

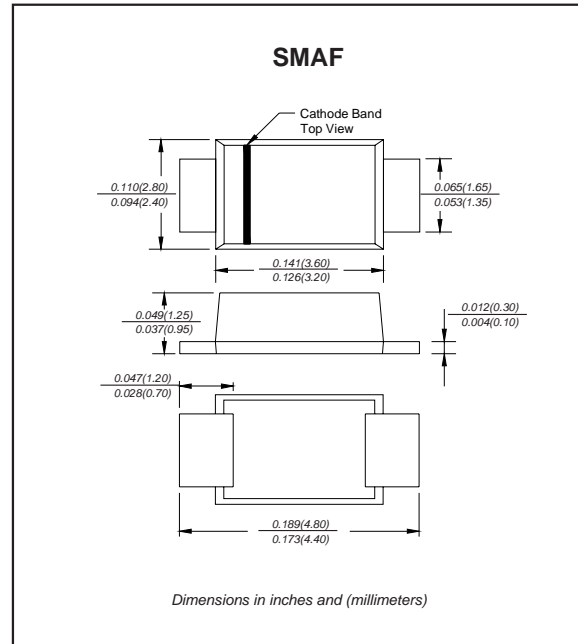
Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Super fast switching for high efficiency
- ◆ Low reverse leakage
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 250°C/10 seconds at terminals
- ◆ Glass passivated chip junction
- ◆ 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)

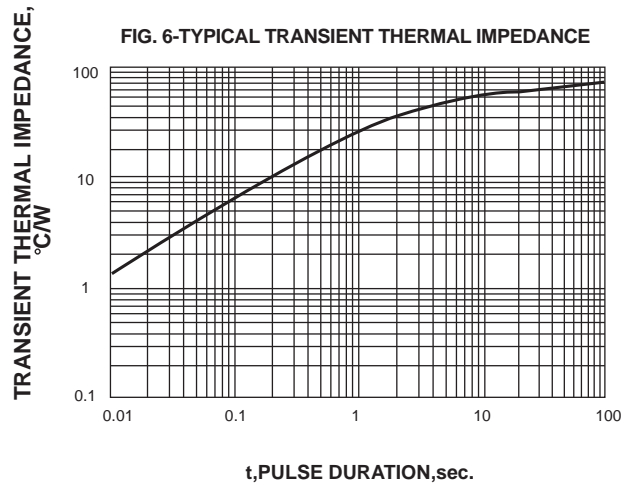
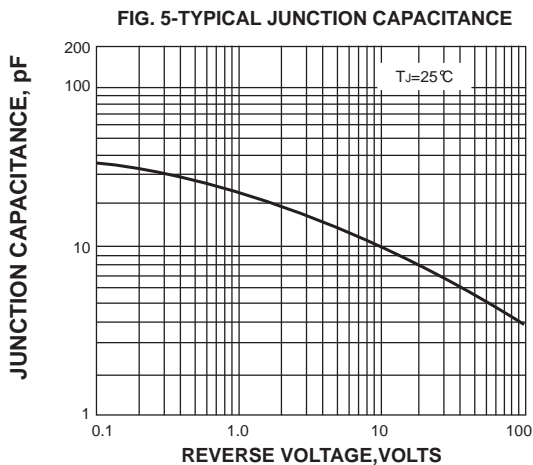
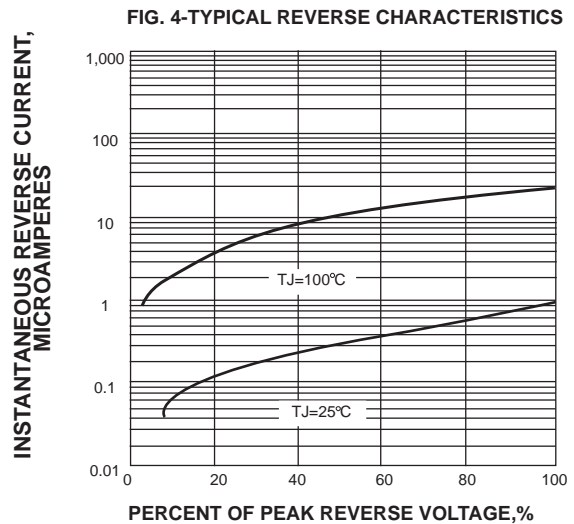
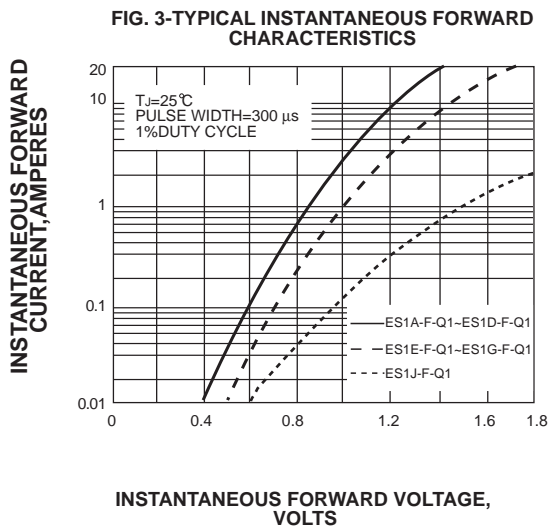
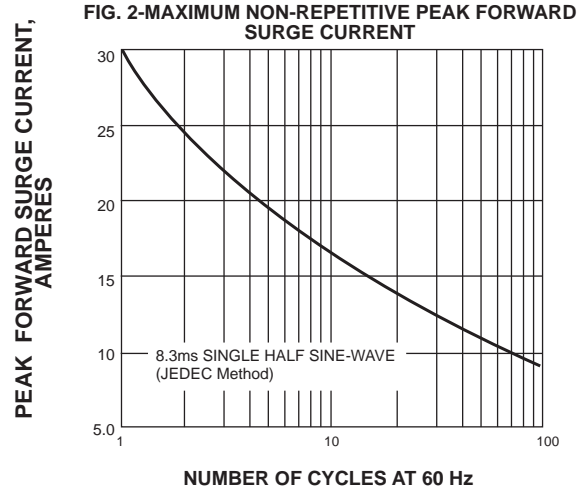
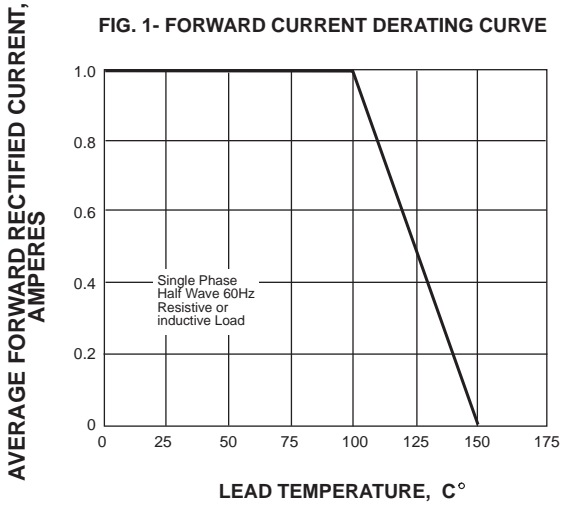
| PARAMETER | CONDITIONS | Symbol | MIN. | TYP. | MAX. | UNIT |
|----------------------------|---|-----------------|------|------|------|--------------------|
| Forward rectified current | See Fig. 1 | I_O | | | 1.0 | A |
| Forward surge current | 8.3ms single half sine-wave (JEDEC methode) | I_{FSM} | | | 30 | A |
| Reverse current | $V_R = V_{RRM} \quad T_A = 25^\circ\text{C}$ | I_R | | | 5.0 | μA |
| | $V_R = V_{RRM} \quad T_A = 100^\circ\text{C}$ | | | | 50 | |
| Thermal resistance | Junction to ambient NOTE 1 | $R_{\theta JA}$ | | 55 | | $^\circ\text{C/W}$ |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse voltage | C_J | | 15 | | pF |
| Storage temperature | | T_{STG} | -65 | | +150 | $^\circ\text{C}$ |

