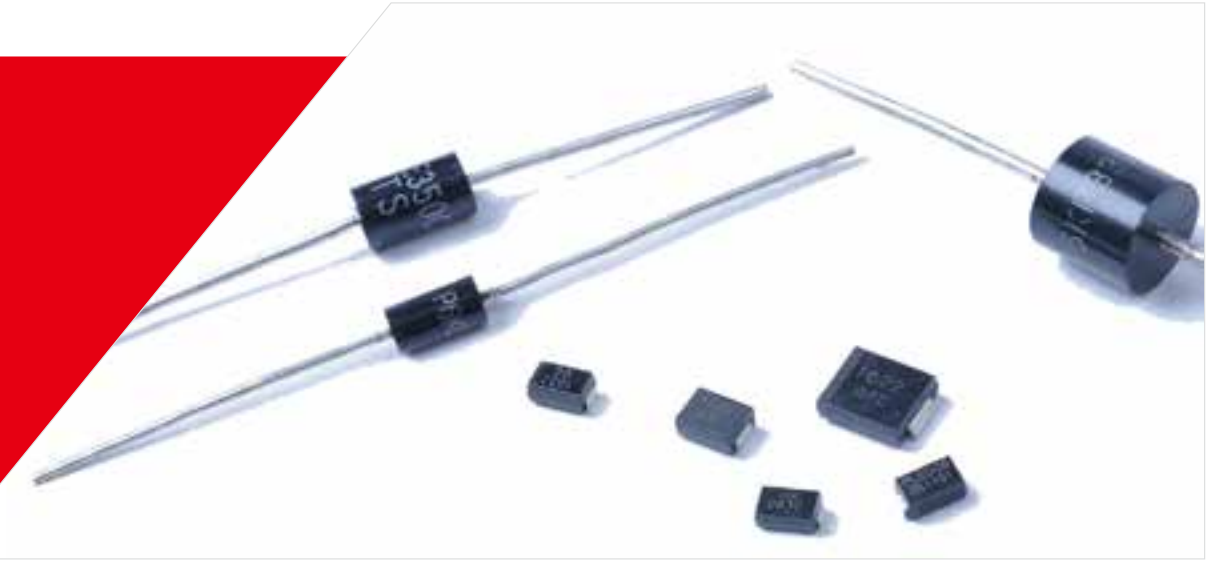
RUILON
瑞隆源电子



Transient Voltage Suppressors

SMBJ3.3A Series

361° Circuit Protection System

Revision:DEC-16

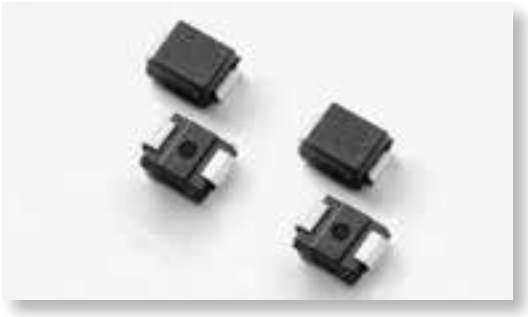
Please refer to http://www.ruilon.com.cn for current information.

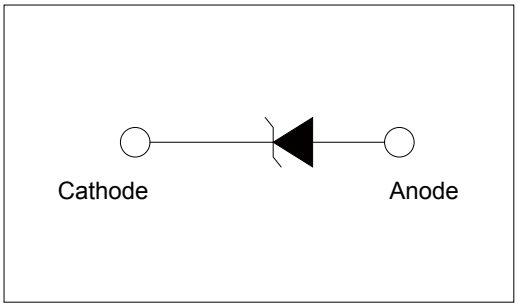
RUILON
ELECTRONICS

Transient Voltage Suppressors - SMBJ3.3A Series

Features

- Very fast response time
- Halogen free and RoHS compliant
- Low incremental surge resistance
- Optimized for LAN protection applications
- Matte tin lead–free Plated
- Halogen ree and RoHS compliant
- For surface mounted applications to optimize board space
- ESD protection of data lines in accordance with IEC 61000-4-2 (IEC801-2)
- EFT protection of data lines in accordance with IEC 61000-4-4 (IEC801-4)
- High temperature soldering : 260°C/ 40 seconds at terminals





Description

The SMBJ3.3A series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Mechanical Characteristics

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation at TA=25ºC by 10/1000µs Waveform (Fig.2)(Note 1), (Note 2)	P_{PPM}	300	Watts
Forward voltage IF=0.2A	VF	1.2	V
Operating junction and Storage Temperature Range.	T_J,T_{STG}	-55°C to 150°C	°C

