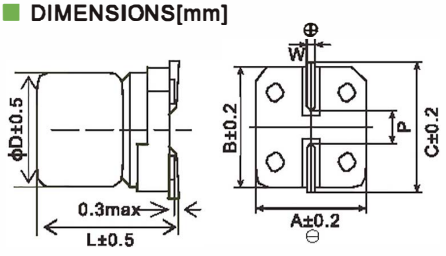
MK series

- Endurance: +105°C 2,000 ~ 3,000 hours
- Designed for surface mounting on high density PC board
- **RoHS Compliant**

SPECIFICATIONS

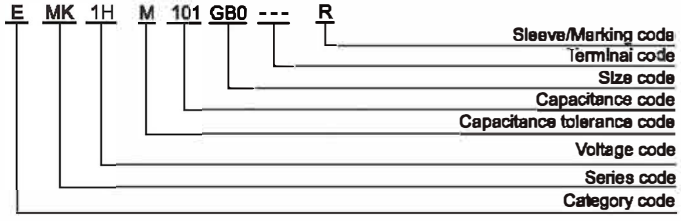
Items	Characteristics											
Category Temperature Range	-40~+105°C(6.3 ~450 Vdc)											
Rated Voltage Range	6.3~450 Vdc											
Capacitance Tolerance	±20%(M)											(at 20°C,120Hz)
Leakage Current	6.3~100 Vdc									160~450 Vdc		
	I≤0.01CV or 3μA, whichever is greater. (2 minutes)									I≤0.04CV+100μA (1 minute)		
	Where, I:Max.leakage current (μA), C:Nominal capacitance (μF), V: Rated voltage (V)											(at 20°C)
Dissipation Factor (tanδ)	Rated Voltage(Vdc)		6.3	10	16	25	35	50	63	80	100	160~250	400~450	
	tanδ (max.)	D80~E80	0.30	0.24	0.20	0.16	0.14	0.12	0.12	0.12	0.12	-	0.20	
		EB0~MN0	0.40	0.30	0.26	0.16	0.14	0.12	0.12	0.12	0.12	0.15	0.20	(at 20°C,120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated Voltage(Vdc)		6.3	10	16	25	35	50	63	80	100	160~250	400~450	
	Z(-25°C)/Z(+20°C)		4	3	2	2	2	2	2	2	2	6	6	
	Z(-40°C)/Z(+20°C)		10	8	6	4	3	3	3	3	3	10	18	(at 120Hz)
Endurance	The specifications listed below shall be met when the capacitors are restored to 20°C after rated voltage is applied for a specified period of time at 105°C.													
	Load Life		2,000 hours(160~450Vdc: 3,000 hours)											
	Capacitance Change		≤±20% of the initial value											
	Dissipation Factor (tanδ)		≤200% of the initial specified value											
	Leakage Current		≤The initial specified value											
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after leaving them under no load at 105°C for 1,000 hours (6.3~100Vdc: 500 hours).													
	Capacitance Change		≤±20% of the initial value											
	Dissipation Factor (tanδ)		≤200% of the initial specified value											
	Leakage Current		≤200% of the initial specified value											

DIMENSIONS[mm]



Size code	D	L	A	B	C	W	P
D80	5	7.7	5.3	5.3	5.9	0.5~0.8	1.4
E80	8.3	7.7	8.6	8.8	7.2	0.5~0.8	1.9
EB0	8.3	10.5	8.8	8.6	7.2	0.5~0.8	1.9
FB0	8	10.5	8.3	8.3	9.0	0.7~1.1	3.1
FD0	8	12.5	8.3	8.3	9.0	0.7~1.1	3.1
FE0	8	13.5	8.3	8.3	9.0	0.7~1.1	3.1
FG0	8	15.5	8.3	8.3	9.0	0.7~1.1	3.1
GB0	10	10.5	10.3	10.3	11.0	0.7~1.1	4.5
GD0	10	12.5	10.3	10.3	11.0	0.7~1.1	4.5
GE0	10	13.5	10.3	10.3	11.0	0.7~1.1	4.5
GH0	10	16.5	10.3	10.3	11.0	0.7~1.1	4.5
WE0	12.5	13.5	13.0	13.0	13.7	1.0~1.3	4.5
WG5	12.5	16.0	13.0	13.0	13.7	1.0~1.3	4.5
WM5	12.5	21.0	13.0	13.0	13.7	1.0~1.3	4.5
LH0	16	16.5	17.0	17.0	18.0	1.0~1.3	6.5
LN0	16	21.5	17.0	17.0	18.0	1.0~1.3	6.5
MH0	18	18.5	19.0	19.0	20.0	1.0~1.3	8.5
MN0	18	21.5	19.0	19.0	20.0	1.0~1.3	8.5

