Technical Data
Data Sheet N1806, Rev. A

# SMAJ440CA SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

SMA

## 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
- Repetition rate (duty cycle): 0.01%
- High temperature soldering: 250° C/10 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability Classification 94 V-O

## Mechanical Data

- Case: SMA Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD-750, Method 2026
- Mounting Position: Any
- Polarity: Bipolar
- Weight:0.064 grams(approx.)

## Maximum Ratings and Thermal Characteristics@$T_A$=25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Junction Temperature Range | $T_J$ | -65 to +150 | °C |
| Storage Temperature Range | $T_{STG}$ | -65 to +150 | °C |
| Peak Pulse Power (with 10/1000μs waveform) (Fig.1)(Note 1), (Note 2) | $P_{PPM}$ | 400 | W |
| Typical Thermal Resistance Junction to Lead | $R_{\theta JL}$ | 30 | °C/W |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 120 | °C/W |

Note: 1. Non-repetitive current pulse, per Fig.3 and derated above Ta=25 °C per Fig.2.
2. Mounted on Copper Pad area of 5.0x5.0 mm to each terminal.

## Ordering Information

| Device | Package | Shipping |
|---|---|---|
| SMAJ440CA | SMA (Pb-Free) | 5000pcs / reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

## Marking Diagram


Where XXXXX is YYWWL

UM = Marking code
YY = Year
WW = Week
L = Lot Number

**Cautions**: Molding resin
Epoxy resin UL:94V-0

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## Electrical Characteristics@$T_A$=25° C unless otherwise specified

| Part Number | Marking code | Reverse Stand off Voltage $V_R$ | Breakdown Voltage $V_{BR}$ (Volts) @ $I_T$ | | Test Current $I_T$ | Maximum Clamping Voltage $V_C$ @ Ipp | Maximum Peak Pulse Current Ipp | Maximum Reverse Leakage $I_R$ @$V_R$ |
|---|---|---|---|---|---|---|---|---|
| | | (Volts) | MIN. | MAX. | (mA) | (Volts) | (A) | (μA) |
| SMAJ440CA | UM | 440 | 492 | 543 | 1 | 713 | 0.6 | 5 |