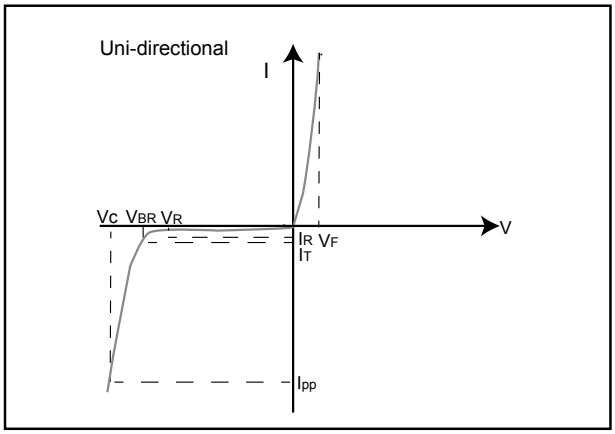
Notes:
1. Non-repetitive current pulse, per Fig.4 and derated above TA=25ºC per Fig. 3.
2. Mounted on 5.0x5.0mm copper pad to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only.
4. VF< 3.5V for VBR _< 200V and VF< 6.5V for VBR >_ 201V

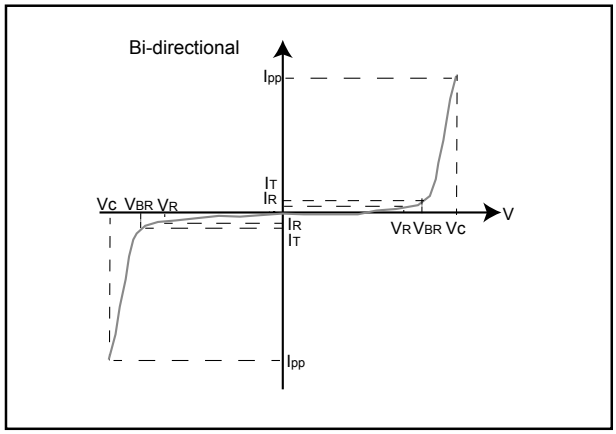
Transient Voltage Suppressors - SMBJ3.3A Series

Electriacl Characteristics

Type Number	Device Marking Code	Reverse Stand-Off Voltage	Breakdown Voltage@I_T		Test Current	Maximum Clamping Voltage@I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
		V_{RWM}(V)	$V_{BR\ MIN.}$(V)	(V)	I_T(mA)	VC(V)	I_{PP}(A)	I_R(μA)
SMBJ3.3A	KC	3.3	4.00	6.0	1	7.2	42	10

I-V Curve Characteristics





P_{PPM} Peak Pulse Power Dissipation -- Max power dissipation
V_R Stand-off Voltage -- Maximum voltage that can be applied to the TVS without operation
V_{BR} Breakdown Voltage -- Maximum voltage that flows though the TVS at a specified test current (I_T)
V_C Clamping Voltage -- Peak voltage measured across the TVS at a specified Ippm (peak impulse current)
I_R Reverse Leakage Current -- Current measured at V_R
V_F Forward Voltage Drop for Uni-directional

Ratings and Characteristic Curves (T_A=25° C unless otherwise noted)

Figure 1 -TVS Transients Clamping Waveform

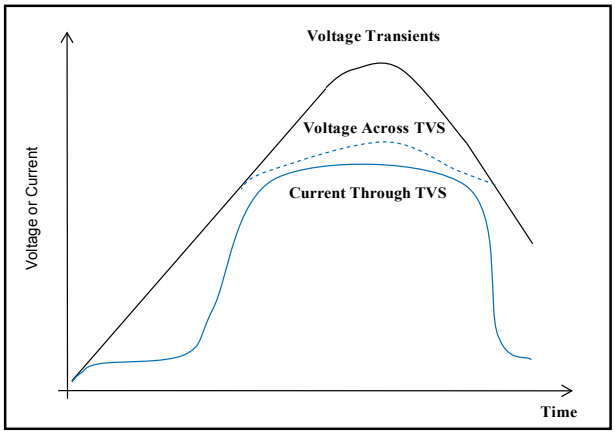
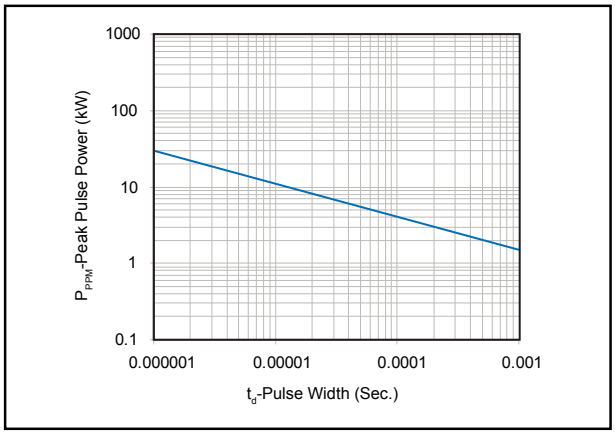