PART NUMBERING SYSTEM



RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

Freq.(Hz) / Rated voltage(Vdc)	120	1k	10k	100k
6.3~450	0.50	0.80	0.90	1.00

MK series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size code	tanδ	Rated ripple current (mArms/105°C,100kHz)
6.3(0J)	100	D80	0.30	105
	220	E80	0.30	160
	330	FB0	0.40	340
	1000	GB0	0.40	860
10(1A)	33	D80	0.24	105
	100	E80	0.24	175
	220	E80	0.24	180
	330	FB0	0.30	340
	470	FB0	0.30	360
	820	GB0	0.30	860
16(1C)	47	D80	0.20	105
	100	E80	0.20	175
	150	E80	0.20	190
	220	FB0	0.26	500
	330	FB0	0.26	545
	470	GB0	0.26	800
25(1E)	33	D80	0.16	105
	47	E80	0.16	180
	100	E80	0.16	205
	220	FB0	0.16	550
	330	GB0	0.16	780
	470	GD0	0.16	875
35(1V)	10	D80	0.14	105
	22	D80	0.14	110
	47	E80	0.14	210
	100	FB0	0.14	575
	220	GB0	0.14	835
	330	GD0	0.14	900
50(1H)	10	D80	0.12	90
	22	E80	0.12	175
	33	E80	0.12	180
	47	FB0	0.12	540
	100	GB0	0.12	700
	220	WE0	0.12	900
	330	WG5	0.12	1180
63(1J)	10	D80	0.12	85
	22	E80	0.12	150
	33	FB0	0.12	375
	47	FB0	0.12	450
	100	GB0	0.12	575
	220	WE0	0.12	890
80(1B)	10	E80	0.12	140
	22	FB0	0.12	375
	33	FB0	0.12	450
	47	GB0	0.12	575
	100	GD0	0.12	600
	150	WE0	0.12	800
	220	WG5	0.12	960
100(1K)	4.7	D80	0.12	70
	10	E80	0.12	135
	22	FB0	0.12	345
	33	GB0	0.12	560
	47	GB0	0.12	575
	100	WE0	0.12	680

WV (Vdc)	Cap (μF)	Size code	tanδ	Rated ripple current (mArms/105°C,100kHz)
160(2C)	10	GB0	0.15	90
	15	GB0	0.15	136
	22	GE0	0.15	180
		WE0	0.15	200
	33	GH0	0.15	240
		WE0	0.15	310
	47	WG5	0.15	420
		LH0	0.15	520
	68	LN0	0.15	660
		MH0	0.15	660
	100	LN0	0.15	780
		MN0	0.15	780
200(2D)	10	GB0	0.15	120
	15	GB0	0.15	164
	22	GE0	0.15	200
		WG5	0.15	236
	33	GH0	0.15	260
		WG5	0.15	300
	47	WM5	0.15	440
		LN0	0.15	556
	68	LN0	0.15	680
250(2E)	2.2	EB0	0.15	56
	3.3	EB0	0.15	68
	4.7	FB0	0.15	96
		GB0	0.15	104
	10	WE0	0.15	184
	22	LH0	0.15	364
	33	LN0	0.15	470
		MH0	0.15	470
	47	MN0	0.15	580
400(2G)	1	E80	0.20	28
	1.5	EB0	0.20	36
	2.2	EB0	0.20	44
		FB0	0.20	52
	3.3	FB0	0.20	64
		GB0	0.20	72
	3.9	FE0	0.20	72
		GB0	0.20	76
	4.7	FB0	0.20	78
		FD0	0.20	80
		GB0	0.20	84
	5.6	FD0	0.20	96
	6.8	FE0	0.20	108
	8.2	FG0	0.20	130
	10	GH0	0.20	156
		LH0	0.20	176
	15	WG5	0.20	184
		LH0	0.20	210
	22	LN0	0.20	260
	33	MN0	0.20	280
450(2W)	2.2	GB0	0.20	50
	3.3	WE0	0.20	80
	4.7	WE0	0.20	96
	10	LH0	0.20	170
	15	LN0	0.20	200
	22	LN0	0.20	240