| SYMBOLS | V_{RRM}^{*1} (V) | V_{RMS}^{*2} (V) | V_R^{*3} (V) | V_F^{*4} (V) | t_{rr}^{*5} (ns) | Operating temperature $T_J, (^\circ\text{C})$ |
|-----------|-----------------------|-----------------------|-------------------|-------------------|-----------------------|--|
| ES1A-F-Q1 | 50 | 35 | 50 | 1.00 | 35 | -55 to +150 |
| ES1B-F-Q1 | 100 | 70 | 100 | | | |
| ES1C-F-Q1 | 150 | 105 | 150 | | | |
| ES1D-F-Q1 | 200 | 140 | 200 | | | |
| ES1E-F-Q1 | 300 | 210 | 300 | 1.25 | | |
| ES1G-F-Q1 | 400 | 280 | 400 | | | |
| ES1J-F-Q1 | 600 | 420 | 600 | | 1.70 | |

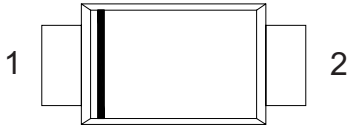

- *1 Repetitive peak reverse voltage
- *2 RMS voltage
- *3 Continuous reverse voltage
- *4 Maximum forward voltage@ $I_F=1.0\text{A}$
- *5 Maximum Reverse recovery time, note 2

Note: 1.P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas
2. Reverse recovery time test condition, $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$

Rating and characteristic curves



Pinning information

| Pin | Simplified outline | Symbol |
|----------------------------|---|---|
| Pin1 cathode Pin2 anode |  |  |

Marking

| Type number | Marking code |
|-------------|--------------|
| ES1A-F-Q1 | E1A |
| ES1B-F-Q1 | E1B |
| ES1C-F-Q1 | E1C |
| ES1D-F-Q1 | E1D |
| ES1E-F-Q1 | E1E |
| ES1G-F-Q1 | E1G |
| ES1J-F-Q1 | E1J |

Suggested solder pad layout



Dimensions in inches and (millimeters)

| PACKAGE | A | B | C |
|---------|--------------|--------------|--------------|
| SMAF | 0.110 (2.80) | 0.063 (1.60) | 0.079 (2.00) |