# Small Signal Schottky Diodes



## FEATURES

- Integrated protection ring against static discharge
- Low capacitance
- Low leakage current
- Low forward voltage drop
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

## LINKS TO ADDITIONAL RESOURCES

3D Models

## APPLICATIONS

- HF-detector
- Protection circuit
- Small battery charger
- AC/DC / DC/DC converter for notebooks

## MECHANICAL DATA

**Case:** QuadroMELF (SOD-80)

**Weight:** approx. 34 mg

**Cathode band color:** black

**Packaging codes/options:**

GS18/10K per 13" reel (8 mm tape), 10K/box

GS08/2.5K per 7" reel (8 mm tape), 12.5K/box

**PARTS TABLE**

| PART | TYPE DIFFERENTIATION | ORDERING CODE | CIRCUIT CONFIGURATION | REMARKS |
|---|---|---|---|---|
| LS103A | $V_R$ = 40 V | LS103A-GS18 or LS103A-GS08 | Single | Tape and reel |
| LS103B | $V_R$ = 30 V | LS103B-GS18 or LS103B-GS08 | Single | Tape and reel |
| LS103C | $V_R$ = 20 V | LS103C-GS18 or LS103C-GS08 | Single | Tape and reel |

**ABSOLUTE MAXIMUM RATINGS** ($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITION | PART | SYMBOL | VALUE | UNIT |
|---|---|---|---|---|---|
| Reverse voltage | | LS103A | $V_R$ | 40 | V |
| | | LS103B | $V_R$ | 30 | V |
| | | LS103C | $V_R$ | 20 | V |
| Peak forward surge current | $t_p$ = 300 µs, square pulse | | $I_{FSM}$ | 15 | A |
| Power dissipation | | | $P_{tot}$ | 400 | mW |

**THERMAL CHARACTERISTICS** ($T_{amb}$ = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|---|---|---|---|---|
| Thermal resistance junction to ambient air | On PC board 50 mm x 50 mm x 1.6 mm | $R_{thJA}$ | 250 | K/W |
| Junction temperature | | $T_j$ | 125 | °C |
| Storage temperature range | | $T_{stg}$ | -65 to +150 | °C |



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| **ELECTRICAL CHARACTERISTICS** ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITION** | **SYMBOL** | **SYMBOL** | **MIN.** | **TYP.** | **MAX.** | **UNIT** |
| Reverse breakdown voltage | $I_R$ = 10 µA | LS103A | $V_{(BR)}$ | 40 | | | V |
| | | LS103B | $V_{(BR)}$ | 30 | | | V |
| | | LS103C | $V_{(BR)}$ | 20 | | | V |
| Leakage current | $V_R$ = 30 V | LS103A | $I_R$ | | | 5 | µA |
| | $V_R$ = 20 V | LS103B | $I_R$ | | | 5 | µA |
| | $V_R$ = 10 V | LS103C | $I_R$ | | | 5 | µA |
| Forward voltage drop | $I_F$ = 20 mA | | $V_F$ | | | 370 | mV |
| | $I_F$ = 200 mA | | $V_F$ | | | 600 | mV |
| Diode capacitance | $V_R$ = 0 V, f = 1 MHz | | $C_D$ | | 50 | | pF |
| Reverse recovery time | $I_F$ = $I_R$ = 50 mA to 200 mA, recover to 0.1 $I_R$ | | $t_{rr}$ | | 10 | | ns |

