

## Small Signal Schottky Diode



### FEATURES

- Integrated protection ring against static discharge
- Low capacitance
- Low leakage current
- Low forward voltage drop
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


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### MECHANICAL DATA

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

**Weight:** approx. 31 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

### APPLICATIONS

- HF-detector
- Protection circuit
- Small battery charger
- AC/DC / DC/DC converters

### PARTS TABLE

| PART   | TYPE DIFFERENTIATION | ORDERING CODE              | CIRCUIT CONFIGURATION | REMARKS       |
|--------|----------------------|----------------------------|-----------------------|---------------|
| LL103A | $V_R = 40\text{ V}$  | LL103A-GS08 or LL103A-GS18 | Single                | Tape and reel |
| LL103B | $V_R = 30\text{ V}$  | LL103B-GS08 or LL103B-GS18 | Single                | Tape and reel |
| LL103C | $V_R = 20\text{ V}$  | LL103C-GS08 or LL103C-GS18 | Single                | Tape and reel |

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

| PARAMETER                  | TEST CONDITION                                | PART   | SYMBOL    | VALUE | UNIT |
|----------------------------|---|--------|-----------|-------|------|
| Reverse voltage            |   | LL103A | $V_R$     | 40    | V    |
|                            |   | LL103B | $V_R$     | 30    | V    |
|                            |   | LL103C | $V_R$     | 20    | V    |
| Forward continuous current |   |        | $I_{FAV}$ | 200   | mA   |
| Peak forward surge current | $t_p = 300\text{ }\mu\text{s}$ , square pulse |        | $I_{FSM}$ | 15    | A    |
| Power dissipation          |   |        | $P_{tot}$ | 400   | mW   |

### THERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

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



| ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |  |        |                   |      |      |      |      |
|---|--|--------|-------------------|------|------|------|------|
| PARAMETER   | TEST CONDITION   | PART   | SYMBOL            | MIN. | TYP. | MAX. | UNIT |
| Reverse breakdown voltage   | I <sub>R</sub> = 50 μA   | LL103A | V <sub>(BR)</sub> | 40   |      |      | V    |
|   |  | LL103B | V <sub>(BR)</sub> | 30   |      |      | V    |
|   |  | LL103C | V <sub>(BR)</sub> | 20   |      |      | V    |
| Leakage current   | V <sub>R</sub> = 30 V  | LL103A | I <sub>R</sub>    |      |      | 5    | μA   |
|   | V <sub>R</sub> = 20 V  | LL103B | I <sub>R</sub>    |      |      | 5    | μA   |
|   | V <sub>R</sub> = 10 V  | LL103C | I <sub>R</sub>    |      |      | 5    | μA   |
| Forward voltage drop  | I <sub>F</sub> = 20 mA   |        | V <sub>F</sub>    |      |      | 370  | mV   |
|   | I <sub>F</sub> = 200 mA  |        | V <sub>F</sub>    |      |      | 600  | mV   |
| Diode capacitance   | V <sub>R</sub> = 0 V, f = 1 MHz  |        | C <sub>D</sub>    |      | 50   |      | pF   |
| Reverse recovery time   | I <sub>F</sub> = I <sub>R</sub> = 50 mA to 200 mA, recover to 0.1 I <sub>R</sub> |        | t <sub>rr</sub>   |      | 10   |      | ns   |

