

SMAJ5.0(C)A-T to SMAJ440(C)A-T

400Watts

Automotive Transient Voltage Suppressors

PROSEMI offers AEC-Q101 qualified TVS diode device is specially designed to protect sensitive electronic devices from lightning and other transient voltage induced voltage transient events.



Features

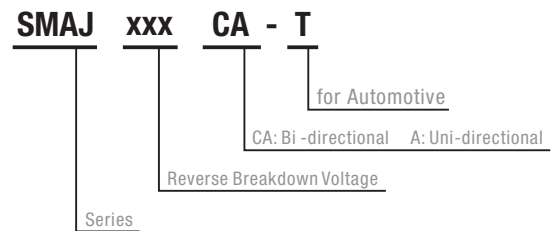
- Low profile package
- Very fast response time
- Unidirectional(A) and Bidirectional(CA) Protection
- AEC-Q101 qualified available
- Excellent Clamping Capability
- Glass Passivated Junction
- Built-in Strain relief



Applications

- I/O Interfaces
- Power lines
- Computers & Consumer Electronics
- Automotive and Telecommunication
- Industrial Electronics

Part Numbering System



Absolute Maximum Rating

| Rating | Symbol | Value | Units |
|---|------------------|--------------------------------|-------|
| Peak Pulse Power (tp =10/1000µs) (see Note1,2&3) | P _{PPM} | 400 | Watts |
| Peak pulse current (10/1000 µs) (see Note2&3) | I _{PPM} | See Electrical Characteristics | A |
| Peak Forward surge current (see Note4&5) | I _{FSM} | 40 | A |
| Power Dissipation on infinite heat sink T _A = 50 °C (Fig5) | P _D | 1.0 | W |
| Operating Junction Temperature range | T _J | -65 to + 150 | °C |
| Storage Temperature range | T _{STG} | -65 to + 150 | °C |

Note1: Peak Pulse Power Rating as Pulse Width ,perFig1.

Note2: Peak Pusle Power or Current Derated above T_A=25 °C Per Fig. 2 and Non-Repetitive Current Pulse,Per Fig.3.

Note3: Mounted on 5.0x5.0mm² copper pad to each terminal.

Note4: 8.3ms Single Half Sine Wave or Equivalent Square Wave

Note5: Maximum Forward Surge Current only for Unidirectional Device per Fig6.

