

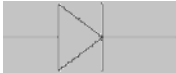
## Surface Mount Transient Voltage Suppressors



### Features

- Optimized glass passivated chip
- $T_J = 175\text{ }^\circ\text{C}$  capability suitable for high reliability and automotive requirement
- 3600 W peak pulse power capability with a 10/1000  $\mu\text{s}$  waveform, repetitive rate (duty cycle):0.01 %
- Meet ISO 7637-2 5a/5b and ISO 16750 load dump test (varied by test condition)
- Part no. with suffix "Q" means AEC-Q101 qualified
- Low leakage current
- Low forward voltage drop
- Uni-directional polarity
- Excellent clamping capability
- Very fast response time
- RoHS compliant

### Uni-directional



### Bi-directional



### Mechanical Data

- Package:** DO-218AB
- Molding compound:** UL94V-0 flammability
- Polarity:** Heatsink is anode

### Maximum Ratings ( $T_a=25$ Unless otherwise specified)

| PARAMETER  | SYMBOL         | UNIT             | Value          |
|--|----------------|------------------|----------------|
| Peak power dissipation with a 10/1000 $\mu\text{s}$ waveform(1)            | $P_{PP}$       | W                | 3600           |
| Peak power dissipation with a 10/10,000 $\mu\text{s}$ waveform             | $P_{PP}$       | W                | 2800           |
| Peak pulse current with a 10/1000 $\mu\text{s}$ waveform(1)                | $I_{PP}$       | A                | See Next Table |
| Power dissipation on infinite heatsink at $T_L = 25\text{ }^\circ\text{C}$ | $P_D$          | W                | 5.0            |
| Peak forward surge current 8.3 ms single half sine-wave                    | $I_{FSM}$      | A                | 500            |
| Operating junction and storage temperature range                           | $T_J, T_{STG}$ | $^\circ\text{C}$ | - 55 to +175   |

#### Note:

(1) Non-repetitive current pulse per Fig.2 and derated above  $T_A = 25\text{ }^\circ\text{C}$  per FIG.1



# SM5S10AQ THRU SM5S16AQ

Thermal Characteristics  $T_a=25$  Unless otherwise specified

| Part Number |           | Breakdown Voltage VBR @IT |         |         | Maximum Reverse Leakage IR @ $V_{RWM}$ (uA) | Maximum IR @VRWM $T_j=175$ (uA) | Peak Forward Current $I_{FM}$ (mA) | Peak Forward Voltage $V_{FM}$ (V) |
|-------------|-----------|---------------------------|---------|---------|---|---------------------------------|------------------------------------|-----------------------------------|
|             |           | Min (V)                   | Max (V) | IT (mA) |   |                                 |                                    |                                   |
| SM5S10AQ    | SM5S10CAQ | 11.1                      | 12.3    | 5.0     | 15  | 250                             | 10                                 |                                   |
| SM5S11AQ    | SM5S11CAQ | 12.2                      | 13.5    | 5.0     | 10  | 150                             | 11                                 |                                   |
| SM5S12AQ    | SM5S12CAQ | 13.3                      | 14.7    | 5.0     | 10  | 150                             | 12                                 |                                   |
| SM5S13AQ    | SM5S13CAQ | 14.4                      | 15.9    | 5.0     | 10  | 150                             | 13                                 |                                   |
| SM5S14AQ    | SM5S14CAQ | 15.6                      | 17.2    | 5.0     | 10  | 150                             | 14                                 |                                   |
| SM5S15AQ    | SM5S15CAQ | 16.7                      | 18.5    | 5.0     | 10  | 150                             | 15                                 |                                   |
| SM5S16AQ    | SM5S16CAQ | 17.8                      | 19.7    | 5.0     | 10  | 150                             | 16                                 |                                   |
|             |           |                           |         |         |   |                                 | 130                                |                                   |
|             |           |                           |         |         |   |                                 | 123                                |                                   |
|             |           |                           |         |         |   |                                 | 111                                |                                   |
|             |           |                           |         |         |   |                                 | 101                                |                                   |
|             |           |                           |         |         |   |                                 | 93                                 |                                   |
|             |           |                           |         |         |   |                                 | 86                                 |                                   |
|             |           |                           |         |         |   |                                 | 79                                 |                                   |
|             |           |                           |         |         |   |                                 | 74                                 |                                   |
|             |           |                           |         |         |   |                                 | 68                                 |                                   |
|             |           |                           |         |         |   |                                 | 53.3                               |                                   |
|             |           |                           |         |         |   |                                 | 22                                 |                                   |



