimo®
MHM300 Series



High Voltage Power
MPH4602 Series



Ozonizer Modules Ionissimo®
MHM500 Series



High Voltage Resistors
MHR Series



3 CPU

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series



4 Display Panel/Buzzer

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series



Piezoelectric Sounders
PKM/PKLC Series



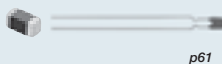
5 Flap/Louver/Automatic Cleaner

Rotary Position Sensors
SV Series



6 Motor Driver

Thermistors
NCP/NXR/PRF Series



7 Power Supply

Monolithic Ceramic Capacitors
for Medium Voltage
GR/GA Series



Medium High Voltage Ceramic Capacitors
DEA/DES Series



Safety Standard
Certified Ceramic Capacitors
Type KX/KY

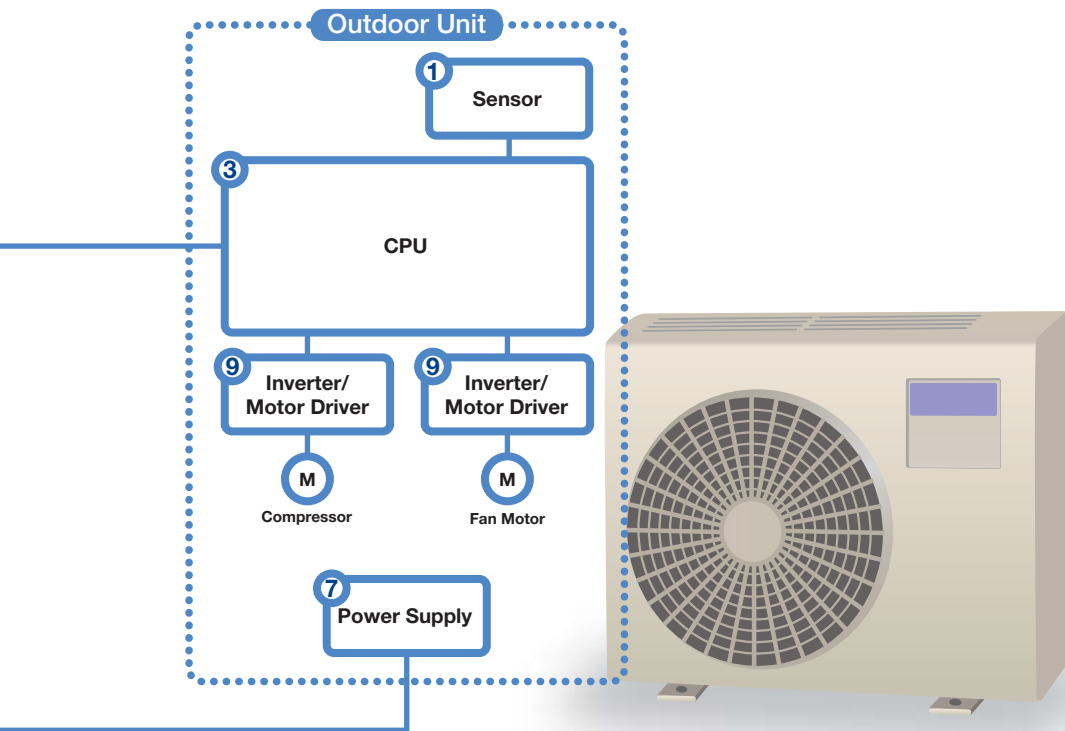


Trimmer Potentiometers
PVG3 Series



Thermistors
NTP/PTG Series





8 Remote Controller/Connectivity

Bluetooth® Modules



p76

Wi-Fi Modules



p76

Sub-GHz Modules



Coaxial Connectors



p52

Micro DC-DC Converters
LXDC Series



p69

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series



p37

Chip Inductors (Chip Coils)
LQB Series



p31

9 Inverter/Motor Driver

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series



p37

Trimmer Potentiometers
PVG3 Series



p34

Thermistors
NCP/NXR/PRF Series



p61

General Purpose

Monolithic Ceramic Capacitors	GRM/GJM Series	Coupling/Decoupling/For Snubber		p3
Monolithic Ceramic Capacitors for Medium Voltage	GR/GA Series	Coupling/Decoupling		p3
Polymer Aluminum Electrolytic Capacitors	ECAS Series	Smoothing/Transient Backup		p21
Radial Lead Type Monolithic Ceramic Capacitors	RDE Series	Coupling/Decoupling		p15
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
3 Terminal Capacitors	NFM/NFE Series	Noise Suppression		p25
Chip Common Mode Choke Coils	DLW/DLP Series	Noise Suppression		p26
Ferrite Cores	FS Series	Noise Suppression		p28

