

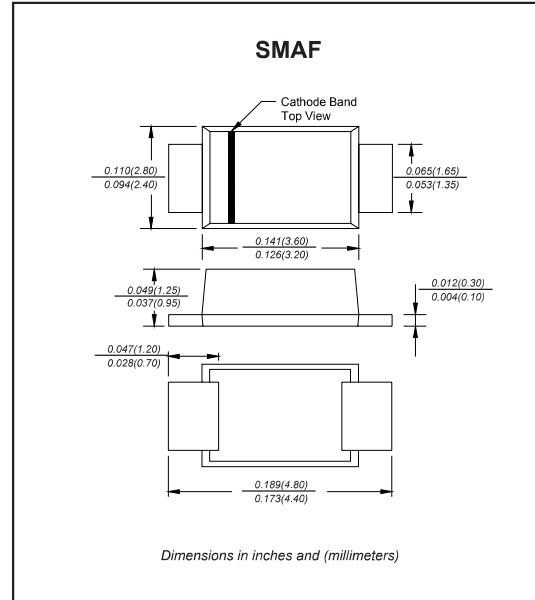
### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 250°C/10 seconds at terminals
- ◆ Compliant to RoHS Directive 2011/65/EU
- ◆ Compliant to Halogen-free
- ◆ Suffix "-Q1" for AEC-Q101

### Mechanical data

- ◆ **Case:** JEDEC SMAF molded plastic body
- ◆ **Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026
- ◆ **Polarity:** Color band denotes cathode end
- ◆ **Mounting Position:** Any

### Package outline



### Maximum ratings and Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER                  | CONDITIONS                                  | Symbol                           | MIN. | TYP. | MAX. | UNIT                      |
|----------------------------|---|----------------------------------|------|------|------|---------------------------|
| Forward rectified current  | See Fig.1                                   | $I_O$                            |      |      | 3.0  | A                         |
| Forward surge current      | 8.3ms single half sine-wave (JEDEC methode) | $I_{FSM}$                        |      |      | 80   | A                         |
| Reverse current            | $T_A = 25^\circ\text{C}$                    | $V_R = 20\text{V} - 60\text{V}$  |      |      | 0.5  | mA                        |
|                            |   | $V_R = 80\text{V} - 200\text{V}$ |      |      | 0.1  |                           |
| Reverse current            | $T_A = 100^\circ\text{C}$                   | $V_R = 20\text{V} - 60\text{V}$  |      |      | 10   | mA                        |
|                            |   | $V_R = 80\text{V} - 200\text{V}$ |      |      | 5    |                           |
| Thermal resistance         | Junction to ambient<br>NOTE 1               | $R_{\theta JA}$                  |      | 55   |      | $^\circ\text{C}/\text{W}$ |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse voltage    | $C_j$                            |      | 500  |      | pF                        |
| Storage temperature        |   | $T_{STG}$                        | -65  |      | +150 | $^\circ\text{C}$          |

**Note:** 1.P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas

| SYMBOLS    | $V_{RRM}^{*1}$<br>(V) | $V_{RMS}^{*2}$<br>(V) | $V_R^{*3}$<br>(V) | $V_F^{*4}$<br>(V) | Operating temperature<br>$T_J$ , ( $^\circ\text{C}$ ) |
|------------|-----------------------|-----------------------|-------------------|-------------------|---|
| SS32-F-Q1  | 20                    | 14                    | 20                | 0.55              | -55 to +150   |
| SS34-F-Q1  | 40                    | 28                    | 40                |                   |   |
| SS345-F-Q1 | 45                    | 32                    | 45                |                   |   |
| SS35-F-Q1  | 50                    | 35                    | 50                | 0.70              |   |
| SS36-F-Q1  | 60                    | 42                    | 60                | 0.85              |   |
| SS38-F-Q1  | 80                    | 56                    | 80                |                   |   |
| SS310-F-Q1 | 100                   | 70                    | 100               |                   |   |
| SS315-F-Q1 | 150                   | 105                   | 150               | 0.92              |   |
| SS320-F-Q1 | 200                   | 140                   | 200               |                   |   |

\*1 Repetitive peak reverse voltage

\*2 RMS voltage

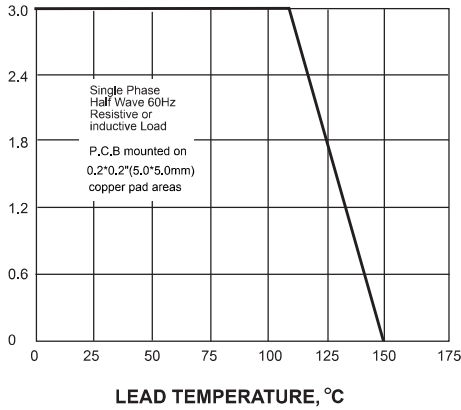
\*3 Continuous reverse voltage

\*4 Maximum forward voltage@ $I_F=3.0\text{A}$

### Rating and characteristic curves

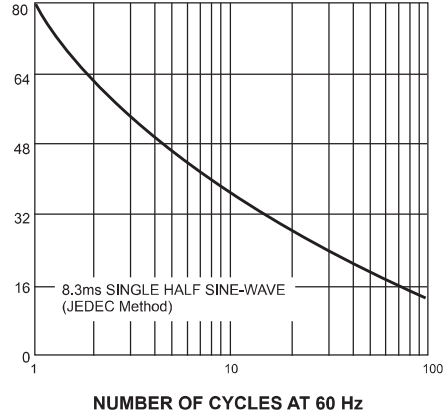
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



