

**SURFACE MOUNT  
UNIDIRECTIONAL AND BIDIRECTIONAL  
TRANSIENT VOLTAGE SUPPRESSORS**

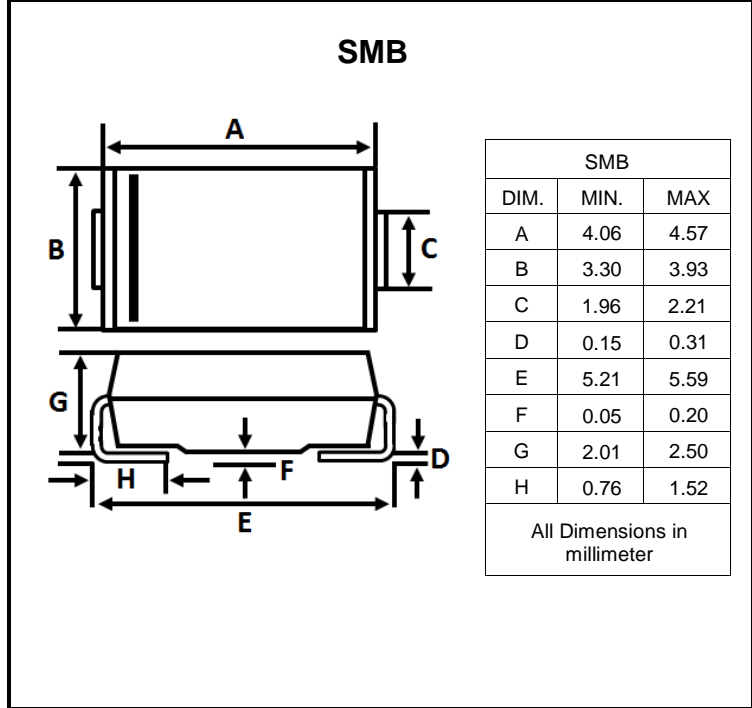
**REVERSE VOLTAGE - 5.0 to 20 Volts  
POWER DISSIPATION - 1500 Watts**

**FEATURES**

- For surface mounted applications
- Low leakage
- Excellent clamping capability
- Fast response time
- RoHs compliant

**MECHANICAL DATA**

- Case : Molded plastic
- Polarity : By cathode band denotes Uni-directional device
- Weight: 0.003 ounces, 0.093 grams



**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**  
Ratings at 25°C ambient temperature unless otherwise specified.

**ABSOLUTE RATINGS**

PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation @ $T_J = 25^\circ\text{C}$ , $T_P = 1\text{ms}$ (Note 1)	$P_{PP}$	1500	W
Peak forward surge current 8.3ms single half sine-wave @ $T_J = 25^\circ\text{C}$	$I_{FSM}$	150	A
Steady state power dissipation @ $T_L = 140^\circ\text{C}$ with infinite heatsink	$P_{M(AV)}$	2.0	W
Maximum instantaneous forward voltage at 16A for unidirectional devices only (Note 2)	$V_F$	2.0	V
Typical thermal resistance (Note 3)	RthJA RthJL RthJC	110 30 42	$^\circ\text{C/W}$
Operating temperature range	$T_J$	-55 to +175	$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-55 to +175	$^\circ\text{C}$

NOTES:

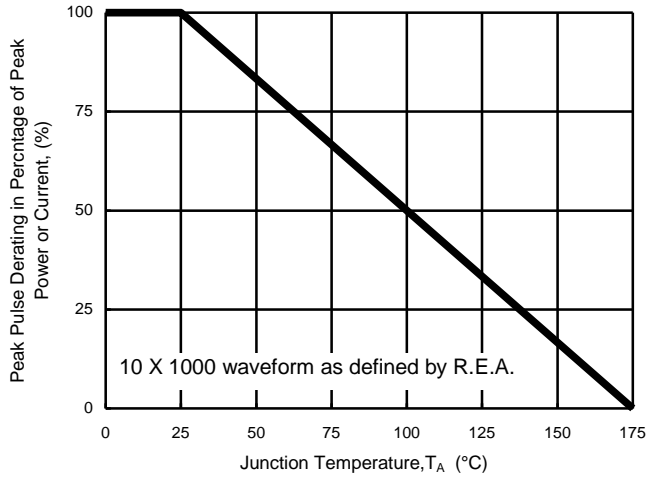
REV.1, APR.-2020, KSIB06

1. Non-repetitive current pulse, per fig. 3 and derated above  $T_J = 25^\circ\text{C}$  per fig.1
2.  $V_F \text{ max} = 2\text{V}$  at  $I_F = 16\text{A}$  300us square wave pulse..
3. Thermal resistance from junction to ambient, lead and case

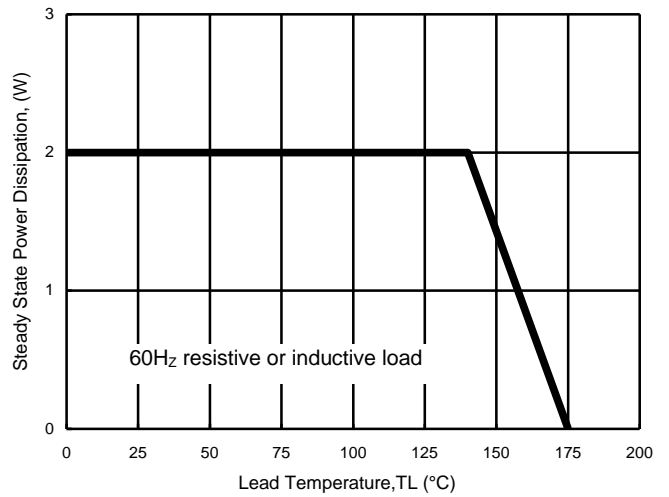
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## RATING AND CHARACTERISTIC CURVES 1.5SMBJ SERIES

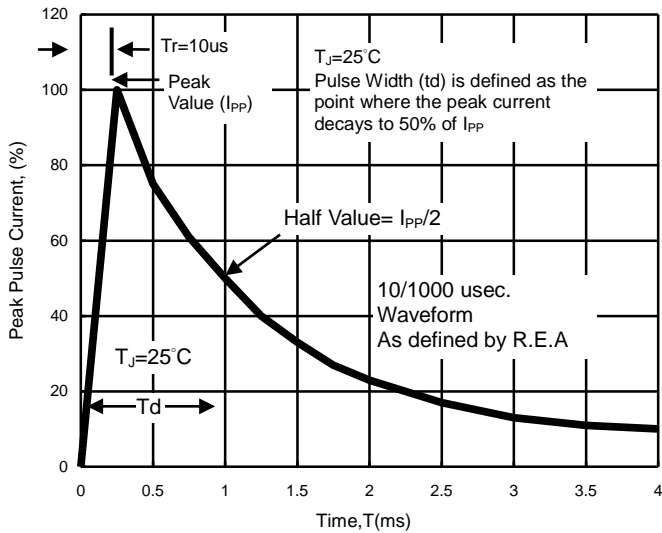
**FIG.1- Pulse Derating Curve**



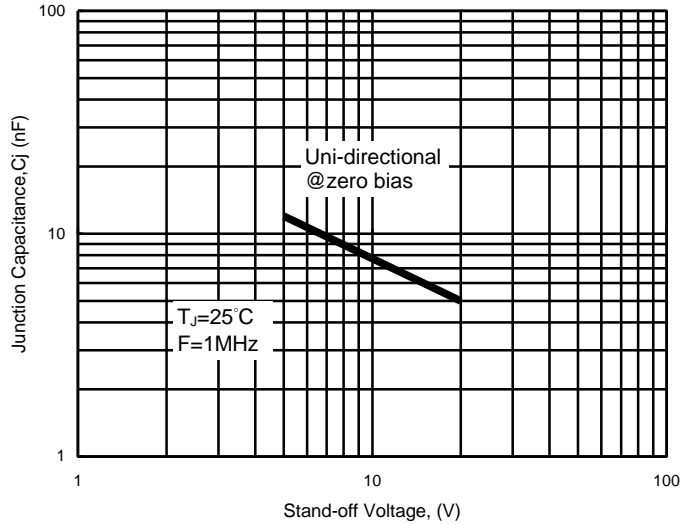
**FIG.2- Steady State Power Derating Curve**