Application Guides

Refrigerator

1 Sensor

Pyroelectric Infrared Sensors
IRA Series

p58

Thermistors
NCP/NXR/PRF Series

p61

2 Sterilizing/Deodorizing

Ionizer Modules Ionissimo®
MHM300 Series

p77

Ozonizer Modules Ionissimo®
MHM500 Series

p77

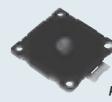
High Voltage Power
MPH4602 Series

p70

High Voltage Resistors
MHR Series

p35

Microblowers



p75

5 Display Panel/Buzzer

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series

p37

Piezoelectric Sounders
PKM/PKLC Series

p73

6 Connectivity

Bluetooth® Modules



p76

Wi-Fi Modules



p76

Sub-GHz Modules



p76

Coaxial Connectors



p52

Micro DC-DC Converters
LXDC Series

p69

Chip Inductors
(Chip Coils)
LQB Series

p31

8 Power Supply

Monolithic Ceramic Capacitors
for Medium Voltage
GR/GA Series

p3

Medium High Voltage Ceramic Capacitors
DEA/DES Series

p17

Safety Standard Certified Ceramic Capacitors
Type KX/KY

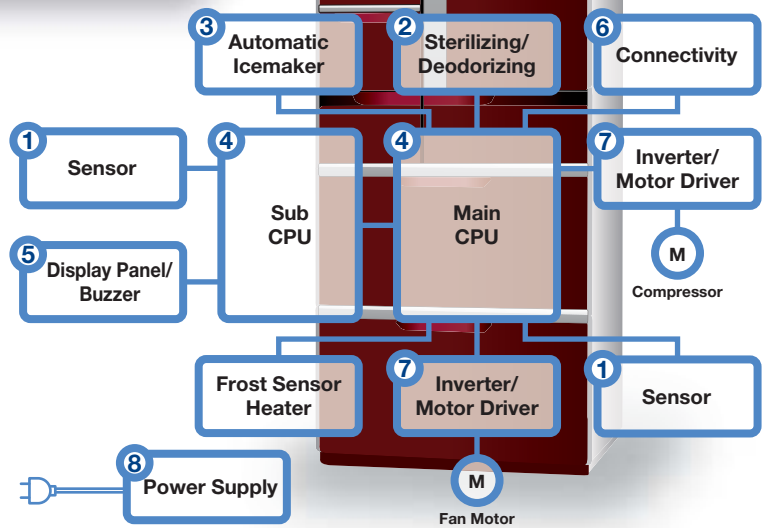
p18

Trimmer Potentiometers
PVG3 Series

p34

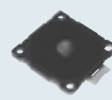
Thermistors
NTP/PTG Series

p62



3 Automatic Icemaker

Microblowers



p75

4 CPU

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series

p37

7 Inverter/Motor Driver

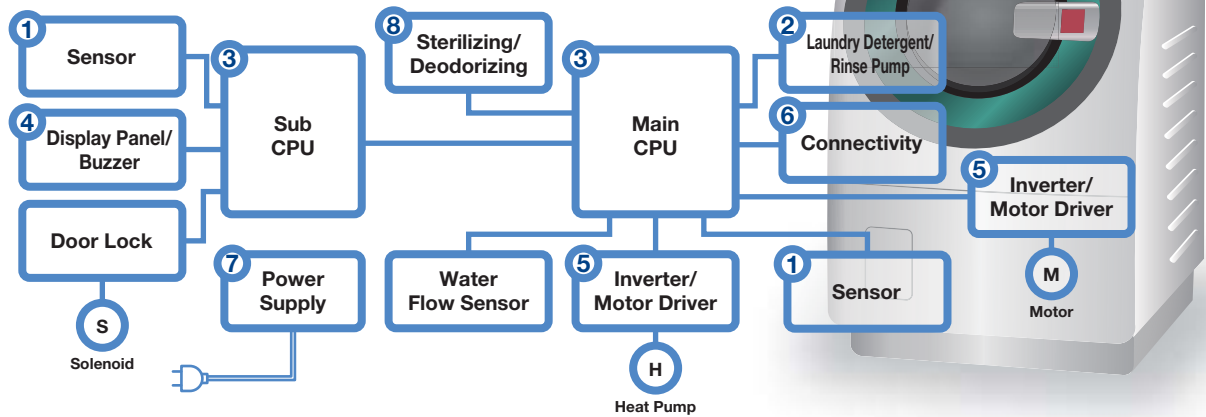
Thermistors
NCP/NXR/PRF Series

p61

General Purpose

Monolithic Ceramic Capacitors	GRM/GJM Series	Coupling/Decoupling/For Snubber		p3
Monolithic Ceramic Capacitors for Medium Voltage	GR/GA Series	Coupling/Decoupling		p3
Polymer Aluminum Electrolytic Capacitors	ECAS Series	Smoothing/Transient Backup		p21
Radial Lead Type Monolithic Ceramic Capacitors	RDE Series	Coupling/Decoupling		p15
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
3 Terminal Capacitors	NFM/NFE Series	Noise Suppression		p25
Chip Common Mode Choke Coils	DLW/DLP Series	Noise Suppression		p26
Ferrite Cores	FS Series	Noise Suppression		p28

Washing Machine



1 Sensor
 Thermistors
 NCP/NXR/PRF Series
 p61

2 Laundry Detergent/Rinse Pump
 Microblowers
 p75

3 CPU
 Ceramic Resonators CERALOCK®
 CSTLS/CSTCE/CSTCR Series
 p37

5 Inverter/Motor Driver
 Trimmer Potentiometers
 PVG3 Series
 p34
 Thermistors
 NCP/NXR/PRF Series
 p61

4 Display Panel/Buzzer
 Rotary Position Sensors
 SV Series
 p57
 Ceramic Resonators CERALOCK®
 CSTLS/CSTCE/CSTCR Series
 p37
 Piezoelectric Sounders
 PKM Series
 p73

6 Connectivity
 Bluetooth® Modules
 p76
 Wi-Fi Modules
 p76
 Sub-GHz Modules

 Coaxial Connectors
 p52
 Micro DC-DC Converters
 LXDC Series
 p69
 Chip Inductors (Chip Coils)
 LQB Series
 p31

7 Power Supply
 Monolithic Ceramic Capacitors for Medium Voltage
 GR/GA Series
 p3
 Medium High Voltage Ceramic Capacitors
 DEA/DES Series
 p17
 Safety Standard Certified Ceramic Capacitors
 Type KX/KY
 p18
 Trimmer Potentiometers
 PVG3 Series
 p34
 Thermistors
 NTP/PTG Series
 p62

8 Sterilizing/Deodorizing
 Ozonizer Modules Ionissimo®
 MHM500 Series
 p77
 High Voltage Power
 MPH4602 Series
 p70

Monolithic Ceramic Capacitors	GRM/GJM Series	Coupling/Decoupling/For Snubber	p3
Monolithic Ceramic Capacitors for Medium Voltage	GR/GA Series	Coupling/Decoupling	p3
Polymer Aluminum Electrolytic Capacitors	ECAS Series	Smoothing/Transient Backup	p21
Radial Lead Type Monolithic Ceramic Capacitors	RDE Series	Coupling/Decoupling	p15
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion	p30
Chip Ferrite Beads	BLM Series	Noise Suppression	p24
3 Terminal Capacitors	NFM/NFE Series	Noise Suppression	p25
Chip Common Mode Choke Coils	DLW/DLP Series	Noise Suppression	p26
Ferrite Cores	FS Series	Noise Suppression	p28

