

## Small Signal Product

## 500mW High Speed SMD Switching Diode

**FEATURES**

- Fast switching device ( $t_{rr} < 4.0\text{ns}$ )
- Surface device type mounting
- Moisture sensitivity level 1
- Matte Tin (Sn) lead finish with Nickel (Ni) underplate
- Pb free version and RoHS compliant
- All external surfaces are corrosion resistant and leads are readily solderable


**QUADRO Mini-MELF (LS34)**
**MECHANICAL DATA**

- Case: QUADRO Mini-MELF Package
- High temperature soldering guaranteed :  $270^{\circ}\text{C}/10\text{s}$
- Polarity : Indicated by black cathode band
- Weight :  $29 \pm 2.5\text{mg}$



| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ unless otherwise noted) |                 |             |                             |
|---|-----------------|-------------|-----------------------------|
| PARAMETER   | SYMBOL          | VALUE       | UNIT                        |
| Power Dissipation   | $P_D$           | 500         | mW                          |
| Non-Repetitive Peak Reverse Voltage   | $V_{RSM}$       | 100         | V                           |
| Repetitive Peak Reverse Voltage   | $V_{RRM}$       | 75          | V                           |
| Peak Forward Surge Current  | $I_{FSM}$       | 2           | A                           |
| Non-Repetitive Peak Forward Current   | $I_{FM}$        | 450         | mA                          |
| Mean Forward Current  | $I_O$           | 150         | mA                          |
| Thermal Resistance (Junction to Ambient) (Note 1)   | $R_{\theta JA}$ | 300         | $^{\circ}\text{C}/\text{W}$ |
| Junction and Storage Temperature Range  | $T_J, T_{STG}$  | -65 to +175 | $^{\circ}\text{C}$          |

| PARAMETER   | SYMBOL     | MIN | MAX  | UNIT          |
|---|------------|-----|------|---------------|
| Reverse Breakdown Current<br>$I_R=100\mu\text{A}$<br>$I_R=5\mu\text{A}$   | $V_{(BR)}$ | 100 | -    | V             |
|   |            | 75  | -    |               |
| Forward Voltage<br>LS4448, LS914B $I_F=5.0\text{mA}$<br>LS4148 $I_F=10.0\text{mA}$<br>LS4448, LS914B $I_F=100.0\text{mA}$ | $V_F$      | -   | 0.72 | V             |
|   |            | -   | 1.0  |               |
|   |            | -   | 1.0  |               |
| Reverse Leakage Current<br>$V_R=20\text{V}$<br>$V_R=75\text{V}$   | $I_R$      | -   | 25   | nA            |
|   |            | -   | 5.0  | $\mu\text{A}$ |
| Junction Capacitance<br>$V_R=0, f=1.0\text{MHz}$  | $C_J$      | -   | 4.0  | pF            |
| Reverse Recovery Time (Note 2)  | $t_{rr}$   | -   | 4.0  | ns            |

Note 1: Valid provided that electrodes are kept at ambient temperature

 Note 2: Reverse recovery test conditions:  $I_F=10\text{mA}$  to  $I_R=1\text{mA}$ ,  $R_L=100\Omega$ ,  $V_{RR}=6\text{V}$

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RATINGS AND CHARACTERISTICS CURVES