Figure 2 - Peak Pulse Power Rating



Transient Voltage Suppressors - SMBJ3.3A Series

Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

Figure 3 - Pulse Derating Curve

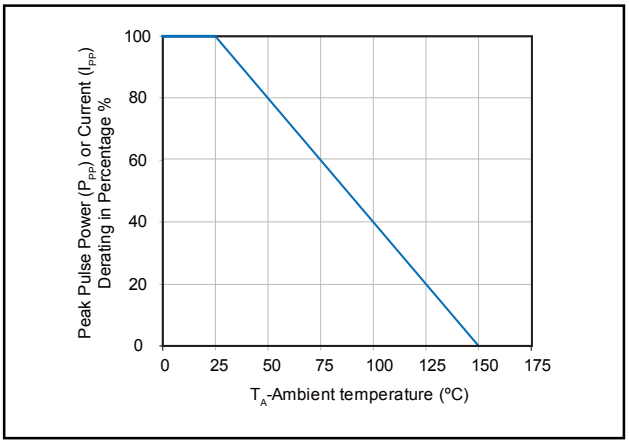


Figure 4 - Pulse Waveform

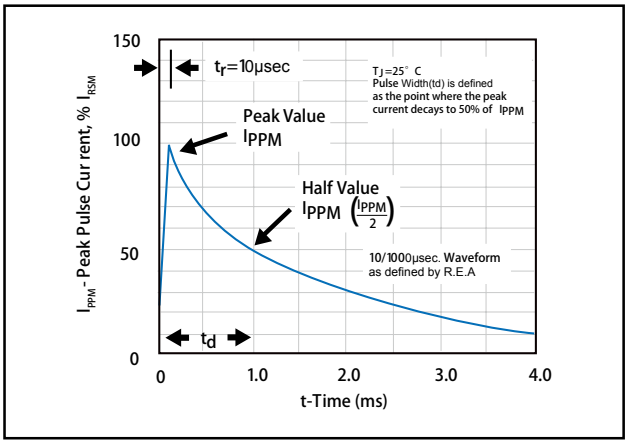


Figure 5 - Typical Junction Capacitance

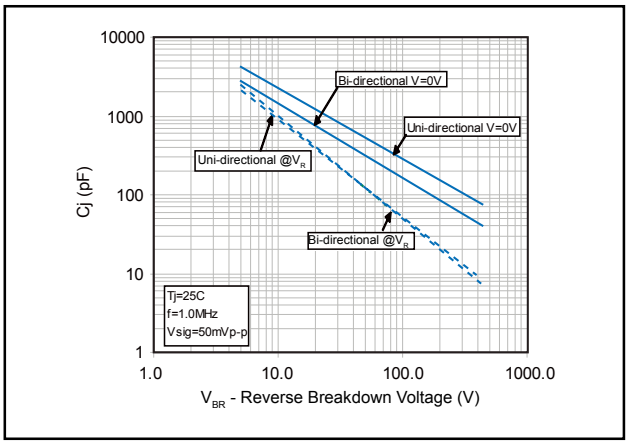


Figure 6 - Steady State Power Dissipation Derating Curve

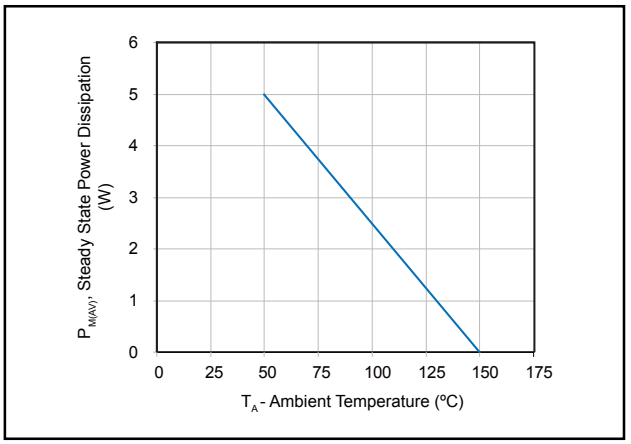
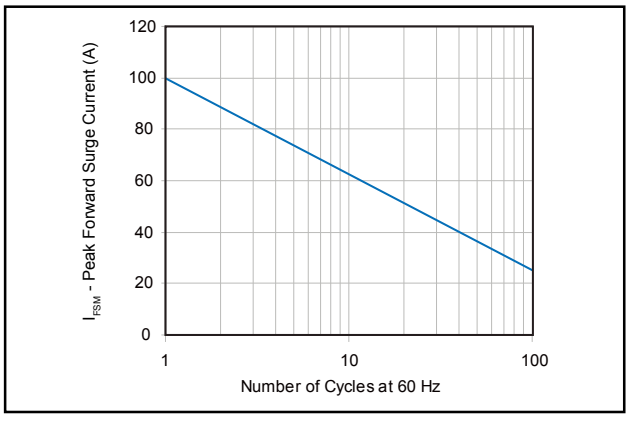