Application Guides

Air Purifier

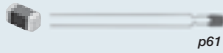
1 Sensor

Pyroelectric
Infrared Sensors
IRA Series

p58

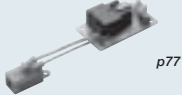
Ultrasonic Sensors
MA Series

p58

Thermistors
NCP/NXR/PRF Series

p61

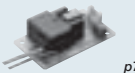
2 Sterilizing/Deodorizing

Ionizer Modules Ionissimo®
MHM300 Series

p77

Ozonizer Modules Ionissimo®
MHM500 Series

p77

High Voltage Power
MPH4602 Series

p70

High Voltage Resistors
MHR Series

p35

4 Display Panel/Buzzer

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series

p37

Piezoelectric Sounders
PKM/PKLC Series

p73

5 Flap/Louver

Rotary Position Sensors
SV Series

p57

6 Water Pump

Microblowers

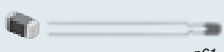


p75

8 Inverter/Motor Driver

Trimmer Potentiometers
PVG3 Series

p34

Thermistors
NCP/NXR/PRF Series

p61

9 Power Supply

Monolithic Ceramic Capacitors
for Medium Voltage
GR/GA Series

p3

Trimmer Potentiometers
PVG3 Series

p34

Medium High Voltage
Ceramic Capacitors
DEA/DES Series

p17

AC Line Filters
PLA/PLY Series

p28

Safety Standard Certified
Ceramic Capacitors
Type KX/KY

p18

Thermistors
NTP/PTG Series

p62

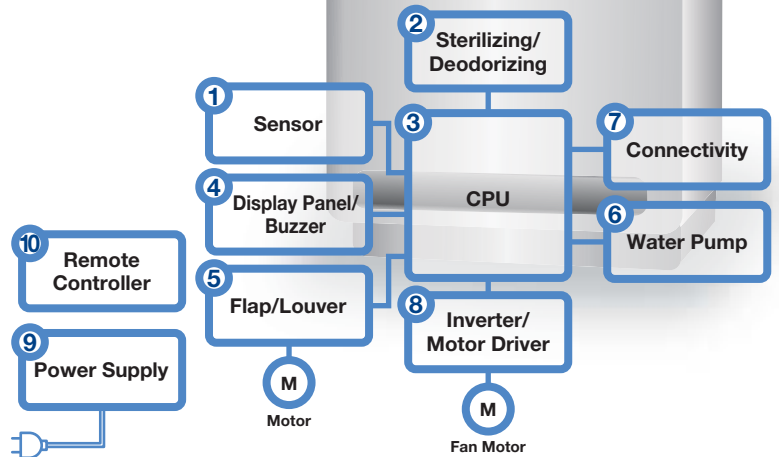
10 Remote Controller

Micro DC-DC Converters
LXDC Series

p69

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series

p37



3 CPU

Micro DC-DC Converters
LXDC Series

p69

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series

p37

7 Connectivity

Bluetooth® Modules



p76

Wi-Fi Modules



p76

Sub-GHz Modules



Coaxial Connectors



p52

Micro DC-DC Converters
LXDC Series

p69

Chip Inductors (Chip Coils)
LQB Series

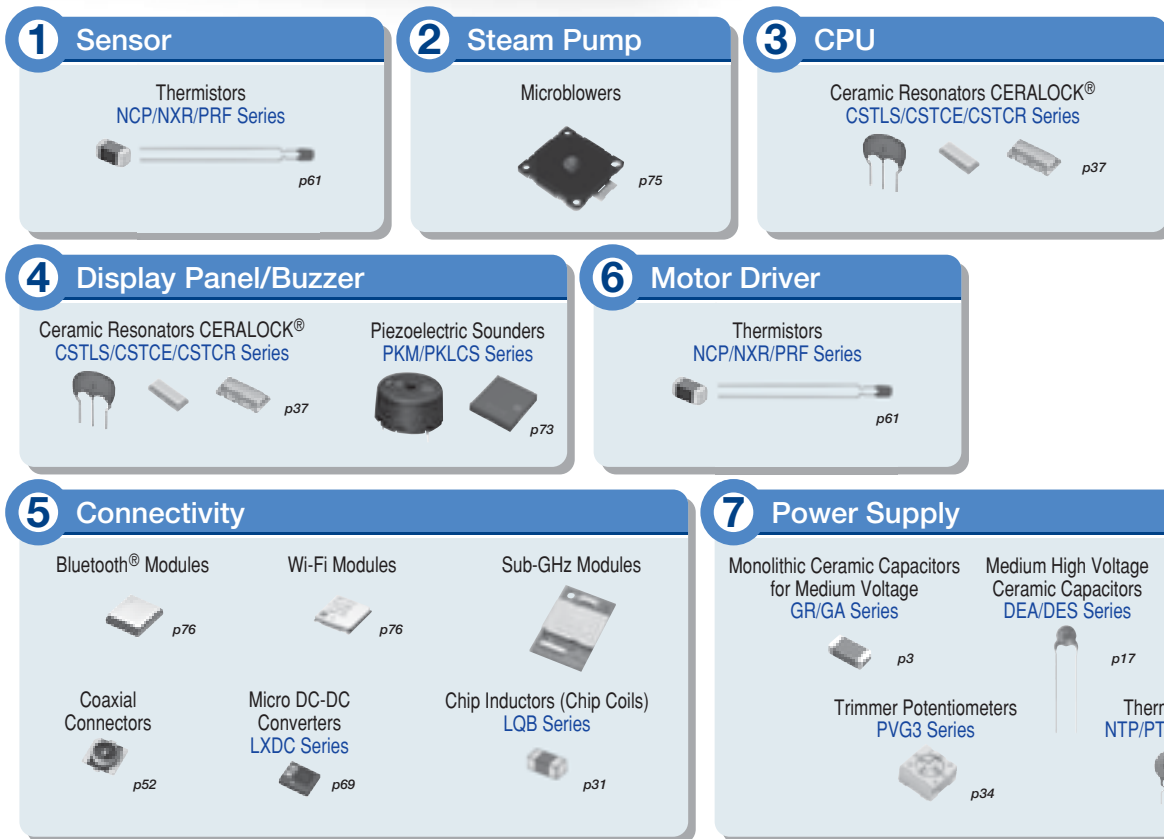
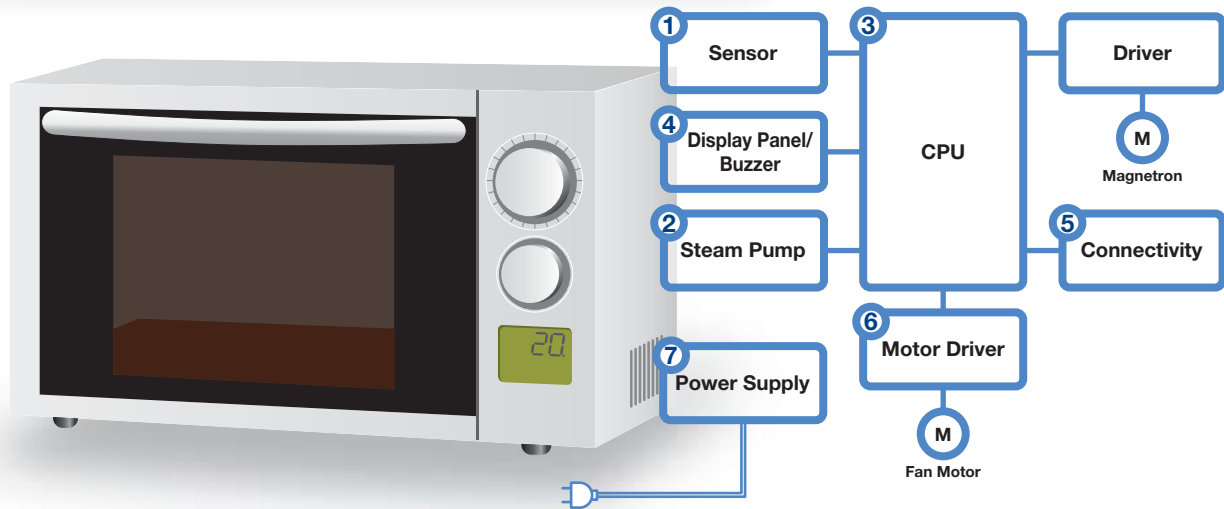
p31

