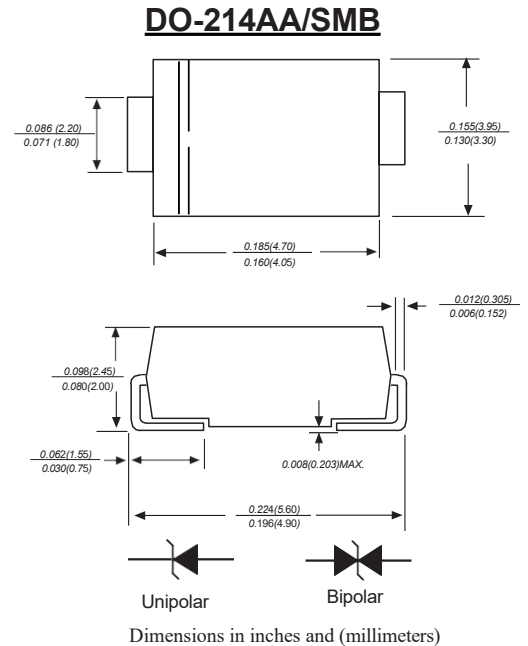


SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

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
- ◆ 1000W peak pulse power capability at 10/1000μs waveform,
- ◆ repetition rate (duty cycle): 0.01%
- ◆ Fast response time
- ◆ Typical IR less than 1μA above 10V
- ◆ High Temperature soldering: 260°C/10 seconds at terminals
- ◆ Plastic package has underwriters laboratory flammability 94V-0



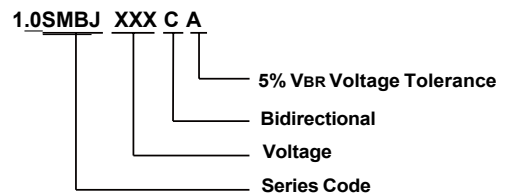
Marking Code

Cathode Band(for Uni-directional products only)

Applications

- ◆ I/O interface
- ◆ AC/DC power supply
- ◆ Low frequency signal transmission line (RS232, RS485, etc.)

Part Number Code



MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Peak pulse power dissipation at 10/1000μs waveform (Note1, Note2, Fig.1)	P _{PPM}	1000	W
Peak pulse current of at 10/1000μs waveform (Note 1, Fig.3)	I _{PPM}	See Table	A
Steady state power dissipation at T _A =50°C (Fig.5)	P _{M(AV)}	5.0	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3, Fig.6)	I _{FSM}	100	A
Operating junction and Storage Temperature Range.	T _J , T _{STG}	-65 to +150	°C
Typical thermal resistance junction to lead	R _{θJL}	20	°C/W
Typical thermal resistance junction to ambient	R _{θJA}	100	°C/W

Notes:1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.2.

2. Mounted on 5.0mm×5.0mm (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.

Electrical Characteristics (TA=25°C)

