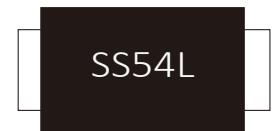


FEATURES

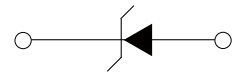
- | For surface mounted applications
- | Built-in strain relief, ideal for automated placement
- | Low forward voltage
- | High forward surge current capability
- | The plastic package carries Underwriters Laboratory Flammability Classification 94V-0



SMAF



Marking



Schematic Symbol

MECHANICAL DATA

- | Case : Molded plastic body
- | Polarity : Polarity symbol marking on body
- | Mounting Position : Any

APPROVALS

| | |
|-------------|------------------------------------|
| RoHS | Compliance with 2011/65/EU |
| HF | Compliance with IEC61249-2-21:2003 |

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

| Parameter | Symbol | Value | Unit |
|--|-----------------|------------|-----------------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 40 | V |
| Maximum RMS voltage | V_{RMS} | 28 | V |
| Maximum DC blocking voltage | V_{DC} | 40 | V |
| Maximum average forward rectified current at $T_L=100^{\circ}\text{C}$ | $I_{(AV)}$ | 5.0 | A |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load | I_{FSM} | 120.0 | A |
| Typical thermal resistance | $R_{\theta JA}$ | 65 | $^{\circ}\text{C}/\text{W}$ |
| | $R_{\theta JL}$ | 20 | $^{\circ}\text{C}/\text{W}$ |
| Operating temperature range | T_J | -55 to 125 | $^{\circ}\text{C}$ |
| Storage temperature range | T_{STG} | -55 to 150 | $^{\circ}\text{C}$ |

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

| Parameter | Symbol | Typ. | Max. | Unit |
|---|--------|---------------------------|------|---------------|
| Maximum instantaneous forward voltage at 5.0A | V_F | 0.43 | 0.48 | V |
| Maximum DC reverse current at rated DC blocking voltage | I_R | $T_A=25^{\circ}\text{C}$ | 50 | μA |
| | | $T_A=100^{\circ}\text{C}$ | 5 | mA |

CHARACTERISTIC CURVES

Fig.1 Derating Curve Output Rectified Current

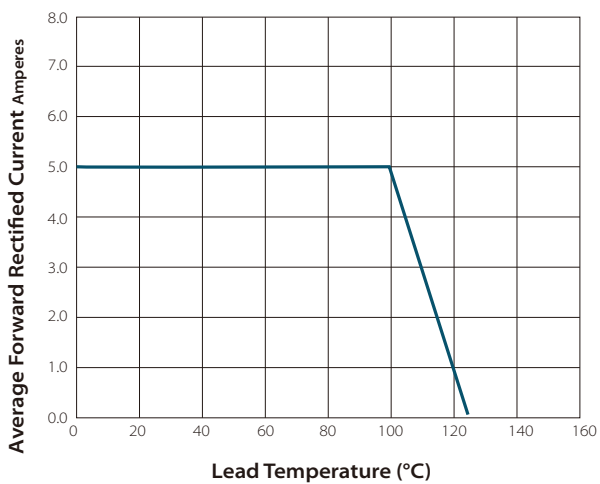


Fig.2 Maximum Non-repetitive Peak Forward Surge Current Perleg

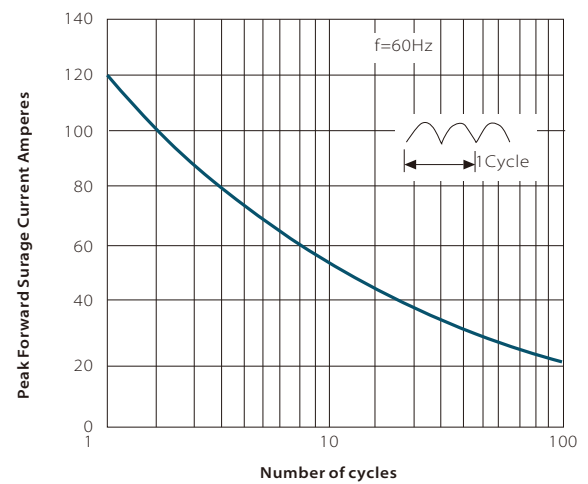
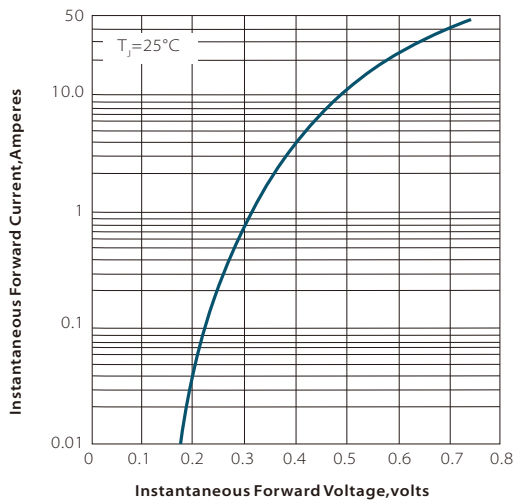
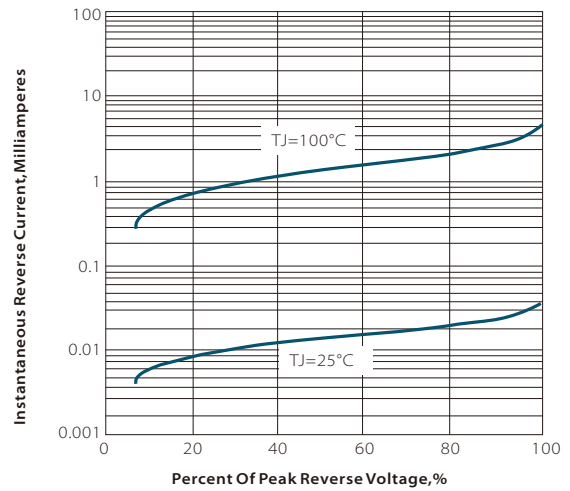
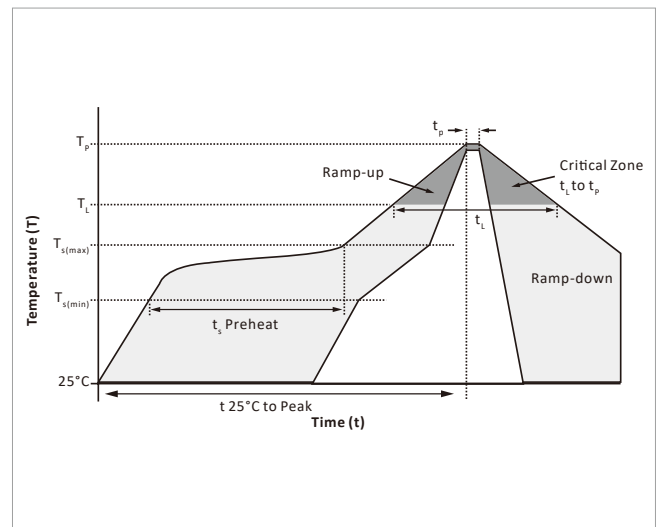


