

1A, 20 - 60V Schottky Surface Mount Rectifier

FEATURES

- Plastic package has carries underwriters
- Ideal for automated placement
- Surge overload rating to 25A peak
- Reliable low cost construction utilizing molded
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Inverters
- Converters
- Adapters

MECHANICAL DATA

- Case: MELF
- Molding compound meets UL 94V-0 flammability rating
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 120.00mg (approximately)

| KEY PARAMETERS | | |
|----------------|---------|------|
| PARAMETER | VALUE | UNIT |
| I_F | 1 | A |
| V_{RRM} | 20 - 60 | V |
| I_{FSM} | 25 | A |
| $T_{J\ MAX}$ | 150 | °C |
| Package | MELF | |



MELF

| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | | |
|---|--------------|-------------|--------|--------|-------------|--------|------|
| PARAMETER | SYMBOL | LSR102 | LSR103 | LSR104 | LSR105 | LSR106 | UNIT |
| Repetitive peak reverse voltage | V_{RRM} | 20 | 30 | 40 | 50 | 60 | V |
| Reverse voltage, total rms value | $V_{R(RMS)}$ | 14 | 21 | 28 | 35 | 42 | V |
| DC blocking voltage | V_{DC} | 20 | 30 | 40 | 50 | 60 | V |
| Forward current | I_F | 1 | | | | | A |
| Surge peak forward current 8.3ms single half sine-wave superimposed on rated load | I_{FSM} | 25 | | | | | A |
| Junction temperature | T_J | -65 to +125 | | | -65 to +150 | | °C |
| Storage temperature | T_{STG} | -65 to +150 | | | | | °C |

| THERMAL PERFORMANCE | | | |
|--|-----------------|------------|-------------|
| PARAMETER | SYMBOL | TYP | UNIT |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 80 | °C/W |

| ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | |
|---|-----------------|---------------------------|---------------|------------|------------|-------------|
| PARAMETER | | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
| Forward voltage ⁽¹⁾ | LSR102 – LSR104 | $I_F = 1.0\text{A}$ | V_F | - | 0.55 | V |
| | LSR105 – LSR106 | | | - | 0.70 | |
| Reverse current @ rated V_R ⁽²⁾ | | $T_J = 25^\circ\text{C}$ | I_R | - | 1 | mA |
| | | $T_J = 125^\circ\text{C}$ | | - | 10 | mA |
| Junction capacitance | LSR102 – LSR104 | 1MHz, $V_R = 4.0\text{V}$ | C_J | 110 | - | pF |
| | LSR105 – LSR106 | | | 80 | - | |

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

| ORDERING INFORMATION | | |
|------------------------------------|----------------|----------------|
| ORDERING CODE⁽¹⁾ | PACKAGE | PACKING |
| LSR10x L0G | MELF | 5,000/13" reel |

Notes:

1. "x" defines voltage from 20V(LSR102) – 60V(LSR106)