Part Number		Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage @I _r	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
Unidirectional	Bidirectional	UNI	BI	V _{RWM} (V)	V _{BR} (V)	I _r (mA)	V _c (V)	I _{PP} (A)	I _R (μA)
1.0SMBJ5.0A	1.0SMBJ5.0CA	KEH	AEH	5.0	6.40~7.00	10	9.2	108.70	800
1.0SMBJ6.0A	1.0SMBJ6.0CA	KGH	AGH	6.0	6.67~7.37	10	10.3	97.10	800
1.0SMBJ6.5A	1.0SMBJ6.5CA	KKH	AKH	6.5	7.22~7.98	10	11.2	89.30	500
1.0SMBJ7.0A	1.0SMBJ7.0CA	KMH	AMH	7.0	7.78~8.60	10	12.0	83.40	200
1.0SMBJ7.5A	1.0SMBJ7.5CA	KPH	APH	7.5	8.33~9.21	1	12.9	77.60	100
1.0SMBJ8.0A	1.0SMBJ8.0CA	KRH	ARH	8.0	8.89~9.83	1	13.6	73.60	50
1.0SMBJ8.5A	1.0SMBJ8.5CA	KTH	ATH	8.5	9.44~10.40	1	14.4	69.50	20
1.0SMBJ9.0A	1.0SMBJ9.0CA	KVH	AVH	9.0	10.00~11.10	1	15.4	65.00	10
1.0SMBJ10A	1.0SMBJ10CA	KXH	AXH	10.0	11.10~12.30	1	17.0	58.90	5
1.0SMBJ11A	1.0SMBJ11CA	KZH	AZH	11.0	12.20~13.50	1	18.2	55.00	1
1.0SMBJ12A	1.0SMBJ12CA	LEH	BEH	12.0	13.30~14.70	1	19.9	50.30	1
1.0SMBJ13A	1.0SMBJ13CA	LGH	BGH	13.0	14.40~15.90	1	21.5	46.60	1
1.0SMBJ14A	1.0SMBJ14CA	LKH	BKH	14.0	15.60~17.20	1	23.2	43.20	1
1.0SMBJ15A	1.0SMBJ15CA	LMH	BMH	15.0	16.70~18.50	1	24.4	41.00	1
1.0SMBJ16A	1.0SMBJ16CA	LPH	BPH	16.0	17.80~19.70	1	26.0	38.50	1
1.0SMBJ17A	1.0SMBJ17CA	LRH	BRH	17.0	18.90~20.90	1	27.6	36.30	1
1.0SMBJ18A	1.0SMBJ18CA	LTH	BTH	18.0	20.00~22.10	1	29.2	34.30	1
1.0SMBJ20A	1.0SMBJ20CA	LVH	BVH	20.0	22.20~24.50	1	32.4	30.90	1
1.0SMBJ22A	1.0SMBJ22CA	LXH	BXH	22.0	24.40~26.90	1	35.5	28.20	1
1.0SMBJ24A	1.0SMBJ24CA	LZH	BZH	24.0	26.70~29.50	1	38.9	25.80	1
1.0SMBJ26A	1.0SMBJ26CA	MEH	CEH	26.0	28.90~31.90	1	42.1	23.80	1
1.0SMBJ28A	1.0SMBJ28CA	MGH	CGH	28.0	31.10~34.40	1	45.4	22.10	1
1.0SMBJ30A	1.0SMBJ30CA	MKH	CKH	30.0	33.30~36.80	1	48.4	20.70	1
1.0SMBJ33A	1.0SMBJ33CA	MMH	CMH	33.0	36.70~40.60	1	53.3	18.80	1
1.0SMBJ36A	1.0SMBJ36CA	MPH	CPH	36.0	40.00~44.20	1	58.1	17.30	1
1.0SMBJ40A	1.0SMBJ40CA	MRH	CRH	40.0	44.40~49.10	1	64.5	15.60	1
1.0SMBJ43A	1.0SMBJ43CA	MTH	CTH	43.0	47.80~52.80	1	69.4	14.50	1
1.0SMBJ45A	1.0SMBJ45CA	MVH	CVH	45.0	50.00~55.30	1	72.7	13.80	1
1.0SMBJ48A	1.0SMBJ48CA	MXH	CXH	48.0	53.30~58.90	1	77.4	13.00	1
1.0SMBJ51A	1.0SMBJ51CA	MZH	CZH	51.0	56.70~62.70	1	82.4	12.20	1
1.0SMBJ54A	1.0SMBJ54CA	NEH	DEH	54.0	60.00~66.30	1	87.1	11.50	1
1.0SMBJ58A	1.0SMBJ58CA	NGH	DGH	58.0	64.40~71.20	1	93.6	10.70	1
1.0SMBJ60A	1.0SMBJ60CA	NKH	DKH	60.0	66.70~73.70	1	96.8	10.40	1
1.0SMBJ64A	1.0SMBJ64CA	NMH	DMH	64.0	71.10~78.60	1	103.0	9.84	1
1.0SMBJ70A	1.0SMBJ70CA	NPH	DPH	70.0	77.80~86.00	1	113.0	8.84	1
1.0SMBJ75A	1.0SMBJ75CA	NRH	DRH	75.0	83.30~92.10	1	121.0	8.34	1
1.0SMBJ78A	1.0SMBJ78CA	NTH	DTH	78.0	86.70~95.80	1	126.0	8.00	1
1.0SMBJ85A	1.0SMBJ85CA	NVH	DVH	85.0	94.40~104.00	1	137.0	7.30	1
1.0SMBJ90A	1.0SMBJ90CA	NXH	DXH	90.0	100.00~111.00	1	146.0	6.85	1

