

# Kingtronics®

# SMBJ SERIES

## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

STAND-OFF VOLTAGE 5.0 to 440 Volts, Peak Pulse Power 600 Watt

### FEATURES

- For surface mounted applications in order to optimize board space
- Low profile package , Built-in strain relief
- Glass passivated junction, Low inductance
- Excellent clamping capability. Repetition Rate(duty cycle):0.01%
- Fast response time:  
typically less than 1.0ps from 0 Volts to BV for unidirectional types
- Typical IR less than 1mA above 10V
- High temperature soldering: 250°C/10 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability 94V-O
- Pb-free plated

### MECHANICAL DATA

**Case:** JEDEC DO214AA. Molded plastic over glass passivated Junction

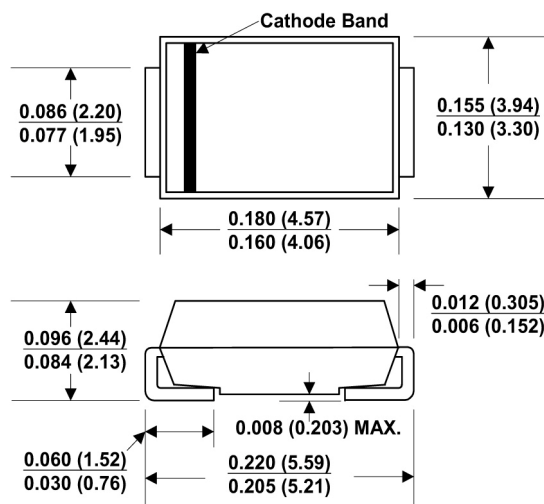
**Terminal:** Solder plated, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denoted positive end (cathode) except Bidirectional

**Standard Packaging:** 12mm tape (EIA STD RS-481)

**Weight:** 0.003 ounce, 0.093gram

### SMB (DO-214AA)



**Dimensions in inches and (millimeters)**

### DEVICES FOR BIPOLAR APPLICATION

For Bidirectional use C or CA Suffix for types SMBJ5.0 thru types SMBJ170 (e.g. SMBJ5.0C , SMBJ170CA) Electrical characteristics apply in both directions

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified ,

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform (Note 1,2 ,FIG.1)	P <sub>PPM</sub>	Min.600	Watts
Peak Pulse Current of on 10/1000 $\mu$ s waveform (Note 1,FIG.3)	I <sub>PPM</sub>	TABLE 1	Amps
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load,(JEDEC Method) (Note2,3)	I <sub>FSM</sub>	100	Amps
Operating junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 150	°C