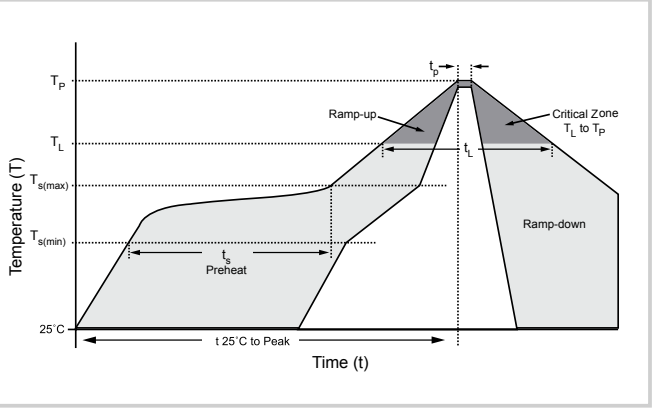
Figure 7 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only



Transient Voltage Suppressors - SMBJ3.3A Series

Soldering Parameters

Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(min)}$)	200°C
	- Time (min to max) (t_s)	60-180 secs
Average ramp up rate (Liquidus Temp (T_A) to peak		3°C/second max
$T_{S(max)}$ to T_A - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_A) (Liquidus)	217°C
	- Time (min to max) (t_s)	60-150 seconds
Peak Temperature (T_P)		$260^{+0/-5}$ °C
Time within 5°C of actual peak Temperature (t_p)		20-40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		280°C



Environmental Specifications

High Temp. Storage	JESD22-A103
HTRB	JESD22-A108
Temperature Cycling	JESD22-A104
MSL	JEDEC-J-STD-020, Level 1
H3TRB	JESD22-A101
RSH	JESD22-A111

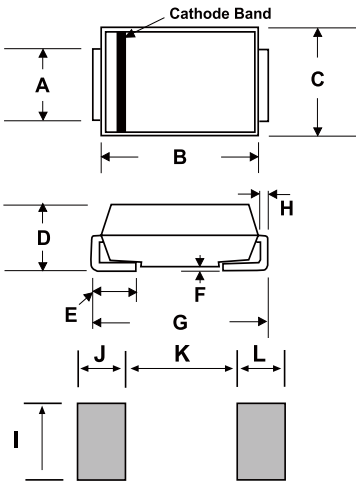
Physical Specifications

Weight	0.003 ounce, 0.093 grams
Case	JEDEC DO-214AA Molded Plastic over
Polarity	glass passivated junction
Termina	Matte Tin axial leads, solderable per JESD22-B102D.

Flow/Wave Soldering

Peak Temperature :	265°C
Dipping Time :	10 seconds
Soldering :	1 time

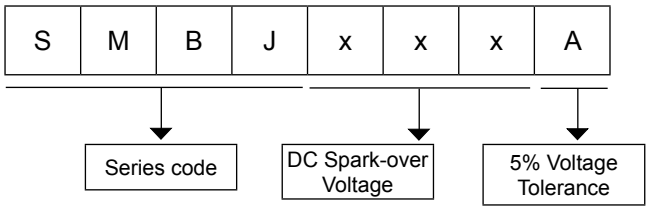
Dimensions DO-214AA/SMB



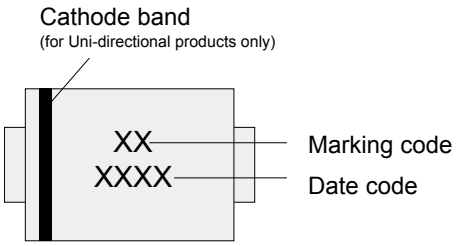
DIM	Inches		Millimeters	
	Min	Max	Min	Max
A	0.077	0.086	1.950	2.200
B	0.160	0.180	4.060	4.570
C	0.130	0.155	3.300	3.940
D	0.084	0.096	2.130	2.440
E	0.030	0.060	0.760	1.520
F	-	0.008	-	0.203
G	0.205	0.220	5.210	5.590
H	0.006	0.012	0.152	0.305
I	0.089	-	2.260	-
J	0.085	-	2.160	-
K	-	0.107	-	2.740
L	0.085	-	2.160	-

Transient Voltage Suppressors - SMBJ3.3A Series

Product Name



Part Marking System



Packaging

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
SMBJ3.3A	DO-214AC	500	Tape & Reel	EIA RS-481

Tape and Reel Specification