

SCHOTTKY BARRIER RECTIFIER

VOLTAGE RANGE: 60 V
CURRENT: 5.0 A

FEATURES

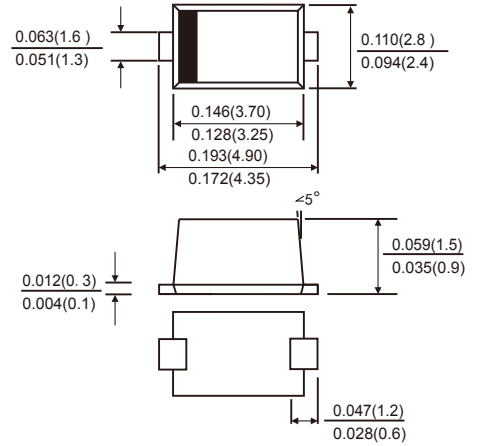
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High surge capability
- High temperature soldering guaranteed:260°C/10 seconds at terminals
- Component in accordance to RoHS 2011/65/EU



MECHANICAL DATA

- Case: SMAF molded plastic body
- Terminals: Solder Plated, solderable per MIL-STD-750,method 2026
- Polarity: Color band denotes cathode end

SMAF



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate by 20%.

| Parameter | Symbol | Value | Unit |
|--|-------------|-------------|------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 60 | V |
| Maximum average forward rectified current (see fig.1) | $I_{F(AV)}$ | 5.0 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL) | I_{FSM} | 120 | A |
| Operating junction temperature range | T_J | -55 to +150 | °C |
| Storage temperature range | T_{stg} | -55 to +150 | °C |

| Parameter | Test Conditions | Symbol | TYP. | MAX. | Unit | |
|------------------------------|-------------------------|-------------------------|----------|------|------|---------------|
| Instaneous forward voltage | $T_A=25^\circ\text{C}$ | $I_F=1.0\text{A}$ | V_F 1) | 0.33 | - | V |
| | | $I_F=3.0\text{A}$ | | 0.40 | - | |
| | | $I_F=5.0\text{A}$ | | 0.46 | 0.52 | |
| | $T_A=125^\circ\text{C}$ | $I_F=1.0\text{A}$ | | 0.24 | - | |
| | | $I_F=3.0\text{A}$ | | 0.35 | - | |
| | | $I_F=5.0\text{A}$ | | 0.44 | - | |
| Reverse current | $V_R=60\text{V}$ | $T_A=25^\circ\text{C}$ | I_R 2) | 60 | 150 | μA |
| | | $T_A=100^\circ\text{C}$ | | 5 | - | mA |
| | | $T_A=125^\circ\text{C}$ | | 15 | - | |
| Typical junction capacitance | 4V, 1MHz | C_J | 370 | | pF | |

| Parameter | Symbol | SMAF | Unit |
|--|-----------------|------|------|
| Typical thermal resistance ³⁾ | $R_{\theta JA}$ | 150 | °C/W |
| | $R_{\theta JL}$ | 28.0 | |

Notes: 1.Pulse test: 300 μs pulse width, 1% duty cycle

2.Pulse test: pulse width $\leq 40\text{ms}$

3.P.C.B. mounted with 0.118" x 0.118" (3.0 mm x 3.0 mm) copper pad areas ($\geq 40\mu\text{m}$ thick).