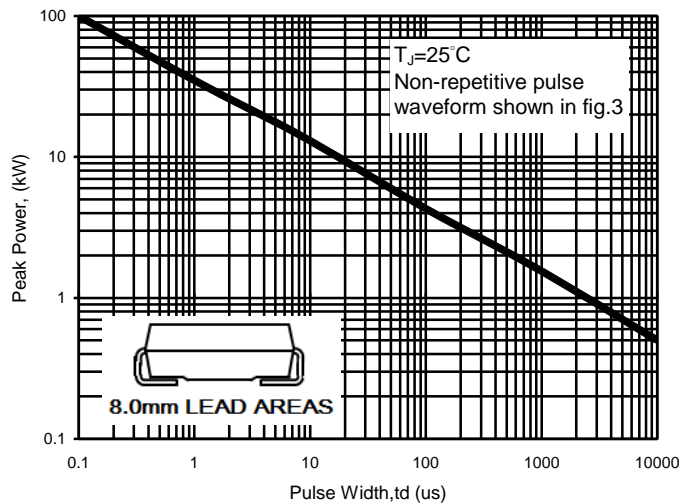
**FIG.3- Pulse Waveform**



**FIG.4- Typical Junction Capacitance**



**FIG.5- Peak Pulse Power Rating Curve**



## 1.5SMBJ SERIES

### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Device	Marking code	Reverse stand-off voltage	Breakdown voltage $V_{BR}$ volts			Maximum reverse voltage at $I_{RSM}$ (clamping voltage)	Maximum reverse surge current	Maximum reverse leakage at $V_{RWM}$
			Min	Max	@ $I_T$ (mA)			
Uni	Uni	$V_R$ (V)	Min	Max	@ $I_T$ (mA)	$V_c$ (V)	$I_{PP}$ (A)	$I_R$ ( $\mu$ A)
1.5SMBJ5.0A	GDE	5.0	6.40	7.07	10	9.2	163.0	1000
1.5SMBJ6.0A	GDG	6.0	6.67	7.37	10	10.3	145.6	1000
1.5SMBJ6.5A	GDK	6.5	7.22	7.98	10	11.2	133.9	500
1.5SMBJ7.0A	GDM	7.0	7.78	8.60	10	12.0	125.0	200
1.5SMBJ7.5A	GDP	7.5	8.33	9.21	1.0	12.9	116.3	100
1.5SMBJ8.0A	GDR	8.0	8.89	9.83	1.0	13.6	110.3	50
1.5SMBJ8.5A	GDT	8.5	9.44	10.4	1.0	14.4	104.2	20
1.5SMBJ9.0A	GDV	9.0	10.0	11.1	1.0	15.4	97.4	10
1.5SMBJ10A	GDX	10	11.1	12.3	1.0	17.0	88.2	5.0
1.5SMBJ11A	GDZ	11	12.2	13.5	1.0	18.2	82.4	0.5
1.5SMBJ12A	GEE	12	13.3	14.7	1.0	19.9	75.3	0.5
1.5SMBJ13A	GEG	13	14.4	15.9	1.0	21.5	69.7	0.5
1.5SMBJ14A	GEK	14	15.6	17.2	1.0	23.2	64.7	0.5
1.5SMBJ15A	GEM	15	16.7	18.5	1.0	24.4	61.5	0.5
1.5SMBJ16A	GEP	16	17.8	19.7	1.0	26.0	57.7	0.5
1.5SMBJ17A	GER	17	18.9	20.9	1.0	27.6	53.3	0.5
1.5SMBJ18A	GET	18	20.0	22.1	1.0	29.2	51.4	0.5
1.5SMBJ20A	GEV	20	22.2	24.5	1.0	32.4	46.3	0.5

Notes:

1. Suffix 'A' denotes 5% tolerance device.

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