General Purpose

Monolithic Ceramic Capacitors	GRM/GJM Series	Coupling/Decoupling/For Snubber		p3
Monolithic Ceramic Capacitors for Medium Voltage	GR/GA Series	Coupling/Decoupling		p3
Polymer Aluminum Electrolytic Capacitors	ECAS Series	Smoothing/Transient Backup		p21
Radial Lead Type Monolithic Ceramic Capacitors	RDE Series	Coupling/Decoupling		p15
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
3 Terminal Capacitors	NFM/NFE Series	Noise Suppression		p25
Chip Common Mode Choke Coils	DLW/DLP Series	Noise Suppression		p26
Ferrite Cores	FS Series	Noise Suppression		p28

Application Guides

Microwave Oven

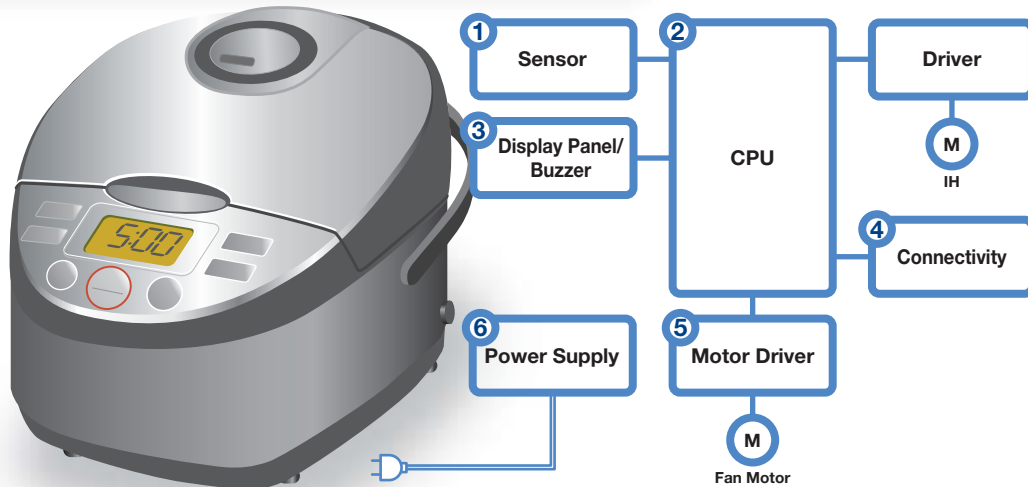


General Purpose

Monolithic Ceramic Capacitors	GRM/GJM Series	Coupling/Decoupling/For Snubber	p3
Monolithic Ceramic Capacitors for Medium Voltage	GR/GA Series	Coupling/Decoupling	p3
Polymer Aluminum Electrolytic Capacitors	ECAS Series	Smoothing/Transient Backup	p21
Radial Lead Type Monolithic Ceramic Capacitors	RDE Series	Coupling/Decoupling	p15
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion	p30
Chip Ferrite Beads	BLM Series	Noise Suppression	p24
3 Terminal Capacitors	NFM/NFE Series	Noise Suppression	p25
Chip Common Mode Choke Coils	DLW/DLP Series	Noise Suppression	p26
Ferrite Cores	FS Series	Noise Suppression	p28

Application Guides

IH Rice Cooker



1 Sensor

Thermistors
NCP/NXR/PRF Series

2 CPU

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series

3 Display Panel/Buzzer

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR SeriesPiezoelectric Sounders
PKM/PKLS Series

4 Connectivity

Bluetooth® Modules



Wi-Fi Modules



Sub-GHz Modules



Coaxial Connectors

Micro DC-DC Converters
LXDC SeriesChip Inductors (Chip Coils)
LQB Series

5 Motor Driver

Thermistors
NCP/NXR/PRF Series

6 Power Supply

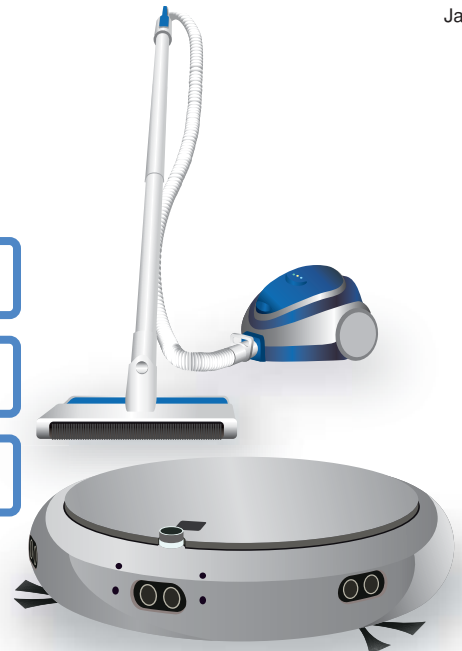
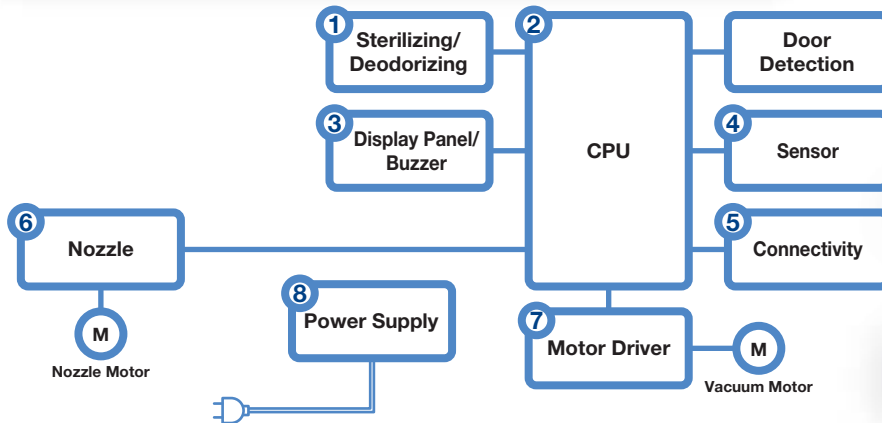
Monolithic Ceramic Capacitors
for Medium Voltage
GR/GA SeriesMedium High Voltage Ceramic Capacitors
DEA/DES SeriesSafety Standard Certified
Ceramic Capacitors
Type KX/KYTrimmer Potentiometers
PVG3 SeriesThermistors
NTP/PTG Series

