SMAJ78(C)A/TR13

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
- 400W 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



SMA
(DO-214AC)

Mechanical Data

- Case: JEDEC DO-214AC/SMA molded plastic body
- Terminals: Solderable per MIL-STD-750,Method 2026
- Polarity: Polarity symbol marking on body
- Mounting Position: Any
- Weight: 0.07 grams

Applications

- I/O interface
- AC/D Cpower supply
- Low frequency signal transmission line (RS232,RS485,etc.)

Maximum Ratings (Ta=25°C unless otherwise noted)

Peak pulse power dissipation at 10/1000μs waveform (Note1, Note2, Fig.1)	P_{PPM}	400	W
Peak pulse current of at 10/1000μs waveform (Note 1, Fig.3)	I_{PPM}	See Tale	A
Steady state power dissipation at T_A=50℃ (Fig.5)	$P_{M(AV)}$	3.3	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3, Fig.6)	I_{FSM}	40	A
Operating junction and Storage Temperature Range.	T_J,T_{STG}	-65 to +150	°C
Typical thermal resistance junction to lead	$R_{\theta JL}$	30	°C/W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	120	°C/W

Notes:1. Non-repetitive current pulse, per Fig.3 and derated above TA=25℃ 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_T	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_T(mA)	V_C(V)	I_{PP}(A)	I_R(μA)
SMAJ78A/TR13	SMAJ78CA/TR13	RT	ZT	78.0	86.7-95.8	1	126.0	3.2	1