FIG.1-FORWARD CURRENT DERATING CURVE

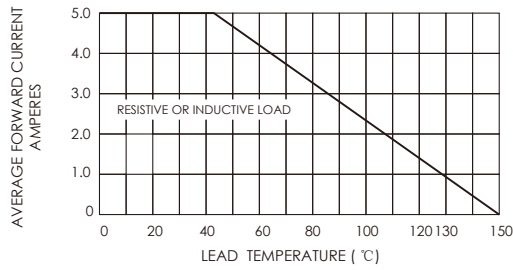


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

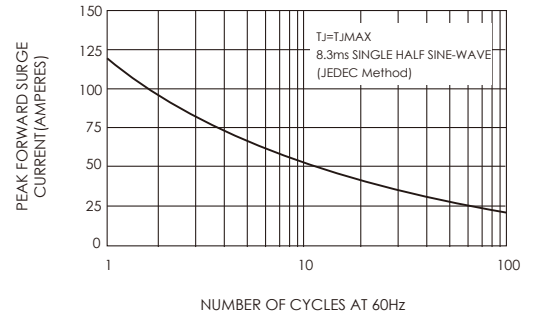


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

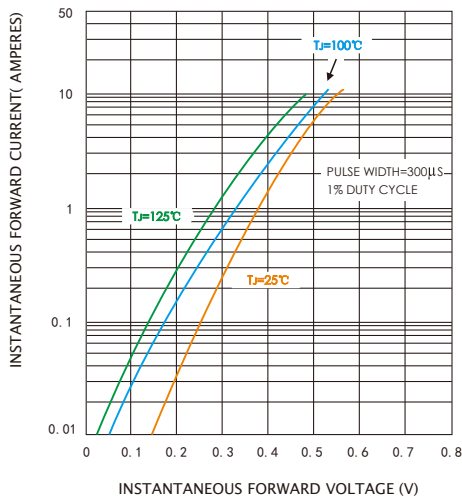


FIG.4-TYPICAL REVERSE CHARACTERISTICS

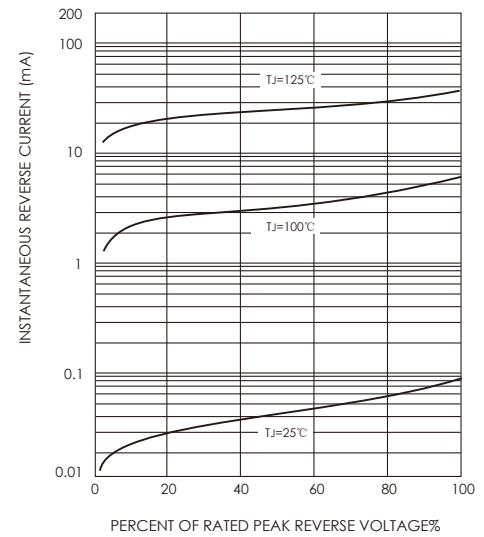
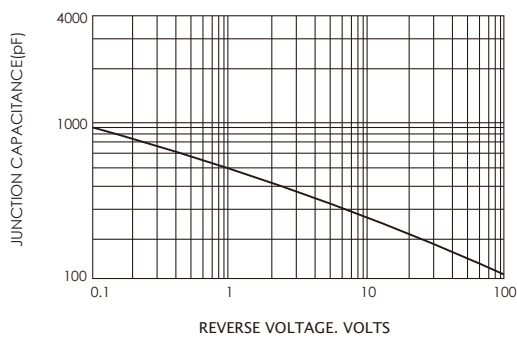