General Purpose

Monolithic Ceramic Capacitors	GRM/GJM Series	Coupling/Decoupling/For Snubber		p3
Monolithic Ceramic Capacitors for Medium Voltage	GR/GA Series	Coupling/Decoupling		p3
Polymer Aluminum Electrolytic Capacitors	ECAS Series	Smoothing/Transient Backup		p21
Radial Lead Type Monolithic Ceramic Capacitors	RDE Series	Coupling/Decoupling		p15
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
3 Terminal Capacitors	NFM/NFE Series	Noise Suppression		p25
Chip Common Mode Choke Coils	DLW/DLP Series	Noise Suppression		p26
Ferrite Cores	FS Series	Noise Suppression		p28

Application Guides

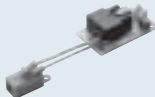
Vacuum Cleaner



1 Sterilizing/Deodorizing

Ionizer Modules Ionissimo®
MHM300 Series

High Voltage Resistors
MHR Series

 p77

 p35

2 CPU

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series

 p37

3 Display Panel/Buzzer

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series

Piezoelectric Sounders
PKM/PKLC Series

 p37

 p73

4 Sensor

Ultrasonic Sensors
MA Series

Thermistors
NCP Series

 p58

 p61

5 Connectivity

Bluetooth® Modules

Wi-Fi Modules

Sub-GHz Modules

Coaxial Connectors

Micro DC-DC Converters
LXDC Series

Chip Inductors (Chip Coils)
LQB Series

 p76

 p76

 p31

 p52

 p69

6 Nozzle

Thermistors
PTG Series

 p64

7 Motor Driver

Thermistors
NCP/NXR/PRF Series

 p61

8 Power Supply

Monolithic Ceramic Capacitors
for Medium Voltage
GR/GA Series

Medium High Voltage Ceramic Capacitors
DEA/DES Series

Safety Standard Certified
Ceramic Capacitors
Type KX/KY

Trimmer Potentiometers
PVG3 Series

Thermistors
NTP/PTG Series

 p3

 p17

 p18

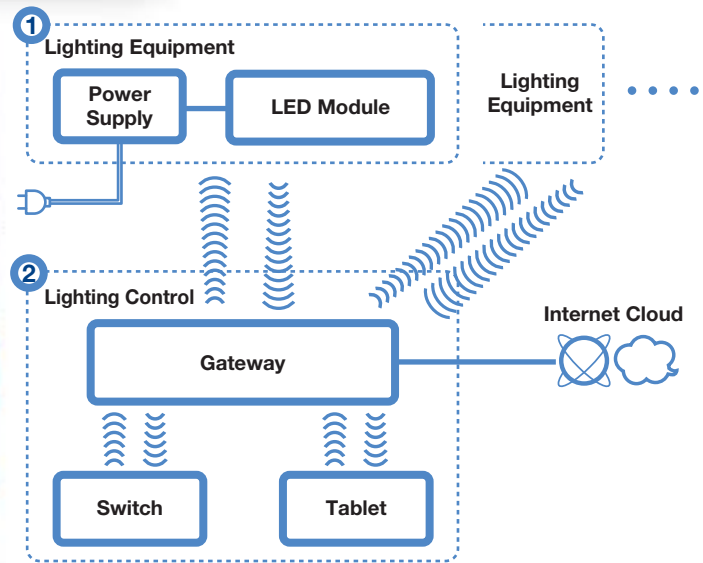
 p34

 p62

General Purpose

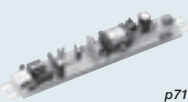
Monolithic Ceramic Capacitors	GRM/GJM Series	Coupling/Decoupling/For Snubber	 p3
Monolithic Ceramic Capacitors for Medium Voltage	GR/GA Series	Coupling/Decoupling	 p3
Polymer Aluminum Electrolytic Capacitors	ECAS Series	Smoothing/Transient Backup	 p21
Radial Lead Type Monolithic Ceramic Capacitors	RDE Series	Coupling/Decoupling	 p15
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion	 p30
Chip Ferrite Beads	BLM Series	Noise Suppression	 p24
3 Terminal Capacitors	NFM/NFE Series	Noise Suppression	 p25
Chip Common Mode Choke Coils	DLW/DLP Series	Noise Suppression	 p26
Ferrite Cores	FS Series	Noise Suppression	 p28