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

Figure 1. Peak Pulse Power Rating Curve

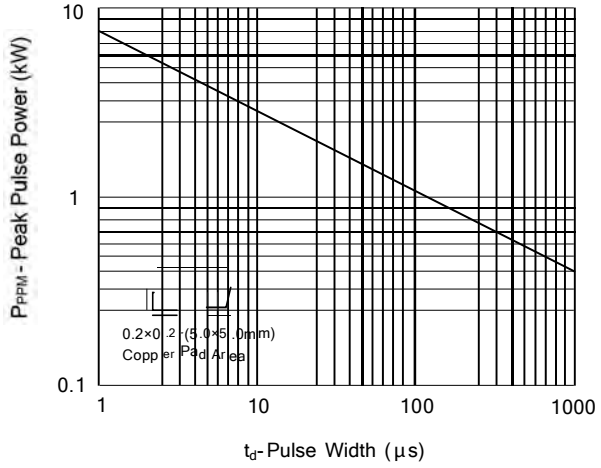


Figure 2. Pulse Derating Curve

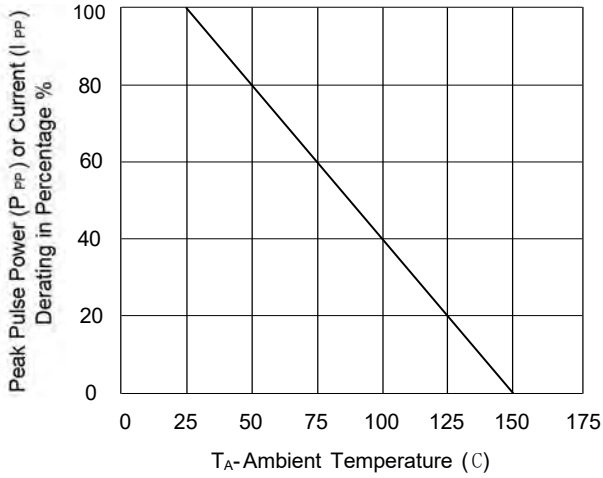


Figure 3. Pulse Waveform

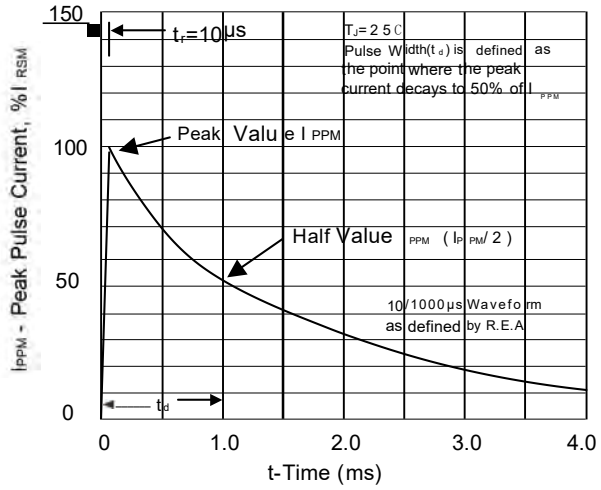


Figure 4. Typical Junction Capacitance

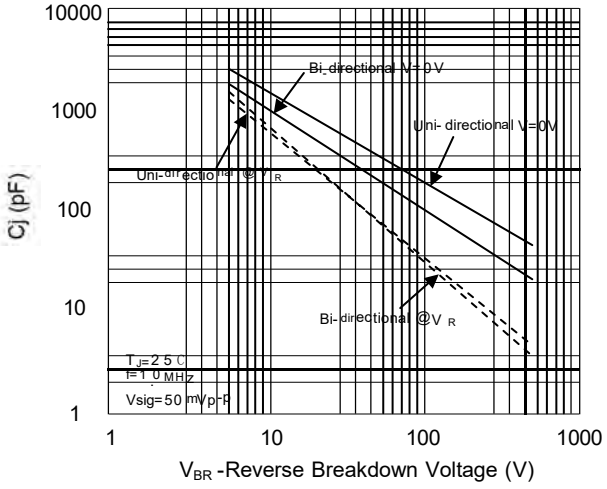


Figure 5. Steady State Power Dissipation Derating Curve

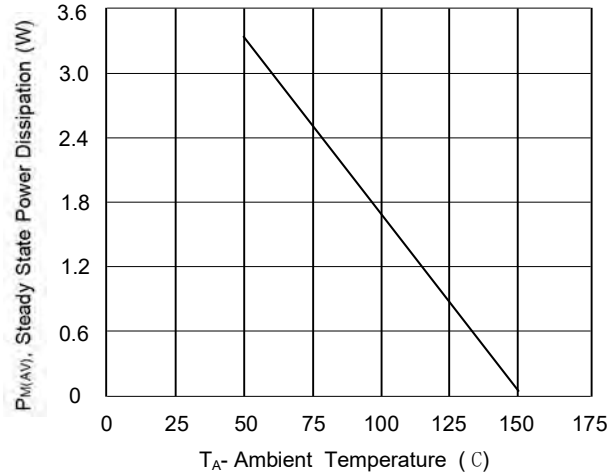
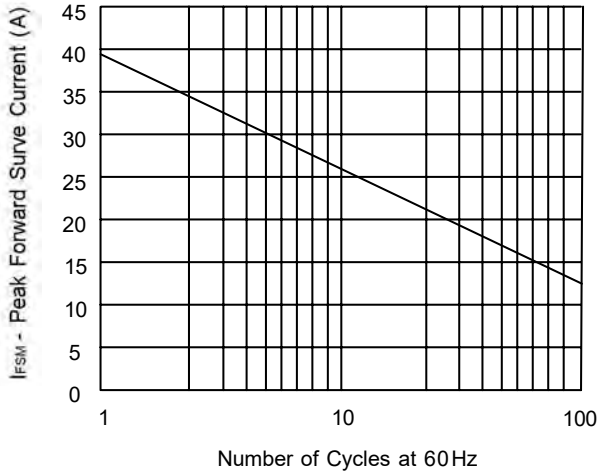
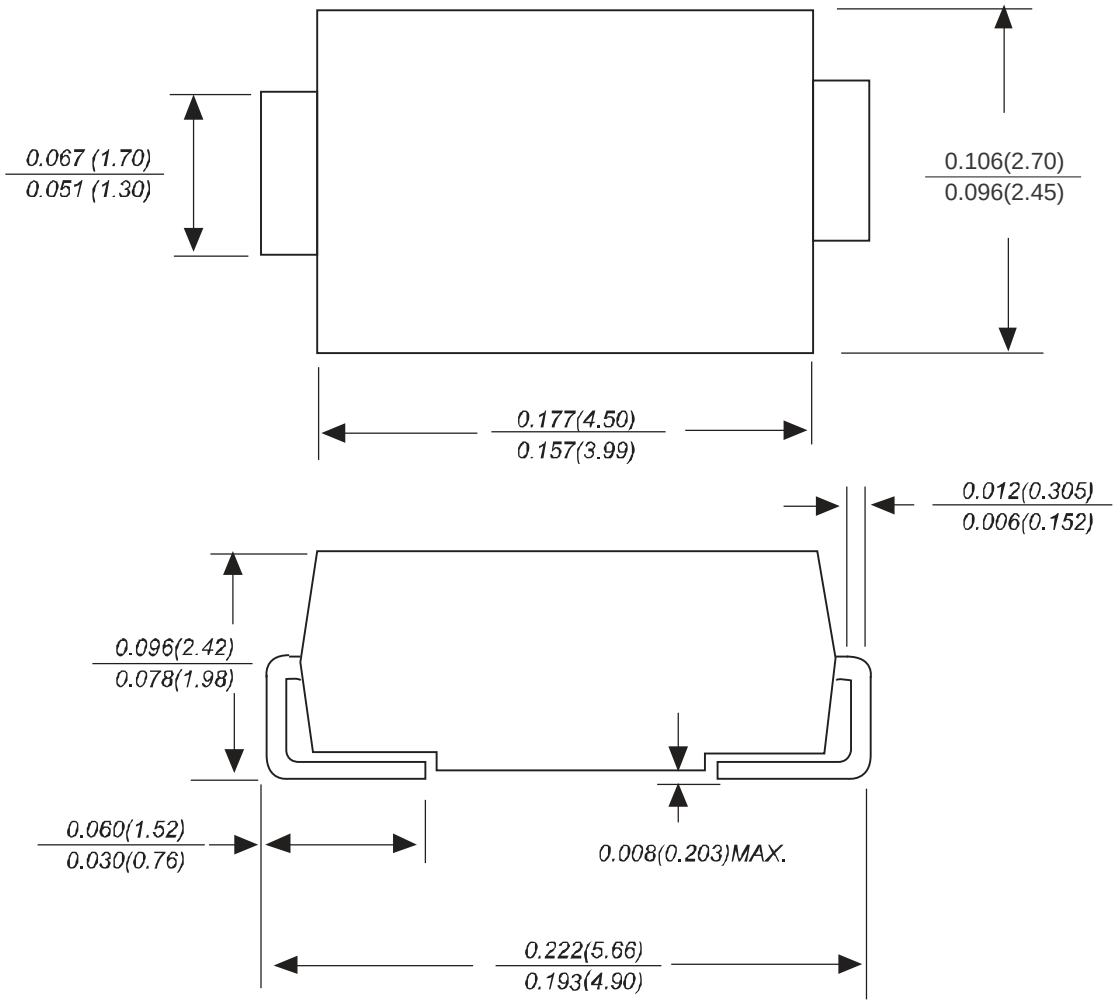


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



Package Outline Dimensions

SMA(DO-214AC)



Dimensions in inches and (millimeters)

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C4D08120E-TR C6D06065Q-TR E4D10120A MJD127G S4D15120H TPD1E0B04DPYR 1SMB5930BT3G 2N7002-HXY C3M0040120D IDL10G65C5XUMA2 ISL28233FUZ-T7 SG3525-HXY SGM3798YG/TR SS5150 HBAS40-05LT1G MSC040SMA120B4 Si2323DS-T1-E3-HXY TLV74318PDBVR-HXY BD237STU CH440G DMPH6250SQ-13 DSC06065 IRLML2244TRPBF-HXY MUR1040FCT S3D08065E TPS7A0533PDBZR-HXY AOD403-HXY 1SMB5934B ISL28133FHZ-T7 PTVSHC3D5VU