## Ratings and Characteristics Curves

Fig. 1 - Peak Pulse Power Rating

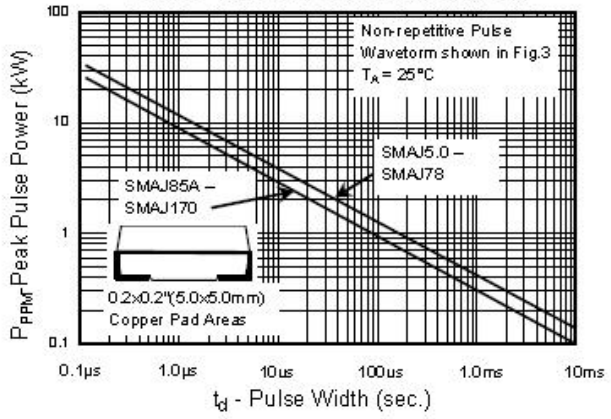


Fig.2 - Pulse Derating Curve

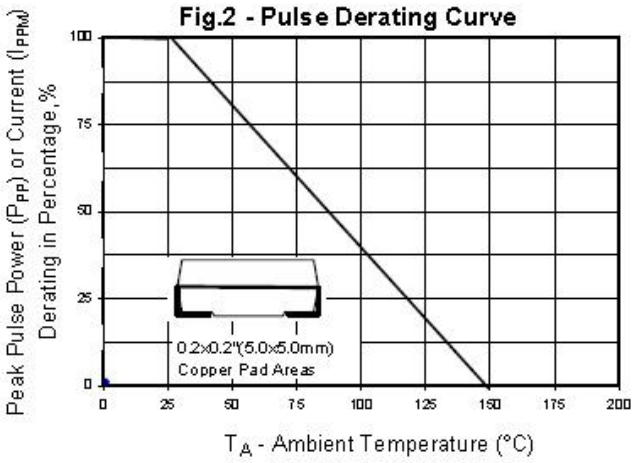


Fig.3 - Pulse Waveform

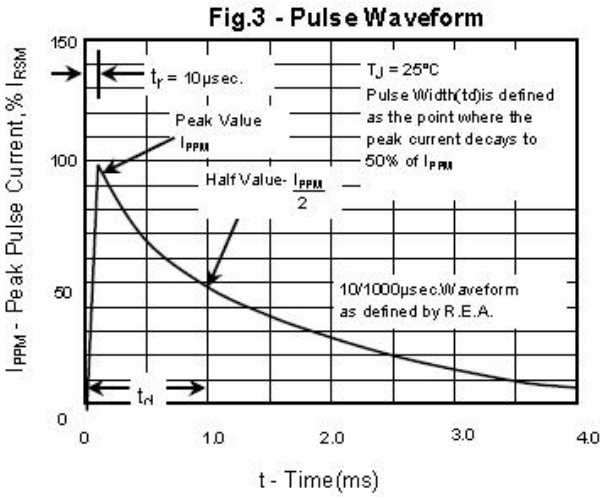


Fig.4 - Typical Junction Capacitance

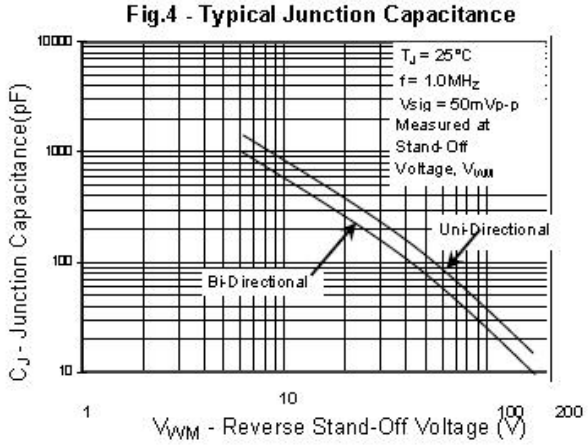

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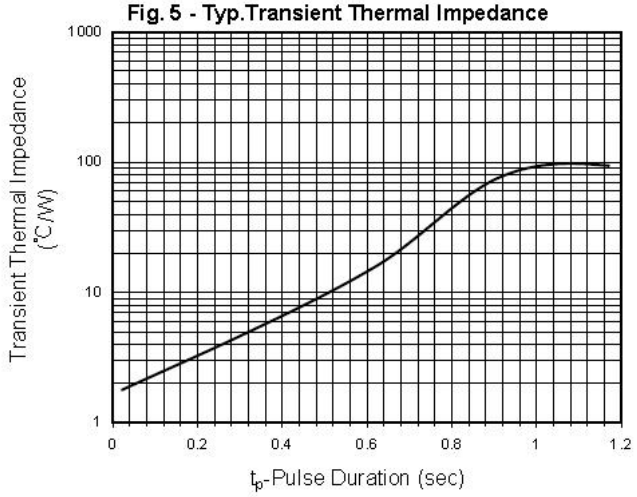
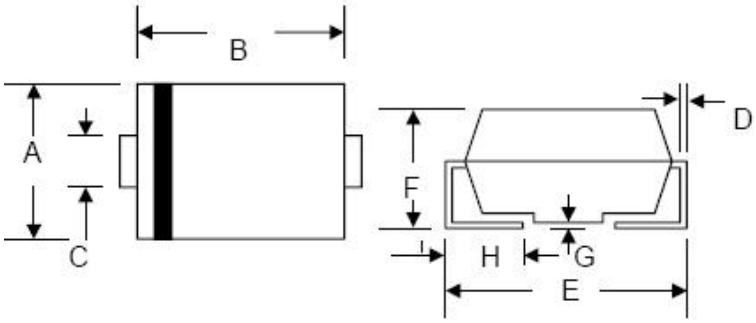
Fig. 5 - Typ.Transient Thermal Impedance

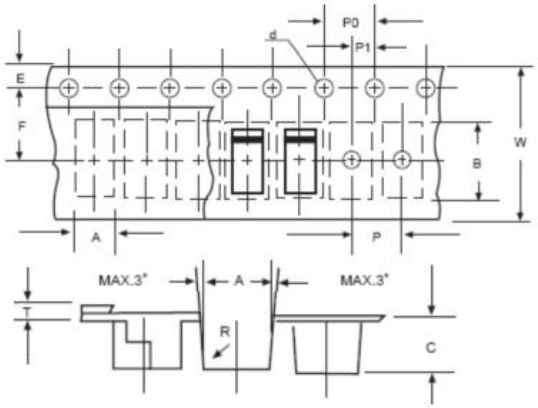



## Mechanical Dimensions SMA(Inches/Millimeters)




| | SMA/DO-214AC | | | |
|---|---|---|---|---|
| Dim. | Min. | Max. | Min. | Max. |
| A | 2.40 | 2.90 | 0.094 | 0.114 |
| B | 3.99 | 4.75 | 0.157 | 0.187 |
| C | 1.05 | 1.70 | 0.041 | 0.067 |
| D | 0.15 | 0.51 | 0.006 | 0.020 |
| E | 4.80 | 5.66 | 0.189 | 0.223 |
| F | 1.90 | 2.95 | 0.075 | 0.116 |
| G | 0.05 | 0.203 | 0.002 | 0.008 |
| H | 0.76 | 1.52 | 0.030 | 0.600 |
| | In mm | | In inch | |

## Carrier Tape Specification SMA




| SYMBOL | Millimeters | |
|---|---|---|
| | Min. | Max. |
| A | 2.97 | 3.17 |
| B | 5.70 | 5.90 |
| C | 2.32 | 2.52 |
| d | 1.40 | 1.60 |
| E | 1.40 | 1.60 |
| F | 5.60 | 5.70 |
| P | 3.90 | 4.10 |
| P0 | 3.90 | 4.10 |
| P1 | 1.90 | 2.10 |
| T | 0.25 | 0.35 |
| W | 11.80 | 12.20 |

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