**TYPICAL CHARACTERISTICS** (T<sub>amb</sub> = 25 °C, unless otherwise specified)

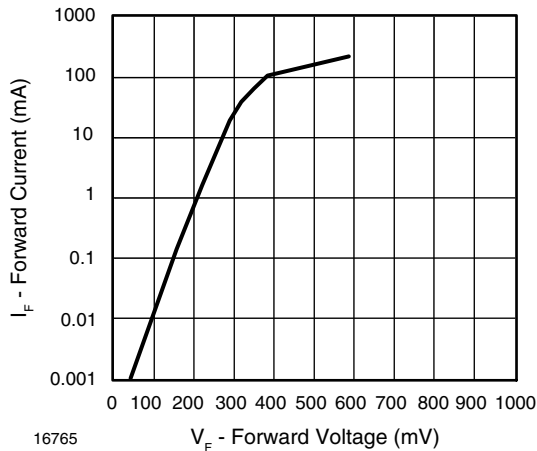


Fig. 1 - Forward Current vs. Forward Voltage

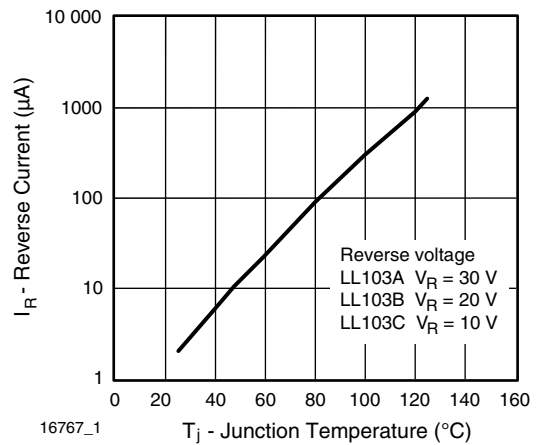


Fig. 3 - Reverse Current vs. Junction Temperature

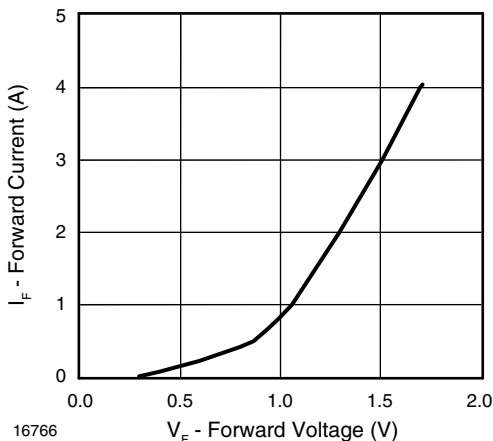


Fig. 2 - Forward Current vs. Forward Voltage

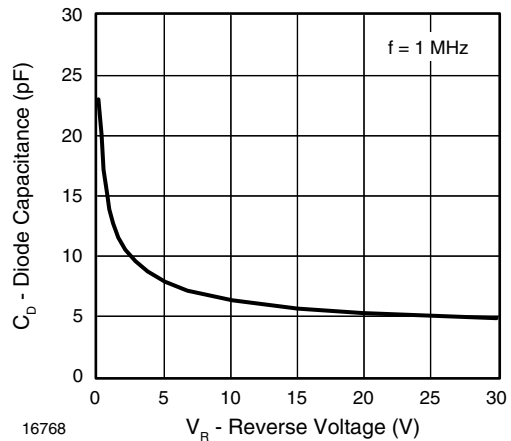


Fig. 4 - Diode Capacitance vs. Reverse Voltage

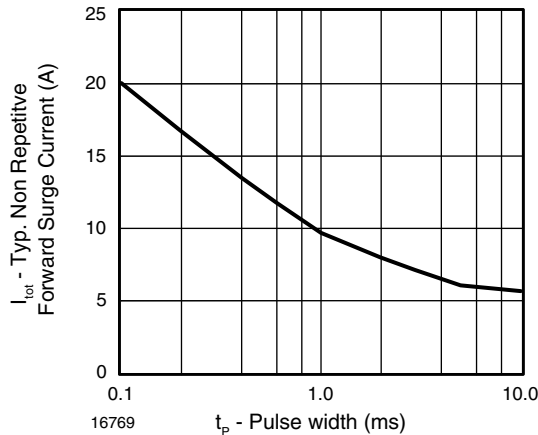
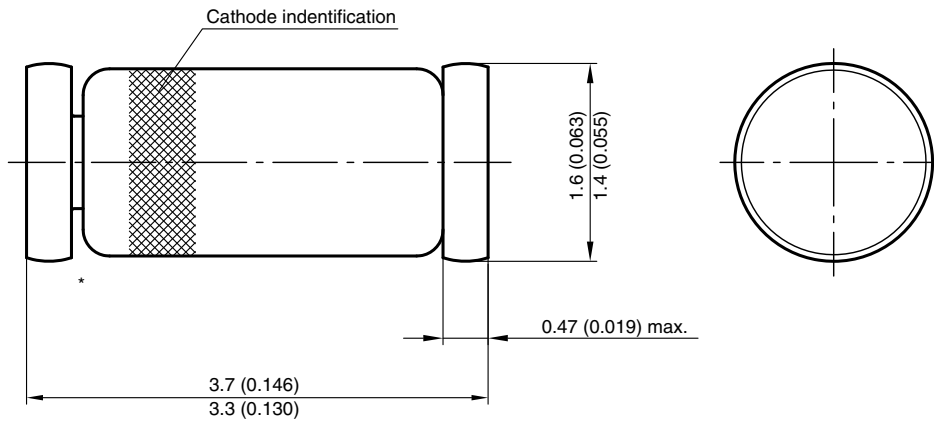
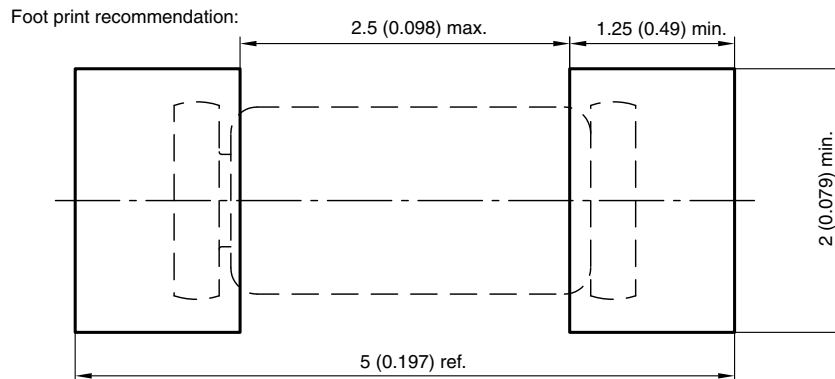


Fig. 5 - Typical Non-Repetitive Forward Surge Current vs. Pulse Width

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



\* The gap between plug and glass can be either on cathode or anode side



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