

FEATURES

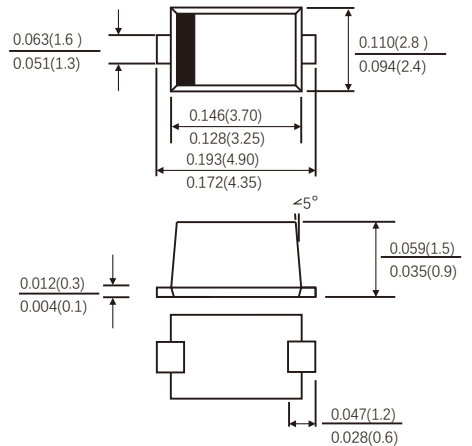
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High surge capability
- High temperature soldering guaranteed:260°C/10 seconds at terminals
- Component in accordance to RoHS 2015/863/EU



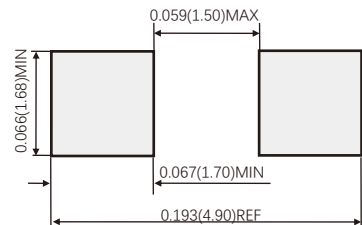
MECHANICAL DATA

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

SMAF



Suggested PAD Layout



Dimensions in inches and (millimeters)

TYPICAL APPLICATIONS

For use in low voltage ,high frequency inverters ,DC/DC converters, free wheeling ,and polarity protection applications

MAXIMUM RATINGS

(Ratings at 25°C ambient temperature unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--|--------------------|------------|------|
| Maximum repetitive peak reverse voltage | V _{RRM} | 40 | V |
| Maximum average forward rectified current (see fig.1) | I _{F(AV)} | 2.0 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL) | I _{FSM} | 50 | A |
| Operating junction temperature range | T _J | -55 to+150 | °C |
| Storage temperature range | T _{stg} | -55 to+150 | °C |

ELECTRICAL CHARACTERISTICS (T_A=25°C Unless otherwise noted)

| Parameter | Test Conditions | | Symbol | Typ. | Max. | Unit |
|-------------------------------|----------------------|-----------------------|------------------------------|------|------|------|
| Instantaneous forward voltage | I _F =2.0A | T _J =25°C | V _F ¹⁾ | 0.43 | 0.47 | V |
| | | T _J =100°C | | 0.36 | - | |
| | | T _J =125°C | | 0.34 | - | |
| Reverse current | V _R =40V | T _J =25°C | I _R ²⁾ | 60 | 200 | μA |
| | | T _J =100°C | | 5 | - | mA |
| | | T _J =125°C | | 30 | - | |
| Typical junction capacitance | 4V, 1MHz | | C _J | 170 | | pF |

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

2.Pulse test: pulse width ≤ 40ms

THERMAL CHARACTERISTICS

| Parameter | Symbol | SMAF | Unit |
|----------------------------|-----------------------------------|------|------|
| Typical thermal resistance | R _{θJA} ^{3) 4)} | 150 | °C/W |
| | R _{θJM} ⁵⁾ | 15 | |

3.The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_c/dT_j < 1/R_{\theta JA}$

4.Thermal resistance junction-to-ambient to follow JEDEC51-2A, device mounted on FR4 PCB, 2 oz., standard footprint

5.Thermal resistance junction-to-mount to follow JEDEC51-14 transient dual interface test method (TDIM)

AVAILABLE PACK INFORMATION

| Product code | Pack | Reel Size (mm) | Quantity (pcs/reel) | Box Size L×W×H (mm) | Quantity (reel/box) | Carton Size L×W×H (mm) | Quantity (box/carton) | Quantity(carton) (K) |
|--------------|------|----------------|---------------------|---------------------|---------------------|------------------------|-----------------------|----------------------|
| SS24LS-SMAF | T/R | Φ178 | 3000 | 180×180×105 | 6 | 550×200×205 | 5 | 90 |

FIG.1-FORWARD CURRENT DERATING CURVE

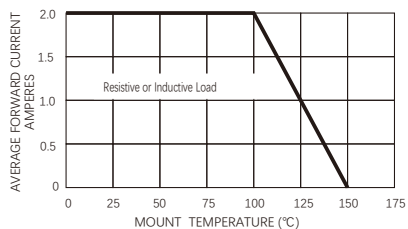


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

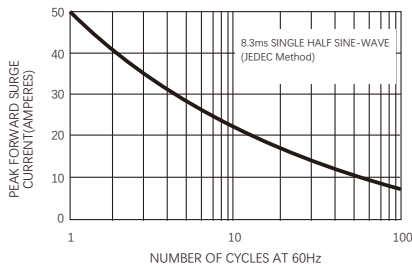


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

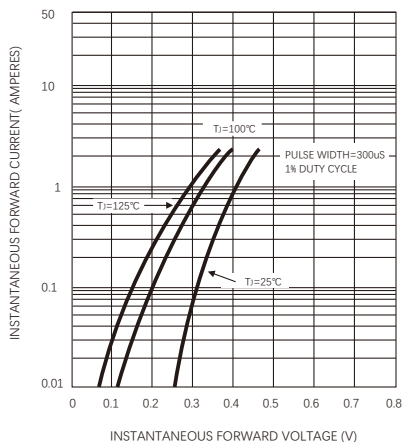


FIG.4-TYPICAL REVERSE CHARACTERISTICS

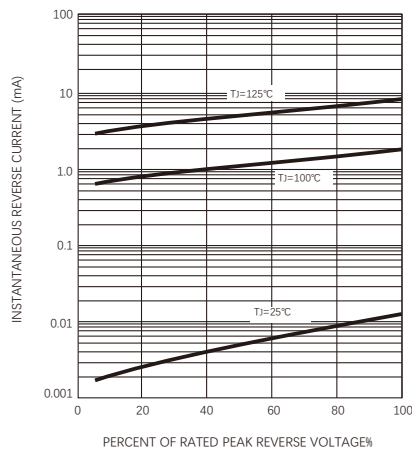
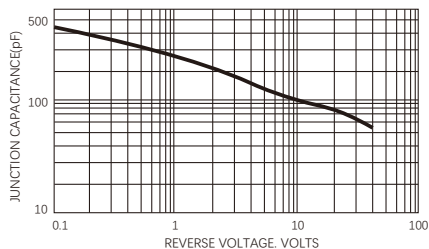


FIG.5-TYPICAL JUNCTION CAPACITANCE



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