## TYPICAL CHARACTERISTICS ($T_{amb}$ = 25 °C, unless otherwise specified)

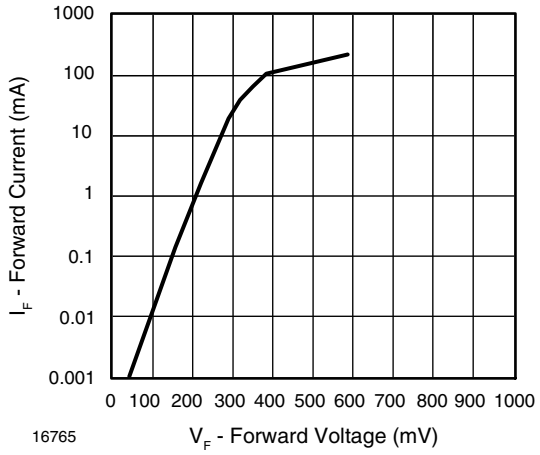



Fig. 1 - Forward Current vs. Forward Voltage

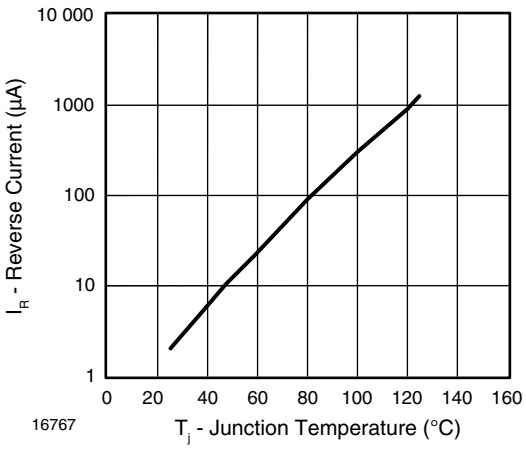



Fig. 3 - Reverse Current vs. Junction Temperature

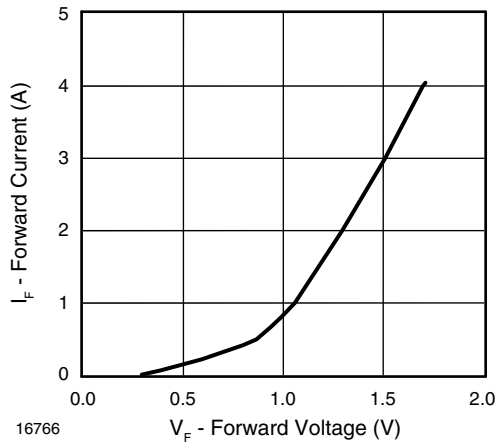



Fig. 2 - Forward Current vs. Forward Voltage

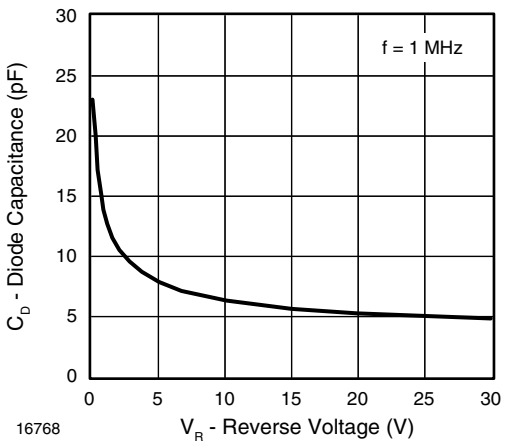



Fig. 4 - Diode Capacitance vs. Reverse Voltage


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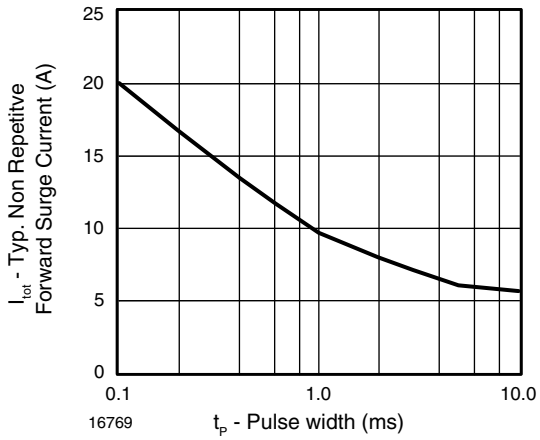
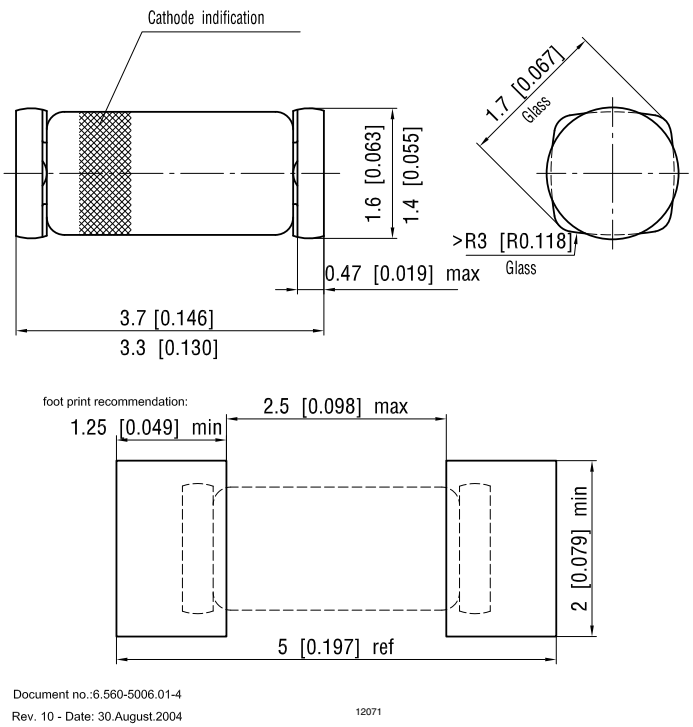



Fig. 5 - Typical Non-Repetitive Forward Surge Current vs. Pulse Width

**PACKAGE DIMENSIONS** in millimeters (inches): **QuadroMELF (SOD-80)**





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