Automotive Transient Voltage Suppressors

SMAJ5.0(C)A-T to SMAJ440(C)A-T

400Watts

Electrical Characteristics

| Part Number | | Marking | | Reverse Stand Off Voltage | Breakdown Voltage | | Test Current | Maximum Clamping Voltage | Maximum Peak Pulse Current | Maximum Reverse Leakage |
|-------------|-------------|---------|-----|---------------------------|----------------------|------|--------------|--------------------------|----------------------------|--------------------------|
| Uni | Bi | Uni | Bi | V_R (V) | V_{BR} (V) @ I_T | | I_T (mA) | V_C (V) @ I_{PP} | I_{PP} (A) | I_R (μ A) @ V_R |
| | | | | | Min. | Max. | | | | |
| SMAJ5.0A-T | SMAJ5.0CA-T | AET | WET | 5 | 6.4 | 7 | 10 | 9.2 | 43.5 | 800 |
| SMAJ6.0A-T | SMAJ6.0CA-T | AGT | WGT | 6 | 6.67 | 7.37 | 10 | 10.3 | 38.8 | 800 |
| SMAJ6.5A-T | SMAJ6.5CA-T | AKT | WKT | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 35.7 | 500 |
| SMAJ7.0A-T | SMAJ7.0CA-T | AMT | WMT | 7 | 7.78 | 8.6 | 10 | 12 | 33.3 | 200 |
| SMAJ7.5A-T | SMAJ7.5CA-T | APT | WPT | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 31 | 100 |
| SMAJ8.0A-T | SMAJ8.0CA-T | ART | WRT | 8 | 8.89 | 9.83 | 1 | 13.6 | 29.4 | 50 |
| SMAJ8.5A-T | SMAJ8.5CA-T | ATT | WTT | 8.5 | 9.44 | 10.4 | 1 | 14.4 | 27.8 | 20 |
| SMAJ9.0A-T | SMAJ9.0CA-T | AVT | WVT | 9 | 10 | 11.1 | 1 | 15.4 | 26 | 10 |
| SMAJ10A-T | SMAJ10CA-T | AXT | WXT | 10 | 11.1 | 12.3 | 1 | 17 | 23.5 | 5 |
| SMAJ11A-T | SMAJ11CA-T | AZT | WZT | 11 | 12.2 | 13.5 | 1 | 18.2 | 22 | 1 |
| SMAJ12A-T | SMAJ12CA-T | BET | XET | 12 | 13.3 | 14.7 | 1 | 19.9 | 20.1 | 1 |
| SMAJ13A-T | SMAJ13CA-T | BGT | XGT | 13 | 14.4 | 15.9 | 1 | 21.5 | 18.6 | 1 |
| SMAJ14A-T | SMAJ14CA-T | BKT | XKT | 14 | 15.6 | 17.2 | 1 | 23.2 | 17.2 | 1 |
| SMAJ15A-T | SMAJ15CA-T | BMT | XMT | 15 | 16.7 | 18.5 | 1 | 24.4 | 16.4 | 1 |
| SMAJ16A-T | SMAJ16CA-T | BPT | XPT | 16 | 17.8 | 19.7 | 1 | 26 | 15.4 | 1 |
| SMAJ17A-T | SMAJ17CA-T | BRT | XRT | 17 | 18.9 | 20.9 | 1 | 27.6 | 14.5 | 1 |
| SMAJ18A-T | SMAJ18CA-T | BTT | XTT | 18 | 20 | 22.1 | 1 | 29.2 | 13.7 | 1 |
| SMAJ20A-T | SMAJ20CA-T | BVT | XVT | 20 | 22.2 | 24.5 | 1 | 32.4 | 12.3 | 1 |
| SMAJ22A-T | SMAJ22CA-T | BXT | XXT | 22 | 24.4 | 26.9 | 1 | 35.5 | 11.3 | 1 |
| SMAJ24A-T | SMAJ24CA-T | BZT | XZT | 24 | 26.7 | 29.5 | 1 | 38.9 | 10.3 | 1 |
| SMAJ26A-T | SMAJ26CA-T | CET | YET | 26 | 28.9 | 31.9 | 1 | 42.1 | 9.5 | 1 |
| SMAJ28A-T | SMAJ28CA-T | CGT | YGT | 28 | 31.1 | 34.4 | 1 | 45.4 | 8.8 | 1 |
| SMAJ30A-T | SMAJ30CA-T | CKT | YKT | 30 | 33.3 | 36.8 | 1 | 48.4 | 8.3 | 1 |
| SMAJ33A-T | SMAJ33CA-T | CMT | YMT | 33 | 36.7 | 40.6 | 1 | 53.3 | 7.5 | 1 |
| SMAJ36A-T | SMAJ36CA-T | CPT | YPT | 36 | 40 | 44.2 | 1 | 58.1 | 6.9 | 1 |
| SMAJ40A-T | SMAJ40CA-T | CRT | YRT | 40 | 44.4 | 49.1 | 1 | 64.5 | 6.2 | 1 |
| SMAJ43A-T | SMAJ43CA-T | CTT | YTT | 43 | 47.8 | 52.8 | 1 | 69.4 | 5.8 | 1 |
| SMAJ45A-T | SMAJ45CA-T | CVT | YVT | 45 | 50 | 55.3 | 1 | 72.7 | 5.5 | 1 |
| SMAJ48A-T | SMAJ48CA-T | CXT | YXT | 48 | 53.3 | 58.9 | 1 | 77.4 | 5.2 | 1 |
| SMAJ51A-T | SMAJ51CA-T | CZT | YZT | 51 | 56.7 | 62.7 | 1 | 82.4 | 4.9 | 1 |
| SMAJ54A-T | SMAJ54CA-T | RET | ZET | 54 | 60 | 66.3 | 1 | 87.1 | 4.6 | 1 |
| SMAJ58A-T | SMAJ58CA-T | RGT | ZGT | 58 | 64.4 | 71.2 | 1 | 93.6 | 4.3 | 1 |
| SMAJ60A-T | SMAJ60CA-T | RKT | ZKT | 60 | 66.7 | 73.7 | 1 | 96.8 | 4.1 | 1 |
| SMAJ64A-T | SMAJ64CA-T | RMT | ZMT | 64 | 71.1 | 78.6 | 1 | 103 | 3.9 | 1 |
| SMAJ70A-T | SMAJ70CA-T | RPT | ZPT | 70 | 77.8 | 86 | 1 | 113 | 3.5 | 1 |
| SMAJ75A-T | SMAJ75CA-T | RRT | ZRT | 75 | 83.3 | 92.1 | 1 | 121 | 3.3 | 1 |
| SMAJ78A-T | SMAJ78CA-T | RTT | ZTT | 78 | 86.7 | 95.8 | 1 | 126 | 3.2 | 1 |
| SMAJ85A-T | SMAJ85CA-T | RVT | ZVT | 85 | 94.4 | 104 | 1 | 137 | 2.9 | 1 |
| SMAJ90A-T | SMAJ90CA-T | RXT | ZXT | 90 | 100 | 111 | 1 | 146 | 2.7 | 1 |
| SMAJ100A-T | SMAJ100CA-T | RZT | ZZT | 100 | 111 | 123 | 1 | 162 | 2.5 | 1 |

