# SMAJ100(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) |
| SMAJ100A/TR13 | SMAJ100CA/TR13 | RZ | ZZ | 100.0 | 111.0-123.0 | 1 | 162.0 | 2.5 | 1 |

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

Figure 1. Peak Pulse Power Rating Curve

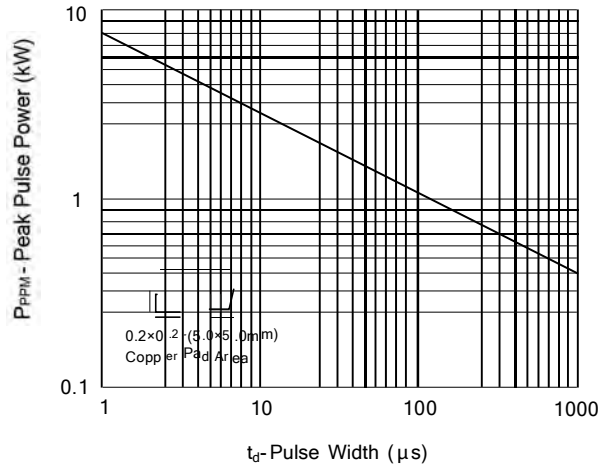



Figure 2. Pulse Derating Curve

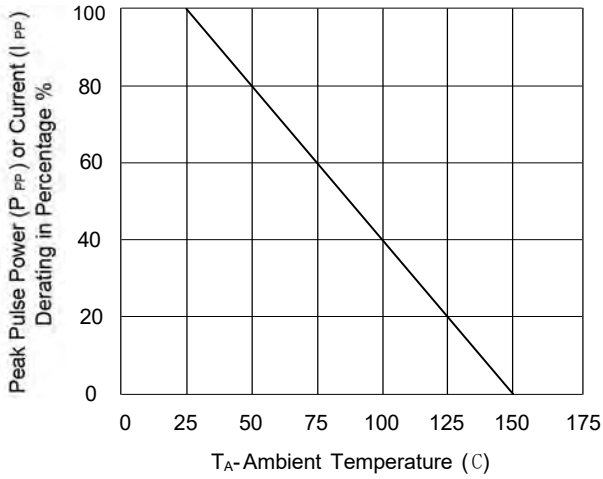



Figure 3. Pulse Waveform

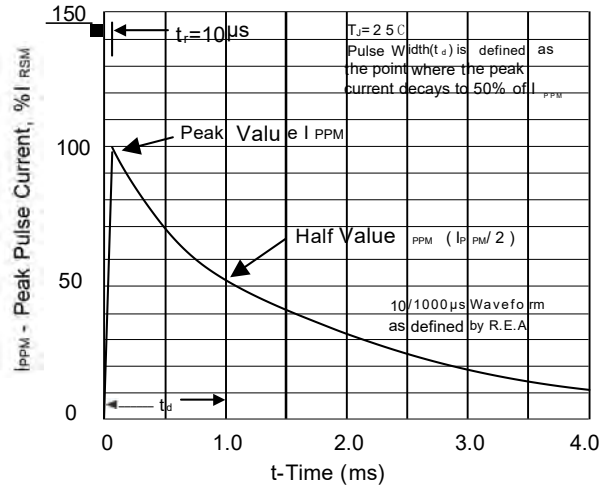



Figure 4. Typical Junction Capacitance