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

Fig. 1 Typical Forward Characteristics

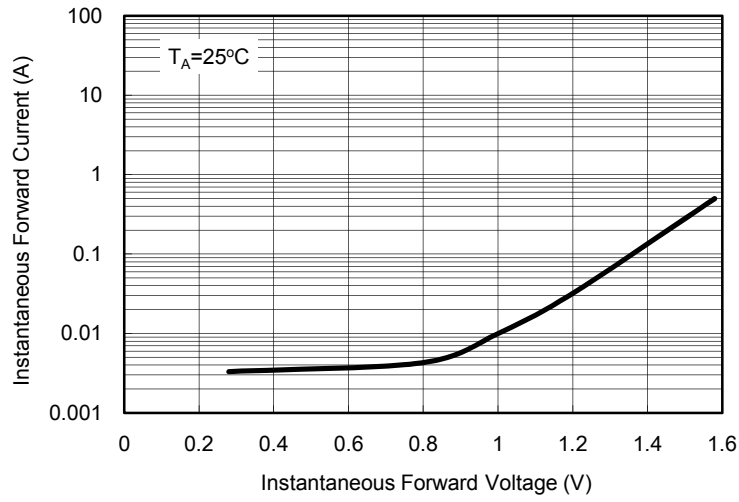


Fig. 2 Reverse Current VS. Reverse Voltage

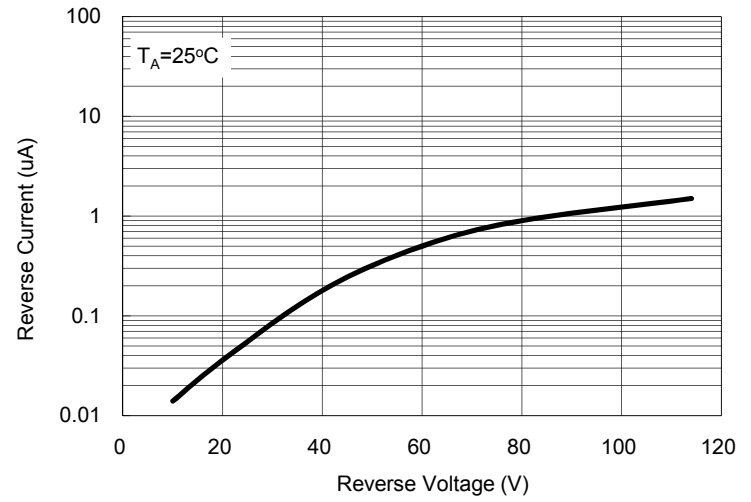


Fig. 3 Admissible Power Dissipation Curve

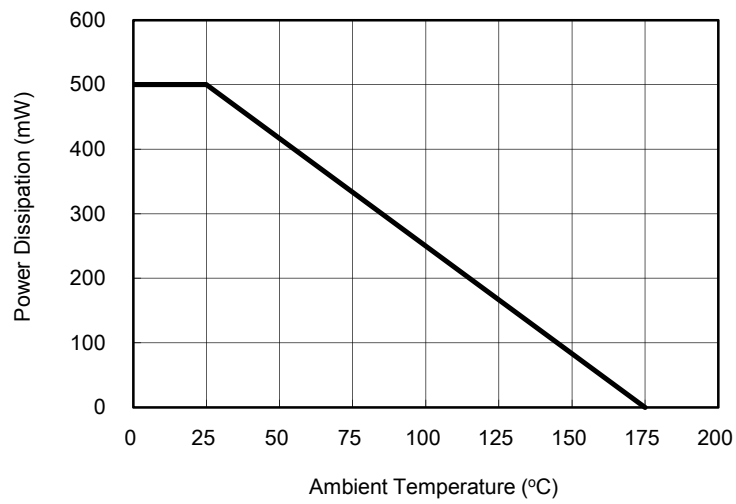


Fig. 4 Typical Junction Capacitance

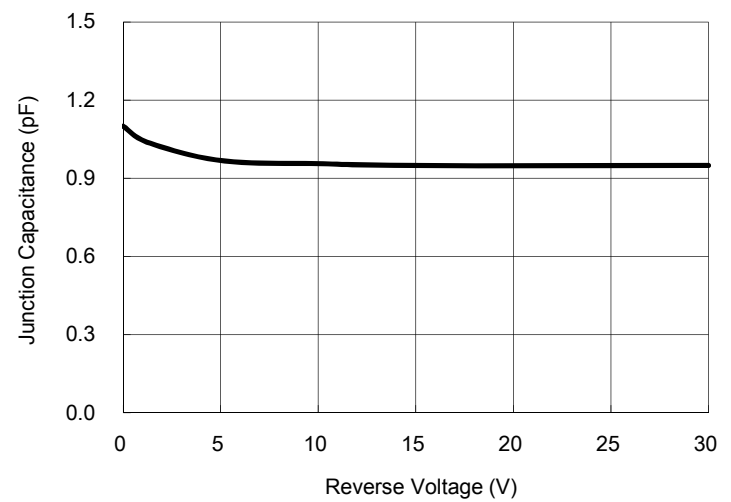
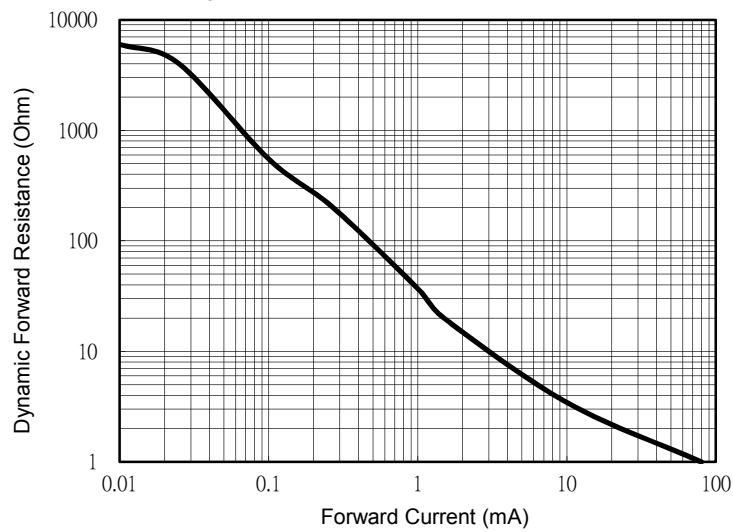


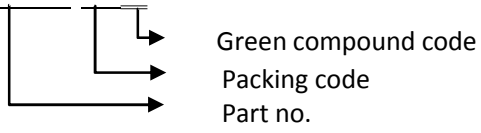
Fig. 5 Forward Resistance VS. Forward Current



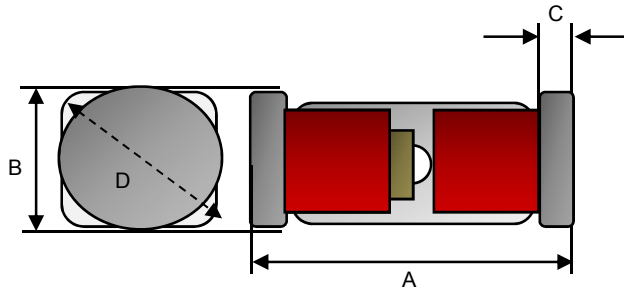
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ORDER INFORMATION (EXAMPLE)

LS4148 LOG

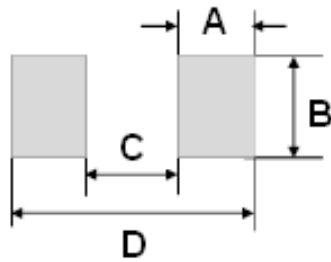


PACKAGE OUTLINE DIMENSION



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 3.30      | 3.70 | 0.130       | 0.146 |
| B    | 1.40      | 1.60 | 0.055       | 0.063 |
| C    | 0.20      | 0.45 | 0.008       | 0.018 |
| D    | Typ. 1.8  |      | Typ. 0.071  |       |

SUGGEST PAD LAYOUT



| DIM. | Unit (mm) | Unit (inch) |
|------|-----------|-------------|
|      | Typ.      | Typ.        |
| A    | 1.25      | 0.049       |
| B    | 2.00      | 0.079       |
| C    | 2.50      | 0.098       |
| D    | 5.00      | 0.197       |

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