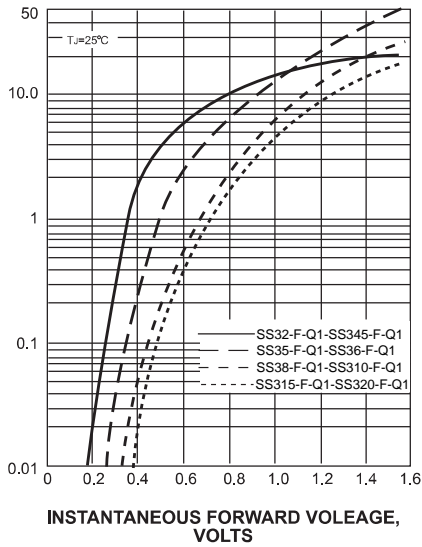
PEAK FORWARD SURGE CURRENT, AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



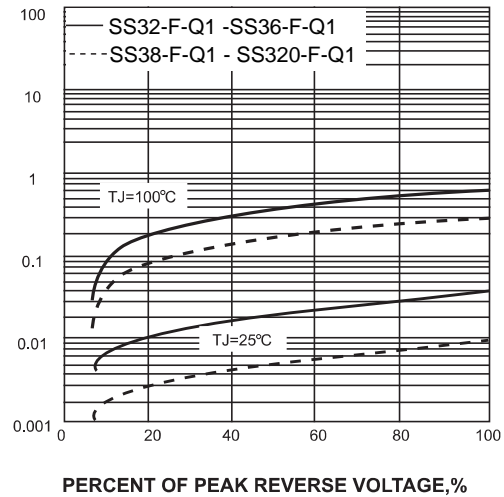
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



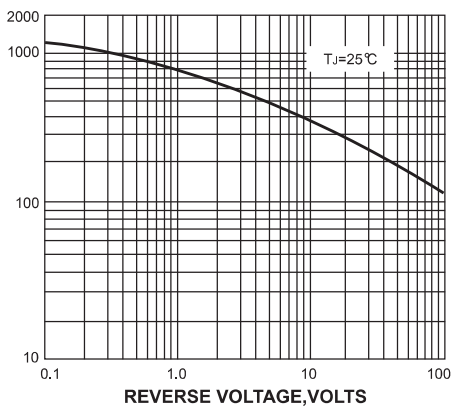
INSTANTANEOUS REVERSE CURRENT, MILLIAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



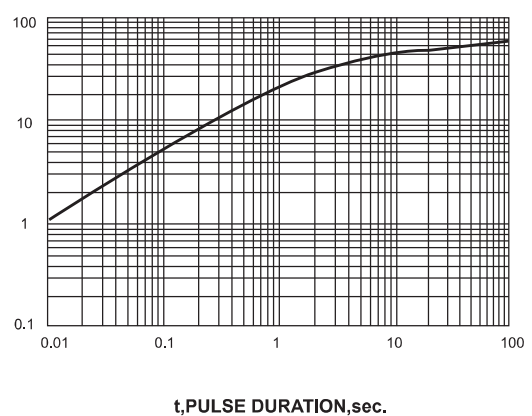
JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE

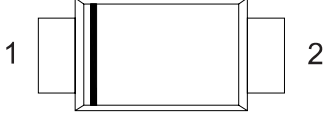



TRANSIENT THERMAL IMPEDANCE, °C/W

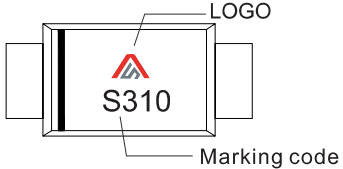
FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



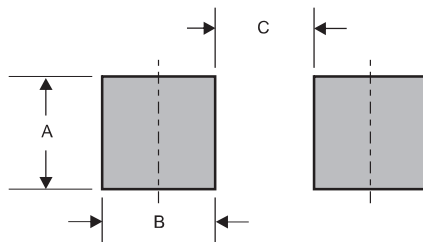
### Pinning information

| Pin                        | Simplified outline  | Symbol  |
|----------------------------|---|---|
| Pin1 cathode<br>Pin2 anode |  |  |

### Marking

| Type number | Marking code | Example  |
|-------------|--------------|--|
| SS32-F-Q1   | S32          |  |
| SS34-F-Q1   | S34          |  |
| SS345-F-Q1  | S345         |  |
| SS35-F-Q1   | S35          |  |
| SS36-F-Q1   | S36          |  |
| SS38-F-Q1   | S38          |  |
| SS310-F-Q1  | S310         |  |
| SS315-F-Q1  | S315         |  |
| SS320-F-Q1  | S320         |  |

### Suggested solder pad layout



Dimensions in inches and (millimeters)

| PACKAGE | A            | B            | C            |
|---------|--------------|--------------|--------------|
| SMAF    | 0.110 (2.80) | 0.063 (1.60) | 0.087 (2.20) |