Lighting Control System



1 Lighting Equipment

Ballast for LED Lighting



p71

Monolithic Ceramic Capacitors
for Medium Voltage
GR/GA Series



p3

Medium High Voltage
Ceramic Capacitors
DEA/DES Series



p17

Safety Standard Certified
Ceramic Capacitors
Type KX/KY



p18

Wi-Fi Modules



p76

Sub-GHz Modules



Thermistors
NCP/NTP/PRF/PRG/PTG Series



p61

AC Line Filters
PLA/PLH/PLY Series



p28

2 Lighting Control

ZigBee® Gateway



Wi-Fi Modules



p76

Sub-GHz Modules



Pyroelectric Infrared Sensors
IRS Series



p58

Ceramic Resonators CERALOCK®
CSTLS/CSTCE/CSTCR Series

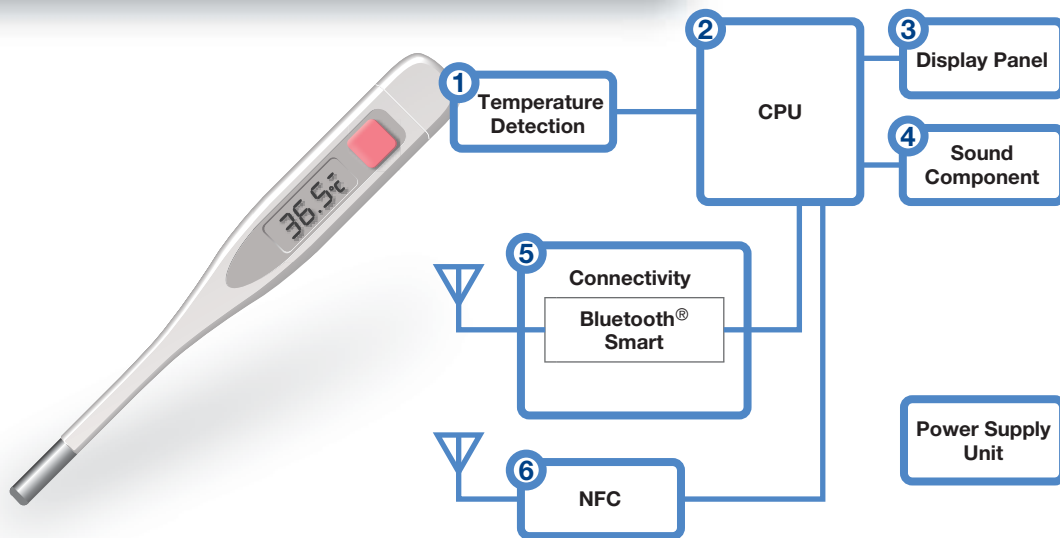


p37

General Purpose

Monolithic Ceramic Capacitors	GRM/GJM Series	Coupling/Decoupling/For Snubber		p3
Monolithic Ceramic Capacitors for Medium Voltage	GR/GA Series	Coupling/Decoupling		p3
Radial Lead Type Monolithic Ceramic Capacitors	RDE Series	Coupling/Decoupling		p15
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
3 Terminal Capacitors	NFM/NFE Series	Noise Suppression		p25
Chip Common Mode Choke Coils	DLW/DLP Series	Noise Suppression		p26

Thermometer



1 Temperature Detection

Thermistors
NXR Series



p62

2 CPU

Ceramic Resonators CERALOCK®
CSTCR/CSTCE Series



p37

3 Display Panel

Trimmer Potentiometers
PV2 Series



p34

Thermistors
NCP Series



p61

4 Sound Component

Piezoelectric Sounders
PKLCS Series



p73

Piezoelectric Diaphragms
7BB Series



p74

5 Connectivity

Bluetooth® Smart Modules
LBCA/LBMA Series



6 NFC

NFC Antennas
FLAN Series



Micro DC-DC Converters
LXDC Series



p69

Crystal Units
XRCGB Series



p37

Chip Ferrite Beads
BLM Series



p24

Chip Inductors (Chip Coils)
LQM/LQH/QB Series



p30

Trimmer Capacitors
TZY2 Series



p22

ESD Protection Device
LXES Series



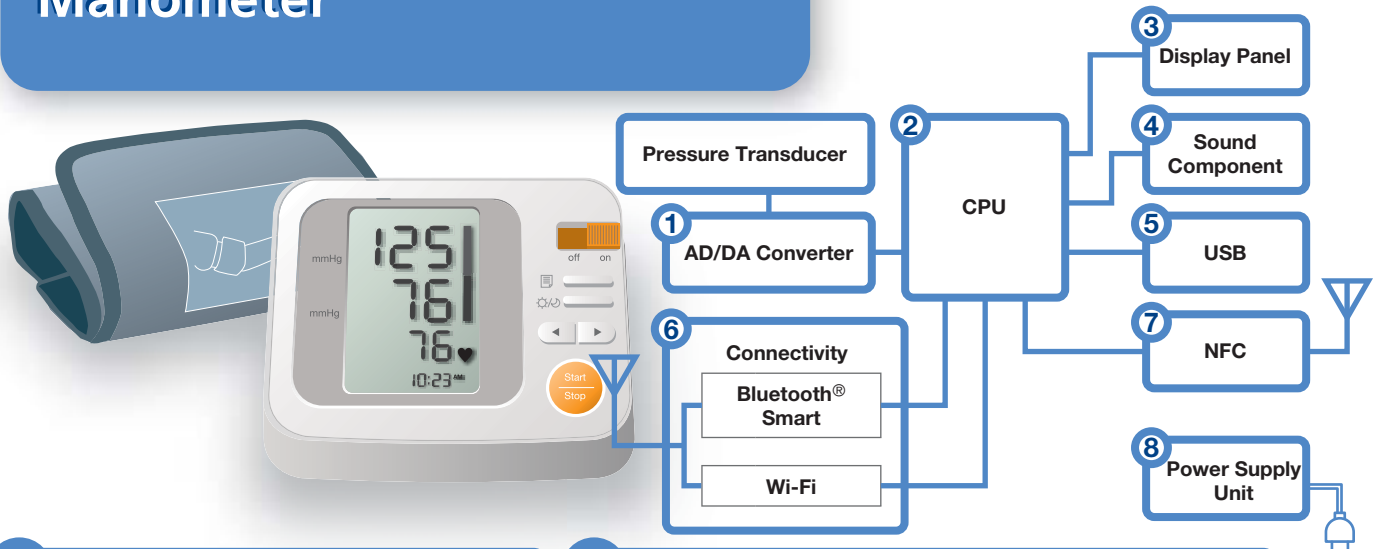
p27

General Purpose

Monolithic Ceramic Capacitors	GRM Series	Coupling/Decoupling/For Step-up		p3
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance		p30
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
3 Terminal Capacitors	NFM Series	Noise Suppression		p25