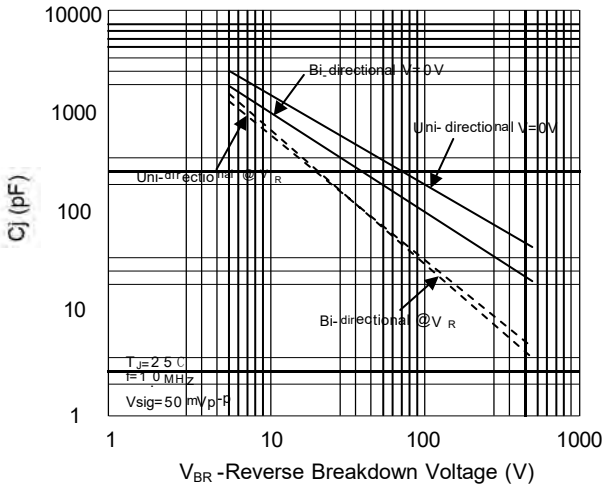



Figure 5. Steady State Power Dissipation Derating Curve

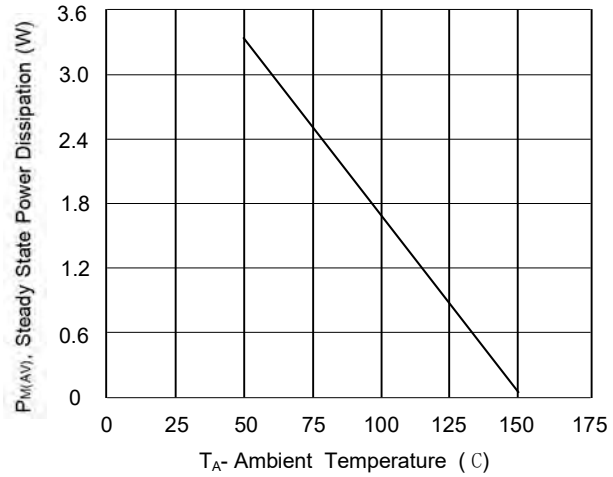
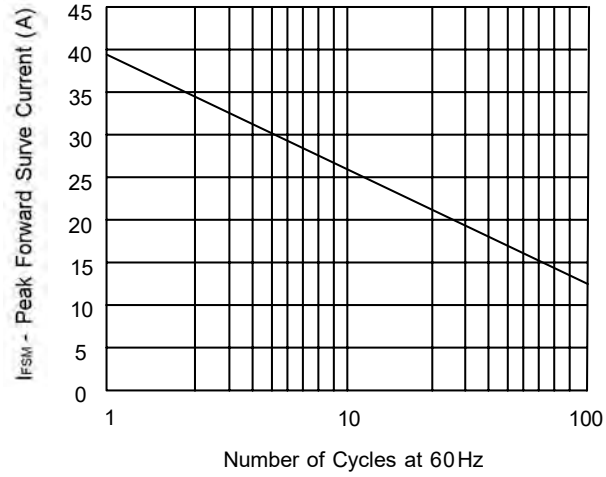
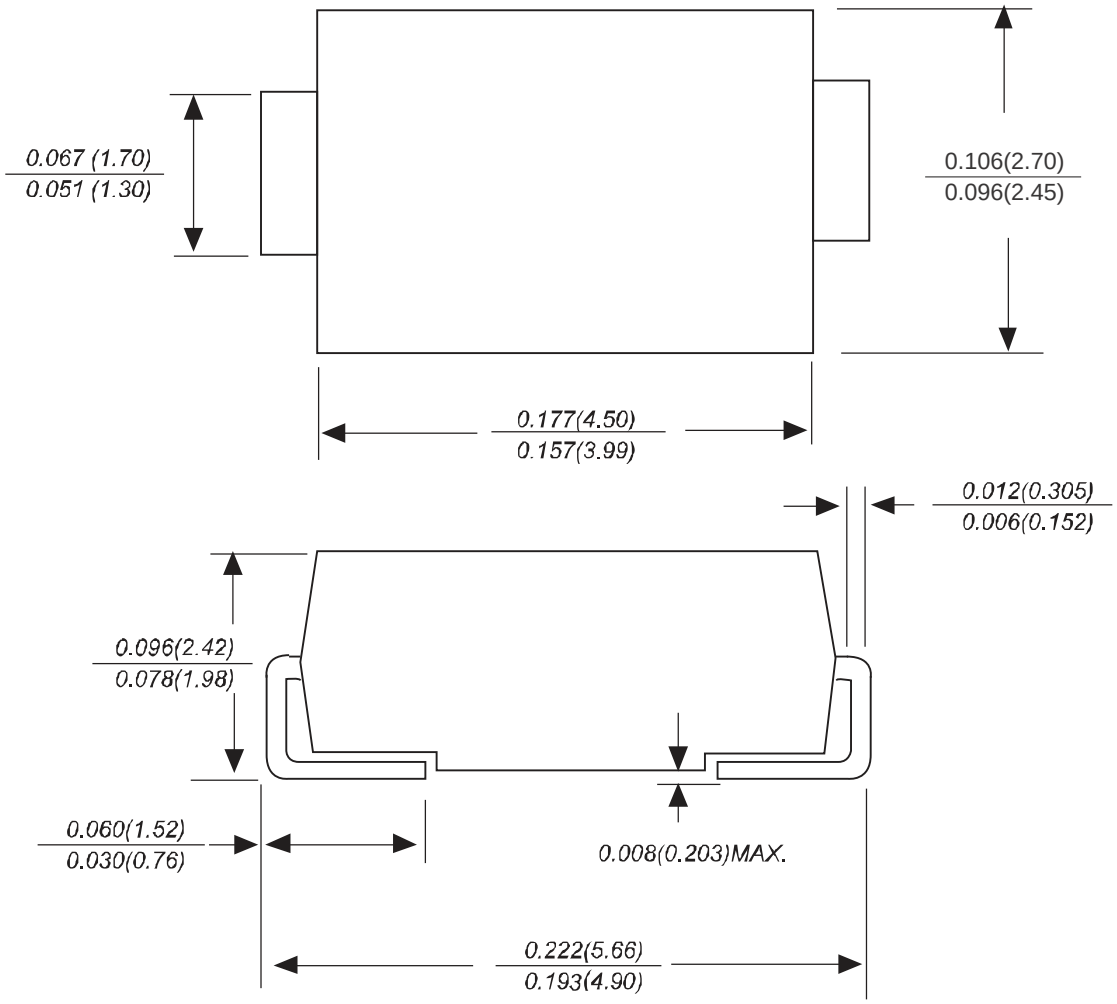



Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



## Package Outline Dimensions

SMA(DO-214AC)




*Dimensions in inches and (millimeters)*

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## HXY MOSFET:

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