Automotive Transient Voltage Suppressors

SMAJ5.0(C)A-T to SMAJ440(C)A-T

400Watts

Electrical Characteristics (continued)

| Part Number | | Marking | | Reverse Stand Off Voltage | Breakdown Voltage | | Test Current | Maximum Clamping Voltage | Maximum Peak Pulse Current | Maximum Reverse Leakage |
|-------------|-------------|---------|-----|---------------------------|----------------------|------|--------------|--------------------------|----------------------------|--------------------------|
| Uni | Bi | Uni | Bi | V_R (V) | V_{BR} (V) @ I_T | | I_T (mA) | V_C (V) @ I_{PP} | I_{PP} (A) | I_R (μ A) @ V_R |
| | | | | | Min. | Max. | | | | |
| SMAJ110A-T | SMAJ110CA-T | SET | VET | 110 | 122 | 135 | 1 | 177 | 2.3 | 1 |
| SMAJ120A-T | SMAJ120CA-T | SGT | VGT | 120 | 133 | 147 | 1 | 193 | 2.1 | 1 |
| SMAJ130A-T | SMAJ130CA-T | SKT | VKT | 130 | 144 | 159 | 1 | 209 | 1.9 | 1 |
| SMAJ150A-T | SMAJ150CA-T | SMT | VMT | 150 | 167 | 185 | 1 | 243 | 1.6 | 1 |
| SMAJ160A-T | SMAJ160CA-T | SPT | VPT | 160 | 178 | 197 | 1 | 259 | 1.5 | 1 |
| SMAJ170A-T | SMAJ170CA-T | SRT | VRT | 170 | 189 | 209 | 1 | 275 | 1.5 | 1 |
| SMAJ180A-T | SMAJ180CA-T | STT | VTT | 180 | 201 | 222 | 1 | 292 | 1.4 | 1 |
| SMAJ190A-T | SMAJ190CA-T | SUT | YUT | 190 | 209 | 243 | 1 | 308 | 1.3 | 1 |
| SMAJ200A-T | SMAJ200CA-T | SVT | VVT | 200 | 224 | 247 | 1 | 324 | 1.2 | 1 |
| SMAJ220A-T | SMAJ220CA-T | SXT | VXT | 220 | 246 | 272 | 1 | 356 | 1.1 | 1 |
| SMAJ250A-T | SMAJ250CA-T | SZT | VZT | 250 | 279 | 309 | 1 | 405 | 1 | 1 |
| SMAJ300A-T | SMAJ300CA-T | TET | UET | 300 | 335 | 371 | 1 | 486 | 0.8 | 1 |
| SMAJ350A-T | SMAJ350CA-T | TGT | UGT | 350 | 391 | 432 | 1 | 567 | 0.7 | 1 |
| SMAJ400A-T | SMAJ400CA-T | TKT | UKT | 400 | 447 | 494 | 1 | 648 | 0.6 | 1 |
| SMAJ440A-T | SMAJ440CA-T | TMT | UMT | 440 | 492 | 543 | 1 | 713 | 0.6 | 1 |