Application Guides

Manometer



1 AD/DA Converter

Chip Ferrite Beads
BLM Series



p24

Thermistors
NCP Series



p61

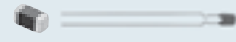
2 CPU

Ceramic Resonators CERALOCK®
CSTCR/CSTCE Series



p37

Thermistors
NCP/NXR Series



p61

3 Display Panel

3 Terminal Capacitors
NFM Series



p25

Chip Ferrite Beads
BLM Series



p24

Trimmer Potentiometers
PVZ2 Series



p34

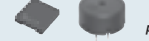
Thermistors
NCP Series



p61

4 Sound Component

Piezoelectric Sounders
PKLCS/PKM Series



p73

5 USB

Micro DC-DC Converters
LXDC Series



p69

ESD Protection Device
LXES Series



p27

Thermistors
PRG Series



p64

6 Connectivity

ESD Protection Device
LXES Series



p27

Micro DC-DC Converters
LXDC Series



p69

Ceramic Resonators CERALOCK®
CSTCR-G-L/CSTCE-G-L/CSTCE-V-L/CSTCW-X Series



p38

Bluetooth® Smart Modules
LBCA/LBMA Series



p37

Crystal Units
XRCGB Series



p37

Wi-Fi Modules



p76

Thermistors
PRG Series



p64

7 NFC

NFC Antennas
FLAN Series



Micro DC-DC Converters
LXDC Series



p69

Crystal Units
XRCGB Series



p37

Chip Ferrite Beads
BLM Series



p24

Chip Inductors (Chip Coils)
LQM/LQH Series



p30

Trimmer Capacitors
TZY2 Series



p22

ESD Protection Device
LXES Series



p27

8 Power Supply Unit

Thermistors
NCP Series



p61

Thermistors
PRF/PRG Series

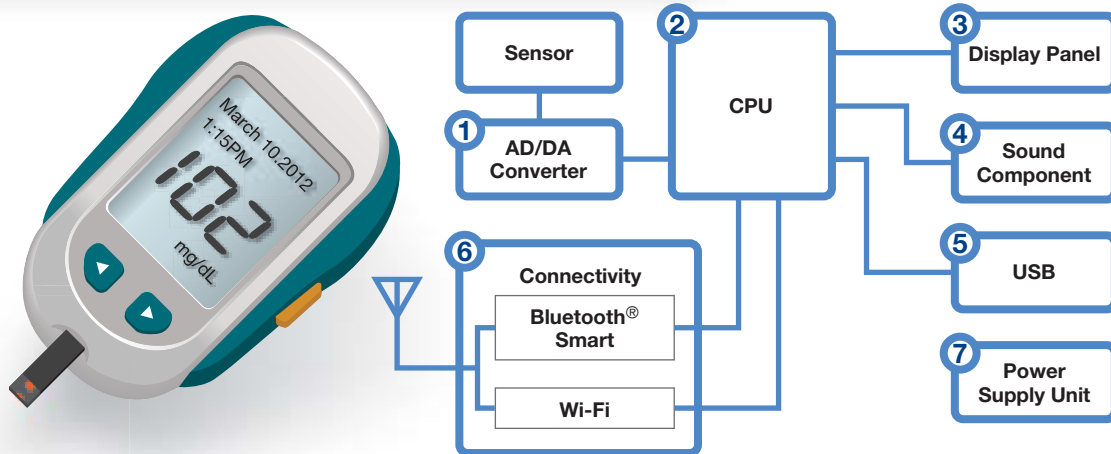


p63

General Purpose

Monolithic Ceramic Capacitors	GRM Series	High Frequency Filter Circuit		p3
Monolithic Ceramic Capacitors	GRM Series	Coupling/Decoupling/For Step-up		p3
Chip Inductors (Chip Coils)	LQM/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance		p30
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
3 Terminal Capacitors	NFM Series	Noise Suppression		p25

Blood Glucose Meter



1 AD/DA Converter

Chip Ferrite Beads
BLM Series



p24

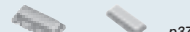
Thermistors
NCP Series



p61

2 CPU

Ceramic Resonators CERALOCK®
CSTCR/CSTCE Series



p37

Thermistors
NCP/NXR Series



p61

3 Display Panel

3 Terminal Capacitors
NFM Series



p25

Chip Ferrite Beads
BLM Series



p24

Trimmer Potentiometers
PV22 Series



p34

Thermistors
NCP Series



p61

4 Sound Component

Piezoelectric Sounders
PKLCS Series



p73

Piezoelectric Diaphragms
7BB Series



p74

5 USB

Thermistors
PRG Series



p64

6 Connectivity

Bluetooth® Smart Modules
LBCA/LBMA Series



Wi-Fi Modules



p76

Ceramic Resonators CERALOCK®
CSTCR-G-L/CSTCE-G-L/CSTCE-V-L/CSTCW-X Series



p38

Crystal Units
XRCGB Series



p37

Thermistors
PRG Series



p64

7 Power Supply Unit

Thermistors
NCP Series



p61

Thermistors
PRF/PRG Series



p63

General Purpose

Monolithic Ceramic Capacitors	GRM Series	High Frequency Filter Circuit		p3
Monolithic Ceramic Capacitors	GRM Series	Coupling/Decoupling/For Step-up		p3
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance		p30
Chip Inductors (Chip Coils)	LQM/LQH Series	Voltage Conversion		p30
Chip Ferrite Beads	BLM Series	Noise Suppression		p24
3 Terminal Capacitors	NFM Series	Noise Suppression		p25

Website

<http://www.murata.com/products/>

For detailed information regarding products, please visit the "Products" page on the Murata website. The "Products" page is full of valuable information.

Using the keyword search function, you can search every page of the Murata website.

Murata's RoHS compliance is clarified.

Please make any inquiries using the "Contact Us" form.

It contains information updates regarding both new product news and new product content.

You can search for product information using various search functions. In particular, the capacitor search function is covered extensively.

The product information listed on the website is organized into different product categories. The wealth of information ranges in complexity from basic product knowledge through technical information.

You can find Murata's products and technologies by choosing the application (mobile phones, PCs, televisions, automotive, white goods, RF).

The website offers a wide variety of information, covering different technologies, such as PDF catalogs, design tools, product information etc.

This is the latest tool to get the electrical characteristics for Capacitors, Inductors, and EMI Suppression Filters, and to simulate Thermistors' behavior !



■ Characteristics viewer

You can easily search and download the following data for Monolithic Ceramic Capacitors, Polymer Capacitors, EMI Suppression Filters (Three-terminal Capacitors, Ferrite Beads) and Power/RF Inductors.

■ Components performance simulator

You can search by the simulation on simple circuits for Thermistors.

■ Components selection tool

You can select Medium voltage Capacitors and Power Inductors according to conditions of use.

* Medium voltage: Rated Voltage 250V and over

■ Usage example of "Chip Monolithic Ceramic Capacitors"

1 Select the products

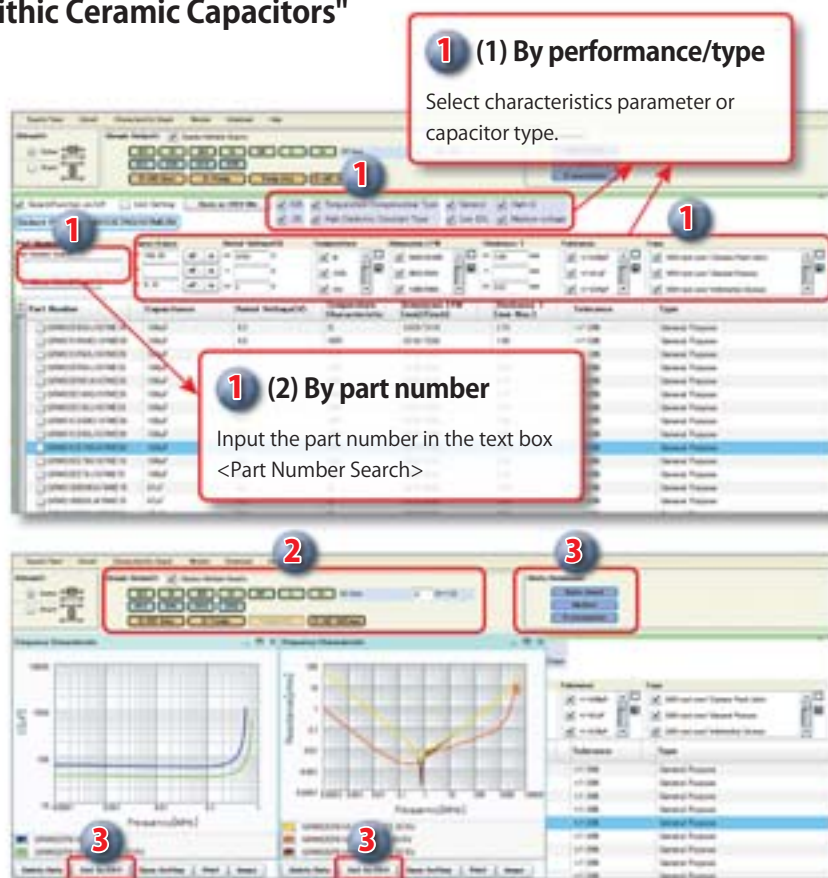
- (1) By performance/type
- (2) By part number