1. Non-repetitive current pulse , per Fig. 3 and derated above TA = 25k per Fig. 2 .

2. Mounted on 5.0mm<sup>2</sup> (0.03mm thick) Copper Pads to each terminal

3.8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

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SMBJ PART NUMBER		REVERSE STAND- OFF VOLTAGE VRWM(V)	BREAKDOWN VOLTAGE VBR(V) MIN. @IT	BREAKDOWN VOLTAGE VBR(V) MAX. @IT	TEST CURR ENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc(V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR(μ A)
UNI-POLAR	BI-POLAR							
SMBJ5.0A	SMBJ5.0CA	5	6.4	7	10	9.2	65.3	800
SMBJ6.0A	SMBJ6.0CA	6	6.67	7.37	10	10.3	58.3	800
SMBJ6.5A	SMBJ6.5CA	6.5	7.22	7.98	10	11.2	53.6	500
SMBJ7.0A	SMBJ7.0CA	7	7.78	8.6	10	12	50	200
SMBJ7.5A	SMBJ7.5CA	7.5	8.33	9.21	1	12.9	46.6	100
SMBJ8.0A	SMBJ8.0CA	8	8.89	9.83	1	13.6	44.2	50
SMBJ8.5A	SMBJ8.5CA	8.5	9.44	10.4	1	14.4	41.7	20
SMBJ9.0A	SMBJ9.0CA	9	10	11.1	1	15.4	39	10
SMBJ10A	SMBJ10CA	10	11.1	12.3	1	17	35.3	5
SMBJ11A	SMBJ11CA	11	12.2	13.5	1	18.2	33	5
SMBJ12A	SMBJ12CA	12	13.3	14.7	1	19.9	30.2	5
SMBJ13A	SMBJ13CA	13	14.4	15.9	1	21.5	28	5
SMBJ14A	SMBJ14CA	14	15.6	17.2	1	23.2	25.9	5
SMBJ15A	SMBJ15CA	15	16.7	18.5	1	24.4	24.6	5
SMBJ16A	SMBJ16CA	16	17.8	19.7	1	26	23.1	5
SMBJ17A	SMBJ17CA	17	18.9	20.9	1	27.6	21.8	5
SMBJ18A	SMBJ18CA	18	20	22.1	1	29.2	20.6	5
SMBJ20A	SMBJ20CA	20	22.2	24.5	1	32.4	18.6	5
SMBJ22A	SMBJ22CA	22	24.4	26.9	1	35.5	16.9	5
SMBJ24A	SMBJ24CA	24	26.7	29.5	1	38.9	15.5	5
SMBJ26A	SMBJ26CA	26	28.9	31.9	1	42.1	14.3	5
SMBJ28A	SMBJ28CA	28	31.1	34.4	1	45.4	13.3	5
SMBJ30A	SMBJ30CA	30	33.3	36.8	1	48.4	12.4	5
SMBJ33A	SMBJ33CA	33	36.7	40.6	1	53.3	11.3	5
SMBJ36A	SMBJ36CA	36	40	44.2	1	58.1	10.4	5
SMBJ40A	SMBJ40CA	40	44.4	49.1	1	64.5	9.3	5
SMBJ43A	SMBJ43CA	43	47.8	52.8	1	69.4	8.7	5
SMBJ45A	SMBJ45CA	45	50	55.3	1	72.7	8.3	5

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SMBJ48A	SMBJ48CA	48	53.3	58.9	1	77.4	7.8	5
SMBJ51A	SMBJ51CA	51	56.7	62.7	1	82.4	7.3	5
SMBJ54A	SMBJ54CA	54	60	66.3	1	87.1	6.9	5
SMBJ58A	SMBJ58CA	58	64.4	71.2	1	93.6	6.5	5
SMBJ60A	SMBJ60CA	60	66.7	73.7	1	96.8	6.2	5
SMBJ64A	SMBJ64CA	64	71.1	78.6	1	103	5.9	5
SMBJ70A	SMBJ70CA	70	77.8	86	1	113	5.3	5
SMBJ75A	SMBJ75CA	75	83.3	92.1	1	121	5	5
SMBJ78A	SMBJ78CA	78	86.7	95.8	1	126	4.8	5
SMBJ85A	SMBJ85CA	85	94.4	104	1	137	4.4	5
SMBJ90A	SMBJ90CA	90	100	111	1	146	4.1	5
SMBJ100A	SMBJ100CA	100	111	123	1	162	3.7	5
SMBJ110A	SMBJ110CA	110	122	135	1	177	3.4	5
SMBJ120A	SMBJ120CA	120	133	147	1	193	3.1	5
SMBJ130A	SMBJ130CA	130	144	159	1	209	2.9	5
SMBJ150A	SMBJ150CA	150	167	185	1	243	2.5	5
SMBJ160A	SMBJ160CA	160	178	197	1	259	2.3	5
SMBJ170A	SMBJ170CA	170	189	209	1	275	2.2	5
SMBJ180A	SMBJ180CA	180	201	222	1	292	2.1	5
SMBJ200A	SMBJ200CA	200	224	247	1	342	1.9	5
SMBJ220A	SMBJ220CA	220	246	272	1	356	1.7	5
SMBJ250A	SMBJ250CA	250	279	309	1	405	1.5	5
SMBJ300A	SMBJ300CA	300	355	371	1	486	1.3	5
SMBJ350A	SMBJ350CA	350	391	432	1	567	1.1	5
SMBJ400A	SMBJ400CA	400	447	494	1	648	0.9	5
SMBJ440A	SMBJ440CA	440	492	543	1	713	0.9	5