Automotive Transient Voltage Suppressors

SMAJ5.0(C)A-T to SMAJ440(C)A-T

400Watts

Typical Characteristics

Figure 1: Peak Pulse Power Rating Curve

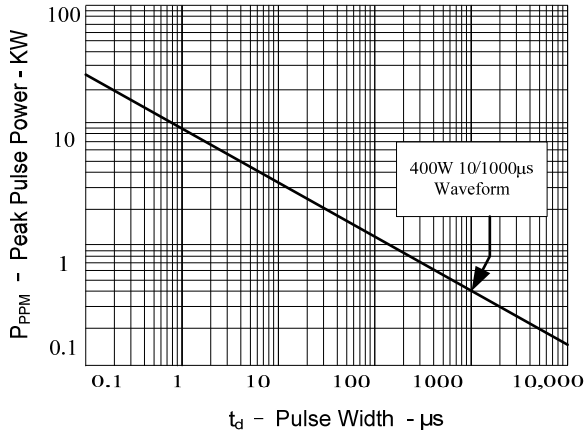


Figure 2: Pulse Derating Curve

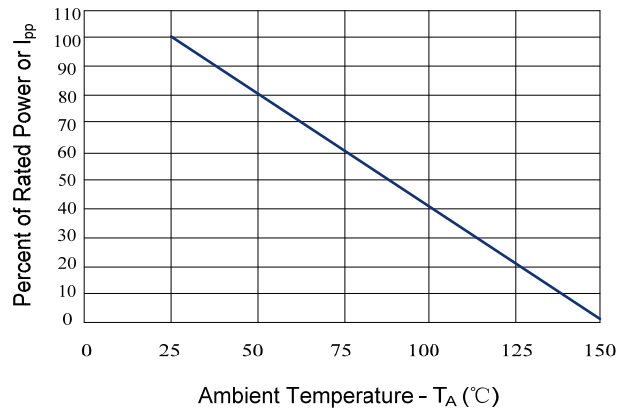


Figure 3: Pulse Waveform

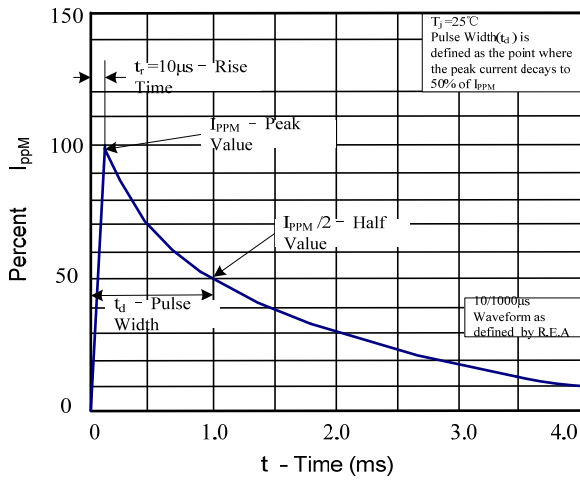


Figure 4: Typical Junction Capacitance

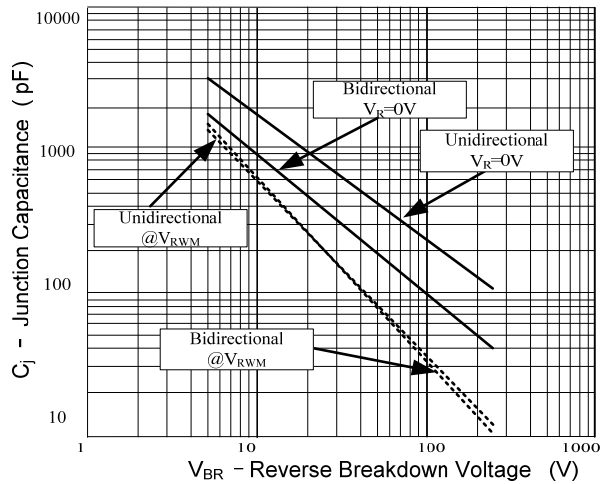


Figure 5: Steady State Power Dissipation Derating Curve

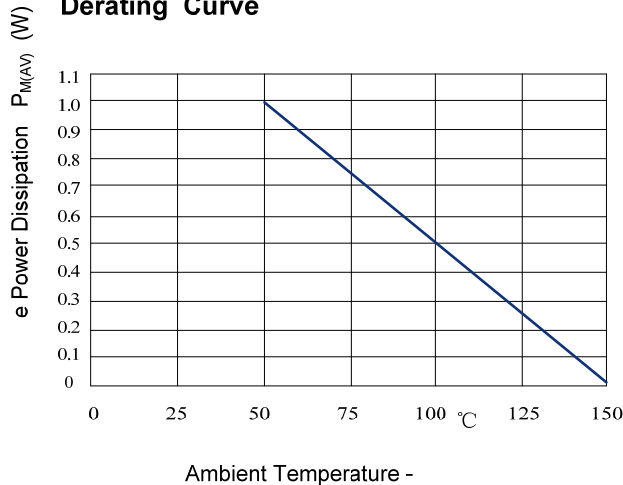
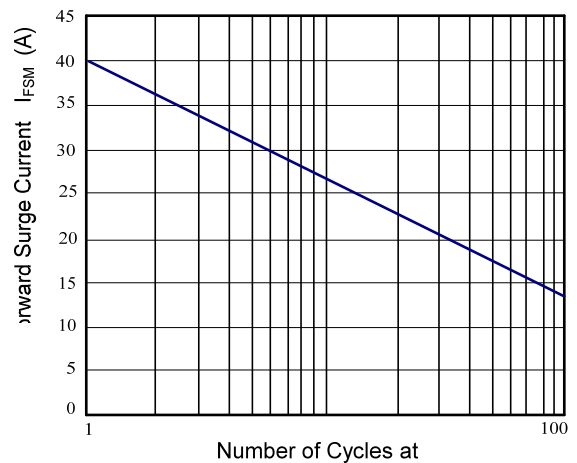


Figure 6: Maximum Non-Repetitive Forward Surge Current Only Unidirectional

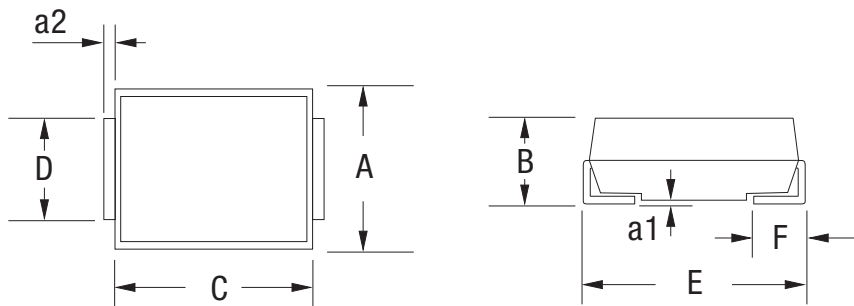


Automotive Transient Voltage Suppressors

SMAJ5.0(C)A-T to SMAJ440(C)A-T

400Watts

Dimension (Unit: mm)



| A | | B | | C | | D | | E | | F | | a1 | | a2 | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| 2.500 | 2.800 | 1.900 | 2.450 | 3.900 | 4.600 | 1.400 | 1.800 | 4.800 | 5.280 | 0.760 | 1.520 | - | 0.203 | 0.145 | 0.255 |

Packaging

- Quantity: 5,000pcs
- 12mm wide tape on 330mm(13 inch) diameter reel –specification EIA Standard 481.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:

Click to view products by [PROSEMI](#) manufacturer:

Other Similar products are found below :

[60KS200C](#) [D18V0L1B2LP-7B](#) [D5V0F4U5P5-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#) [P6KE39CA-TP](#) [P6KE8.2A](#) [JANTX1N6053A](#)
[SA110CA](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#) [SMBJ33CATR](#) [SMBJ8.0A](#) [ESD101-B1-02ELS E6327](#) [ESD105-B1-02EL E6327](#) [ESD112-B1-02EL E6327](#) [ESD119B1W01005E6327XTSA1](#) [ESD5V0L1B02VH6327XTSA1](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-HF](#)
[3.0SMCJ33CA-F](#) [3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [JANTX1N6126A](#) [JANTX1N6462](#) [JANTX1N6465](#) [USB50805e3/TR7](#)
[D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [DRTR5V0U4SL-7](#) [SCM1293A-04SO](#) [ESD200-B1-CSP0201 E6327](#) [SM12-7](#) [SM1605E3/TR13](#)
[SMLJ45CA-TP](#) [CEN955 W/DATA](#) [82350120560](#) [VESD12A1A-HD1-GS08](#) [CPDUR5V0R-HF](#) [CPDQC5V0U-HF](#) [CPDQC5V0USP-HF](#)
[CPDQC5V0-HF](#) [D1213A-01LP4-7B](#) [ESD101-B1-02EL E6327](#) [824500181](#) [MMAD1108/TR13](#) [5KP100A](#)