Notes: For bidirectional type having V_{RWM} of 10V and less, the I_R limit is double

Ratings and Characteristic Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Figure1. Peak Pulse Power Rating Curve

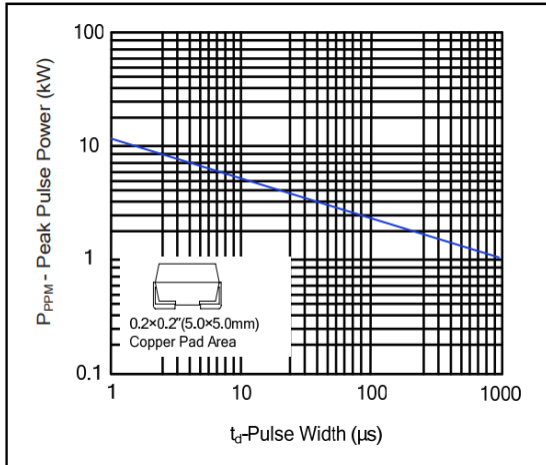


Figure2. Pulse Derating Curve

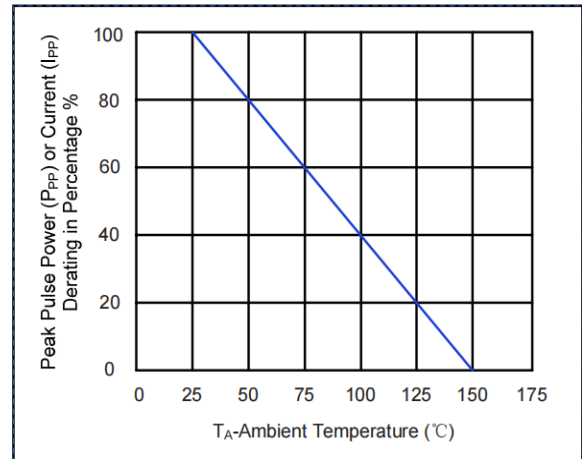


Figure3. Pulse Waveform

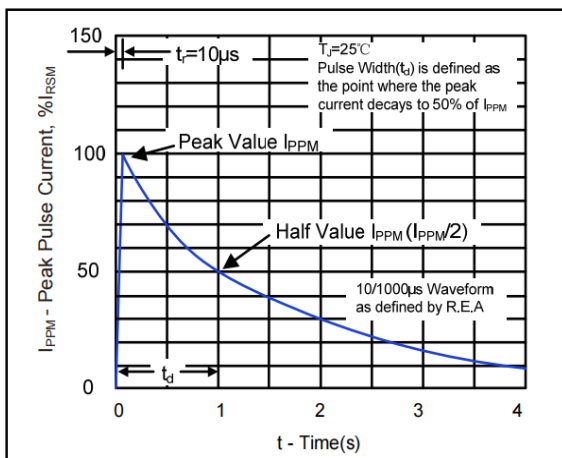


Figure4. Pulse Waveform

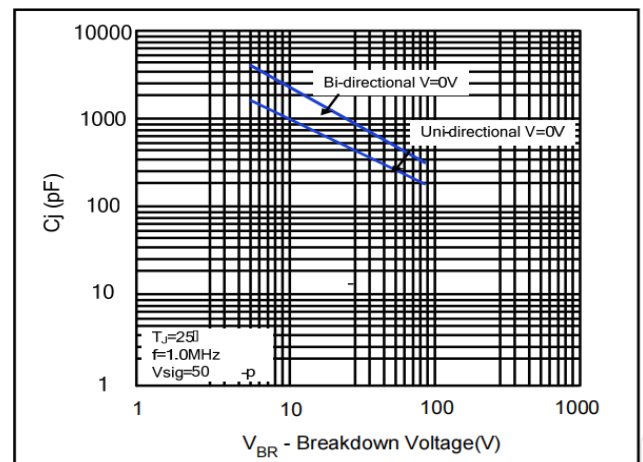


Figure5. Steady State Power Dissipation Derating Curve

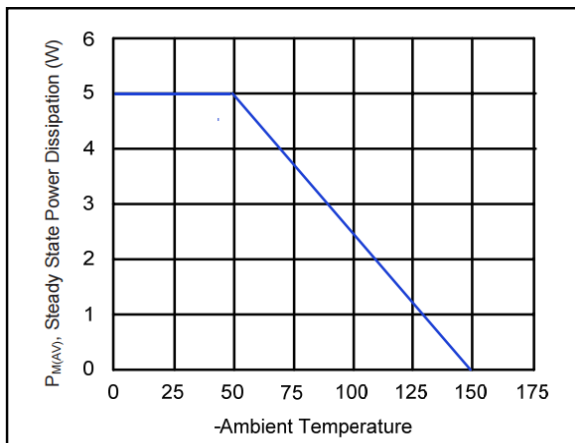