# SM5S10AQ THRU SM5S43CAQ

## Characteristics (Typical)

FIG.1 Pulse Derating Curve

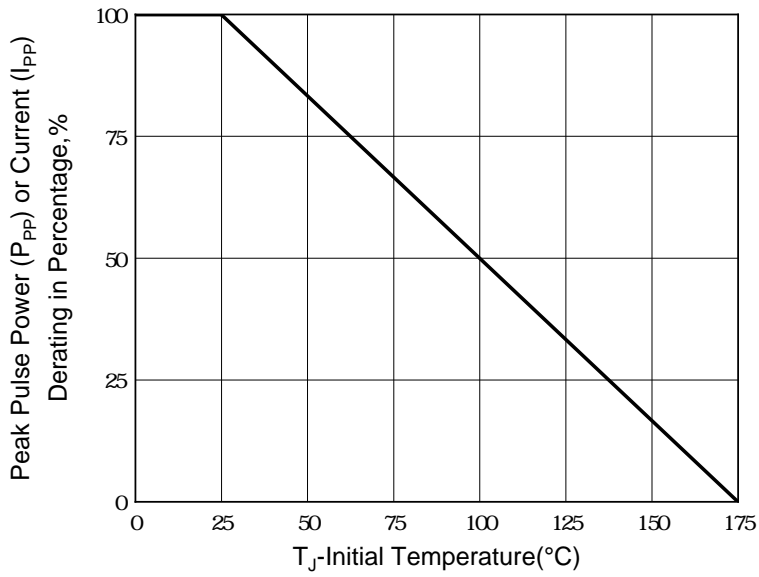


FIG.2 Pulse Waveform

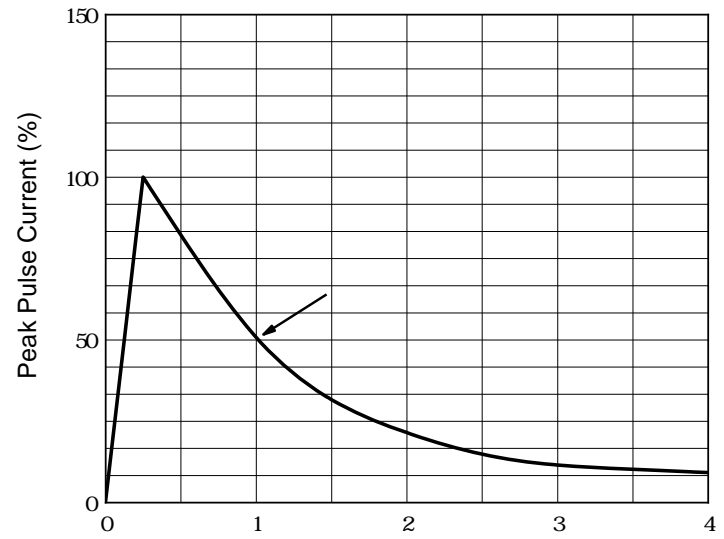
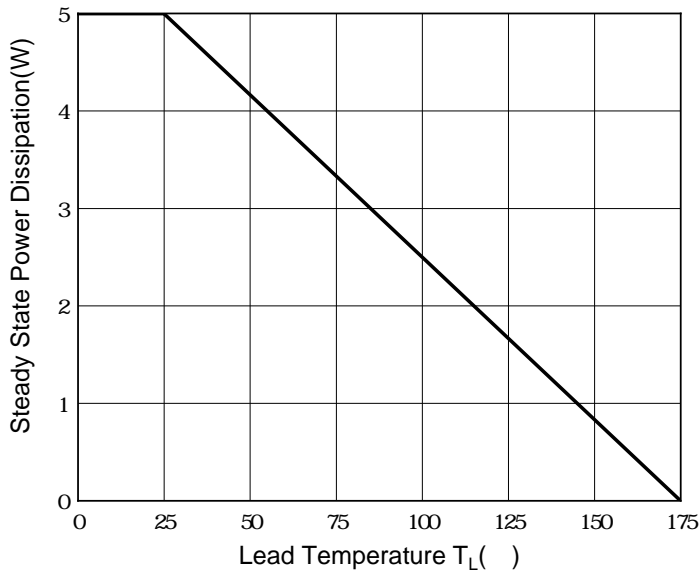


FIG.3 Steady State Power Derating Curve





## SM5S10AQ THRU SM5S43CAQ

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### Ordering Information (Example)

| PREFERED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM |
|--------------|--------------|----------------|---------|
|--------------|--------------|----------------|---------|



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