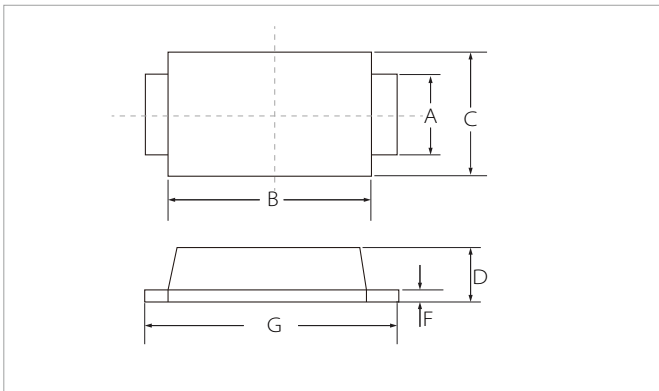
Fig.3 Typical Forward Voltage Characteristics

Fig.4 Typical Reverse Leakage Characteristics


SOLDERING PARAMETERS

| Reflow Condition | | Lead-free assembly |
|--|-----------------------------------|--------------------|
| Pre Heat | Temperature Max ($T_{s(\min)}$) | 150°C |
| | Temperature Max ($T_{s(\max)}$) | 200°C |
| | Time (min to max) (t_s) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp (T_L) to peak) | | 3°C/second max |
| $T_{s(\max)}$ to T_L - Ramp-up Rate | | 3°C/second max |
| Reflow | Temperature (T_L) (Liquidus) | 217°C |
| | Time (min to max) (t_L) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260°C |
| Time within 5°C of actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (T_p) | | 8 minutes max. |
| Do not exceed | | 260°C |

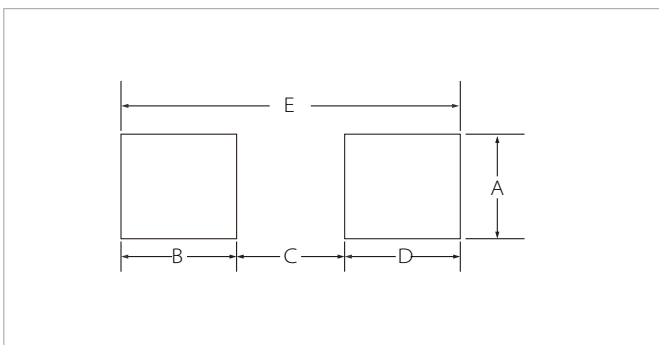


SMAF PACKAGE INFORMATION



| Ref. | Millimeters | | Inches | |
|------|-------------|------|--------|-------|
| | Min | Max | Min | Max |
| A | 1.35 | 1.45 | 0.053 | 0.057 |
| B | 3.40 | 3.80 | 0.134 | 0.145 |
| C | 2.40 | 2.80 | 0.094 | 0.110 |
| D | 0.95 | 1.45 | 0.037 | 0.057 |
| F | 0.15 | 0.22 | 0.006 | 0.009 |
| G | 4.40 | 4.80 | 0.173 | 0.189 |

RECOMMENDED PAD LAYOUT DIMENSIONS



| Ref. | Millimeters | | Inches | |
|------|-------------|-----|----------|-------|
| | Min | Max | Min | Max |
| A | 1.70 | - | 0.067 | - |
| B | 2.50 | - | 0.098 | - |
| C | - | 1.5 | - | 0.059 |
| D | 2.50 | - | 0.098 | - |
| E | 6.50REF | | 0.256REF | |

ORDERING INFORMATION

| Part Number | Package | QTY/Reel | Reel Size |
|-------------|---------|----------|-----------|
| SS54ALF | SMAF | 5000PCS | 13" |

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