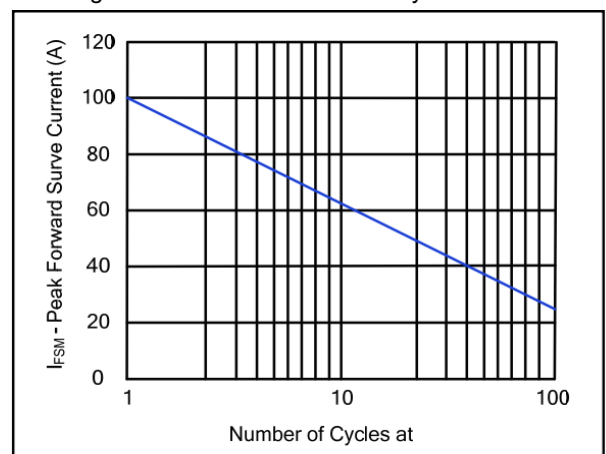
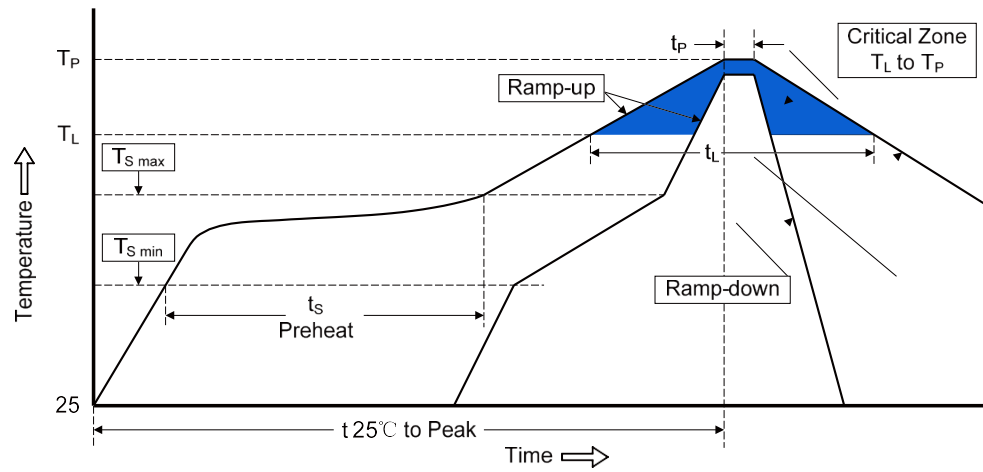


Figure6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



Reflow Soldering



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T _L to T _P)	3°C/second max.
Preheat	
-Temperature Min (T _{S min})	150°C
-Temperature Max (T _{S max})	200°C
-Time (min to max) (t _s)	60-180 seconds
T _{S max} to T _L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T _L)	217°C
-Time (t _L)	60-150 seconds
Peak Temperature (T _P)	260°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	8 minutes max.