FIG.5-TYPICAL JUNCTION CAPACITANCE

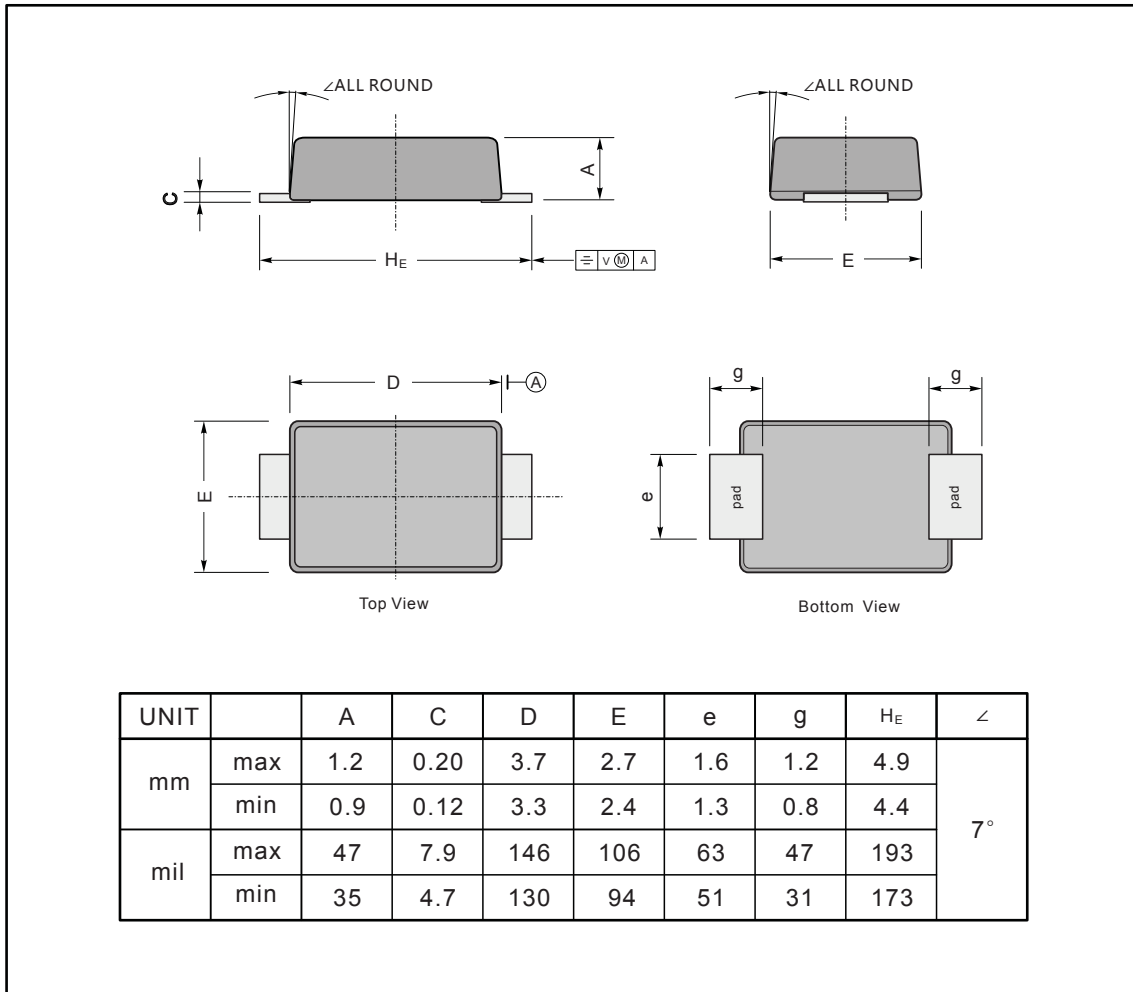


JINAN JINGHENG ELECTRONICS CO., LTD.

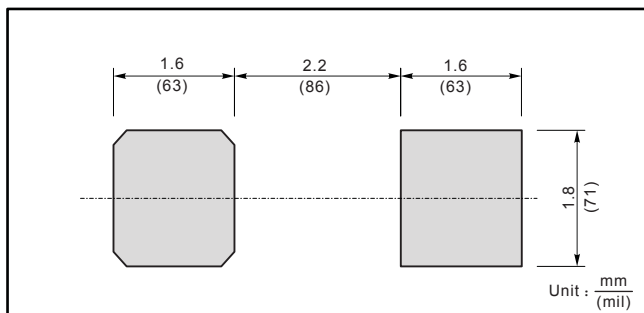
PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SMAF



The recommended mounting pad size



Marking

| Type number | Marking code |
|-------------|--------------|
| ES1AF | ES1A |
| ES1BF | ES1B |
| ES1CF | ES1C |
| ES1DF | ES1D |
| ES1EF | ES1E |
| ES1GF | ES1G |
| ES1JF | ES1J |