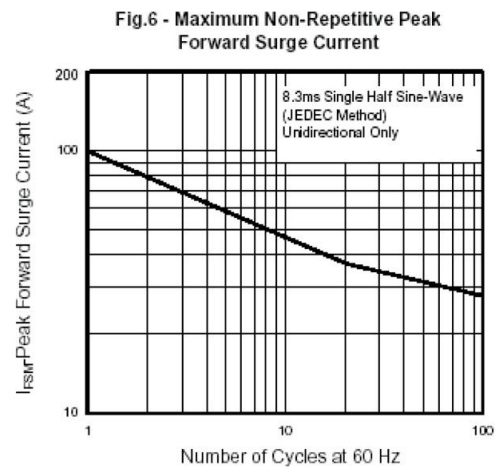
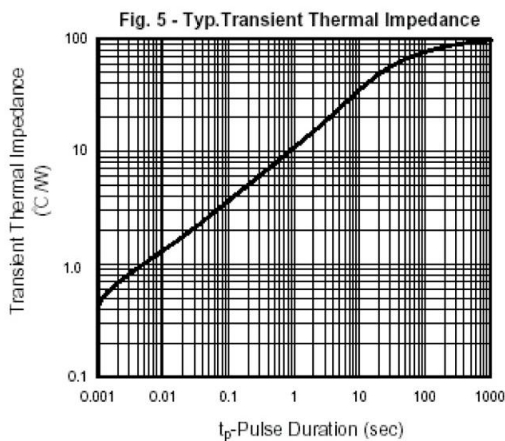
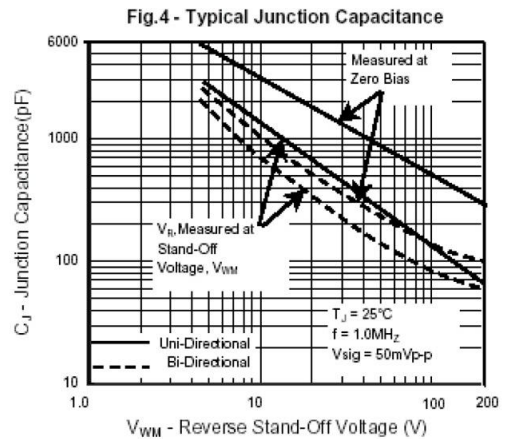
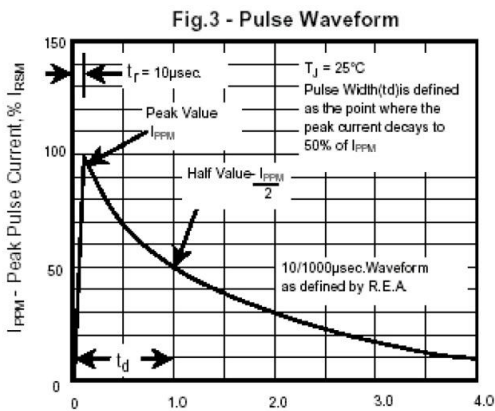
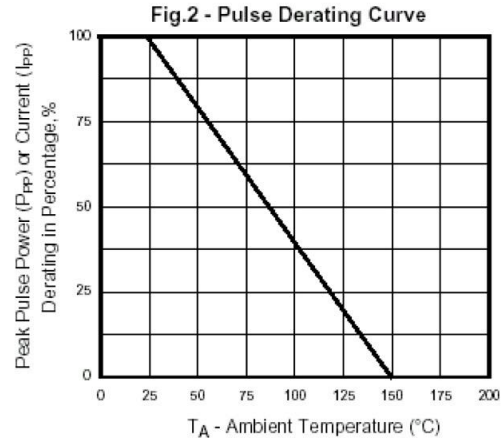
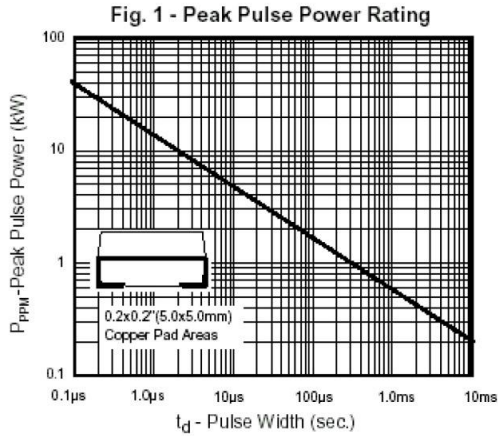
For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.

For parts without A , the VBR is + 10%

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## RATINGS AND CHARACTERISTIC CURVES



Note: Specifications are subject to change without notice.