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

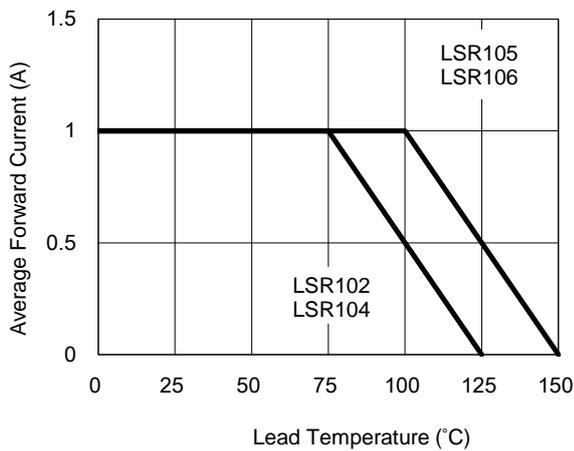


Fig.2 Maximum Non-Repetitive Peak Forward Surge Current

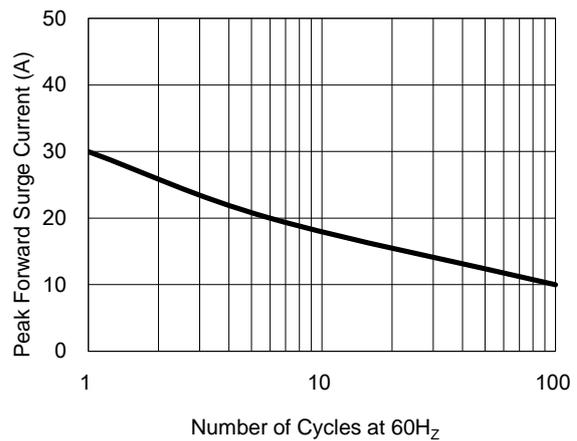


Fig.3 Typical Forward Characteristics

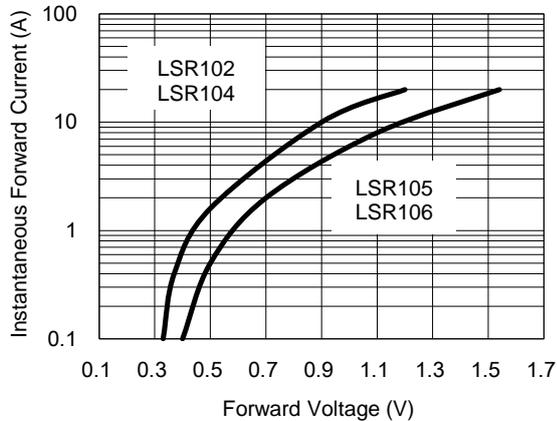


Fig.4 Typical Reverse Characteristics

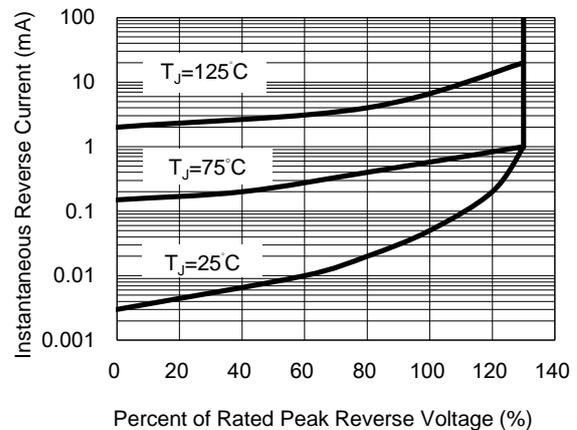


Fig.5 Typical Junction Capacitance

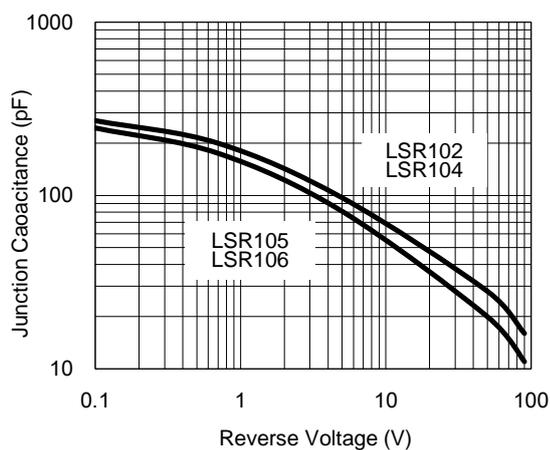
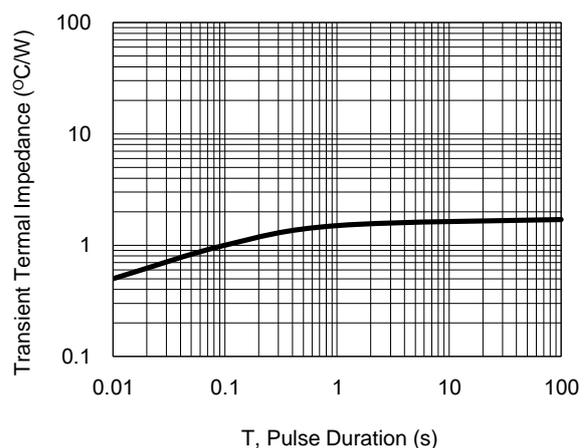
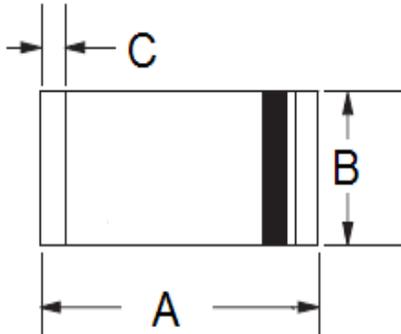


Fig.6 Typical Transient Thermal Impedance



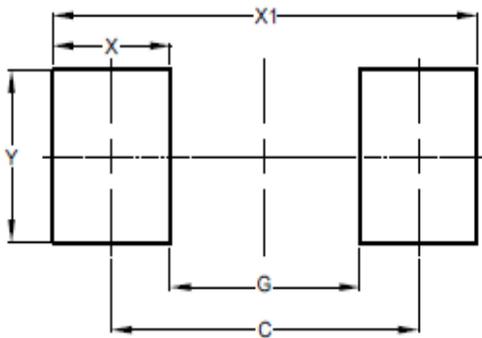
PACKAGE OUTLINE DIMENSIONS

MELF



| DIM | Unit (mm) | | Unit (inch) | |
|-----|-----------|------|-------------|-------|
| | Min | Max | Min | Max |
| A | 4.80 | 5.50 | 0.189 | 0.217 |
| B | 2.25 | 2.67 | 0.089 | 0.105 |
| C | 0.30 | 0.60 | 0.012 | 0.024 |

SUGGESTED PAD LAYOUT



| DIM | Unit (mm) | Unit (inch) |
|-----|-----------|-------------|
| | TYP | TYP |
| C | 4.80 | 0.189 |
| G | 3.30 | 0.130 |
| X | 1.50 | 0.059 |
| X1 | 6.30 | 0.248 |
| Y | 2.70 | 0.106 |

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