2 Show graph

Click each button in the <Graph Output> area.

3 Data download

Click each button in the <Data Download> area.



These images were captured in November of 2013. Be assured that this software will be updated frequently.

A	
AWG	Low Temperature Co-fired Ceramics (LTCC) Multi-layer Module Boards — 76
B	
BLA	Noise Suppression Filters (Chip Ferrite Bead) — 24
BLM	Noise Suppression Filters (Chip Ferrite Bead) — 24
BLO	Noise Suppression Filters (Lead Type) — 28
BN	Noise Suppression Filters (Block Type) — 27
BS	Magnetic Pattern Recognition Sensors — 57
C	
CD	Ceramic Discriminators — 42, 47
CE	Isolators — 49
CF	Ceramic Filters CERAFIL® — 41, 46
CL	Single Layer Microchip Capacitors — 53
CS	Ceramic Resonators CERALOCK® — 37
D	
DE	Lead Type Ceramic Capacitors — 17, 20
DF	Dielectric Filters GIGAFIL® — 45
DHK	High Voltage Ceramic Capacitors — 21
DHR	Lead Type Ceramic Capacitors — 19
DHS	High Voltage Ceramic Capacitors — 21
DL	Noise Suppression Filters (Chip Common Mode Choke Coil) — 26
DM	Electrical Double Layer Capacitors — 71
DS	Noise Suppression Filters (Lead Type) — 28
DXP	Baluns — 50
DXP	Couplers — 51
DXW	Baluns — 50
E	
EA	Microwave Absorbers — 28
ECAS	Polymer Aluminum Electrolytic Capacitors — 21
F	
FR	Rotary Sensors — 58
FS	Ferrite Core — 28
G	
GA	Chip Monolithic Ceramic Capacitors — 9
GC	Chip Monolithic Ceramic Capacitors — 11
GJ	Chip Monolithic Ceramic Capacitors — 6
GM	Chip Monolithic Ceramic Capacitors — 7
GQ	Chip Monolithic Ceramic Capacitors — 7
GR	Chip Monolithic Ceramic Capacitors — 3, 8
I	
IR	Pyroelectric Infrared Sensors — 58
K	
KC	Chip Monolithic Ceramic Capacitors — 14
KR	Chip Monolithic Ceramic Capacitors — 10
L	
LDB	Baluns — 50
LDC	Couplers — 50
LDD	Chip Multilayer Hybrid Dividers — 51
LDM	Baluns — 50
LFB	Chip Multilayer LC Filters — 45
LFC	Low Temperature Co-fired Ceramics (LTCC) Multi-layer Module Boards — 76
LFD	Chip Multilayer Diplexers — 51
LFL	Chip Multilayer LC Filters — 45
LL	Chip Monolithic Ceramic Capacitors — 5
LQ	Inductors (Coils) — 30
LXDC	Micro DC-DC Converters — 69
LXES	ESD Protection Devices — 27
LXMS	MAGICSTRAP® — 78
LXWS	Wireless Power Transmission Modules — 79
LXRW	
Variable Capacitor — 77	
M	
MA	Ultrasonic Sensors — 58
MHM	Ionizer Modules Ionissimo® — 77
MHR	High Voltage Resistors — 35
MM	High Frequency Coaxial Connectors (Receptacle) — 52
MPD	DC-DC Converters — 67
MPH	High Voltage Power Supplies — 70
MPL	High Voltage Power Supplies — 70
MR	Magnetic Switches (AMR Sensors) — 57
MSH	High Voltage Transformers — 69
MX	High Frequency Coaxial Connectors (Cable) — 52
MY	DC-DC Converters — 67
MZ	Microblowers — 75
N	
NC	NTC Thermistors — 57, 61
NF	Noise Suppression Filters (Chip 3 Terminal Capacitor), (Chip LC/RC Filter) — 25
NT	NTC Thermistors — 62
NX	NTC Thermistors — 57, 61
O	
OK	DC-DC Converters — 67
P	
PAL	Piezoelectric Actuators — 75
PKG	Shock Sensors — 58
PKB	Piezoelectric Buzzers — 73
PKL	Piezoelectric Sounders — 73
PKM	Piezoelectric Sounders — 73
PLA	AC Line Filters — 28
PLH	AC Line Filters — 28
PLT	Noise Suppression Filters (Chip Common Mode Choke Coil) — 26, 28
PLY	AC Line Filters — 28
PR	PTC Thermistors POSISTOR® — 57, 63, 64
PT	PTC Thermistors POSISTOR® — 57, 63, 64, 65
PV	Trimmer Potentiometers — 34
R	
RC	Lead Type Ceramic Capacitors — 19
RD	Lead Type Ceramic Capacitors — 15
RH	Lead Type Ceramic Capacitors — 20
RU	Thin Film Circuit Substrate RUSUB® — 55
S	
SAE	SAW Traps — 42
SAF	SAW Filters for Mobile Communications — 44
SAW	SAW Filters for Mobile Communications — 44
SAY	SAW Filters for Mobile Communications — 44
SCA	Accelerometers — 57
SCA	Inclinometers — 58
SCC	Angular Rate Sensors — 57
SF	Ceramic Filters CERAFIL® — 40, 46
SV	Rotary Position Sensors — 57
T	
TP	Ceramic Traps — 42
TZ	Trimmer Capacitors — 22
V	
VF	EMIGUARD® — 28
X	
XR	Crystal Units — 37
7B	Piezoelectric Diaphragms — 74

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