

## Small Signal Schottky Diode



### 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

### 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)



**RoHS**  
COMPLIANT

### APPLICATIONS

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

### PARTS TABLE

| PART   | TYPE DIFFERENTIATION | ORDERING CODE              | INTERNAL CONSTRUCTION | REMARKS       |
|--------|----------------------|----------------------------|-----------------------|---------------|
| LL103A | $V_R = 40\text{ V}$  | LL103A-GS08 or LL103A-GS18 | Single diode          | Tape and reel |
| LL103B | $V_R = 30\text{ V}$  | LL103B-GS08 or LL103B-GS18 | Single diode          | Tape and reel |
| LL103C | $V_R = 20\text{ V}$  | LL103C-GS08 or LL103C-GS18 | Single diode          | 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** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER                 | TEST CONDITION                                                                 | PART   | SYMBOL     | MIN. | TYP. | MAX. | UNIT          |
|---------------------------|--------------------------------------------------------------------------------|--------|------------|------|------|------|---------------|
| Reverse breakdown voltage | $I_R = 50\text{ }\mu\text{A}$                                                  | LL103A | $V_{(BR)}$ | 40   |      |      | V             |
|                           |                                                                                | LL103B | $V_{(BR)}$ | 30   |      |      | V             |
|                           |                                                                                | LL103C | $V_{(BR)}$ | 20   |      |      | V             |
| Leakage current           | $V_R = 30\text{ V}$                                                            | LL103A | $I_R$      |      |      | 5    | $\mu\text{A}$ |
|                           | $V_R = 20\text{ V}$                                                            | LL103B | $I_R$      |      |      | 5    | $\mu\text{A}$ |
|                           | $V_R = 10\text{ V}$                                                            | LL103C | $I_R$      |      |      | 5    | $\mu\text{A}$ |
| Forward voltage drop      | $I_F = 20\text{ mA}$                                                           |        | $V_F$      |      |      | 370  | mV            |
|                           | $I_F = 200\text{ mA}$                                                          |        | $V_F$      |      |      | 600  | mV            |
| Diode capacitance         | $V_R = 0\text{ V}$ , $f = 1\text{ MHz}$                                        |        | $C_D$      |      | 50   |      | pF            |
| Reverse recovery time     | $I_F = I_R = 50\text{ mA}$ to $200\text{ mA}$ ,<br>recover to $0.1\text{ }I_R$ |        | $t_{rr}$   |      | 10   |      | ns            |

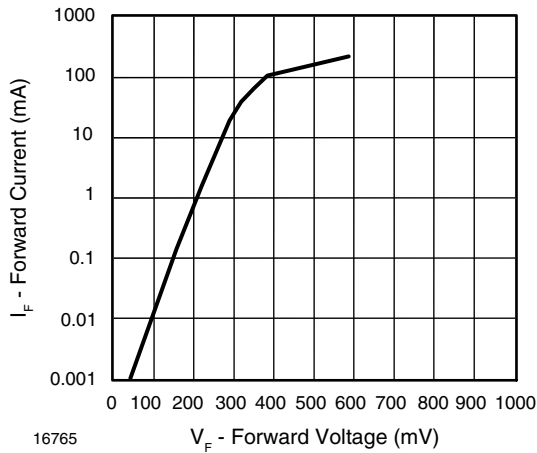
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

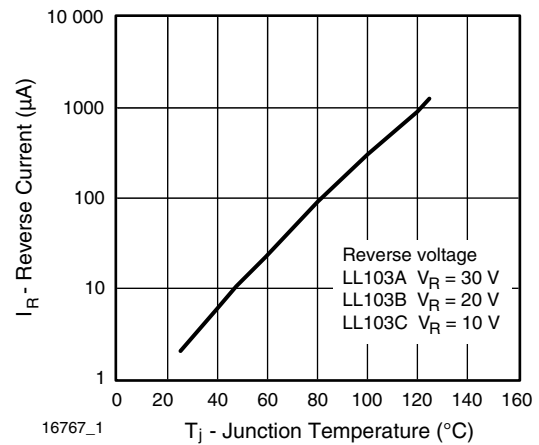


Fig. 3 - Reverse Current vs. Junction Temperature

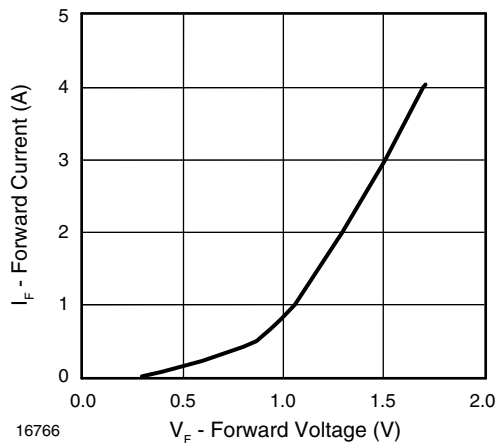


Fig. 2 - Forward Current vs. Forward Voltage

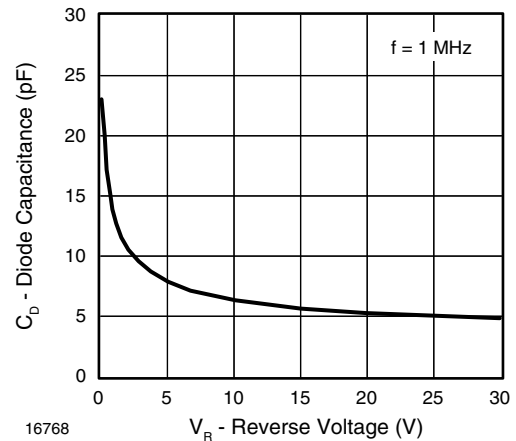


Fig. 4 - Diode Capacitance vs. Reverse Voltage

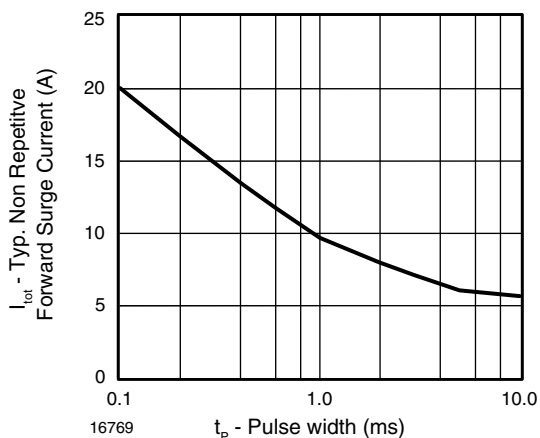
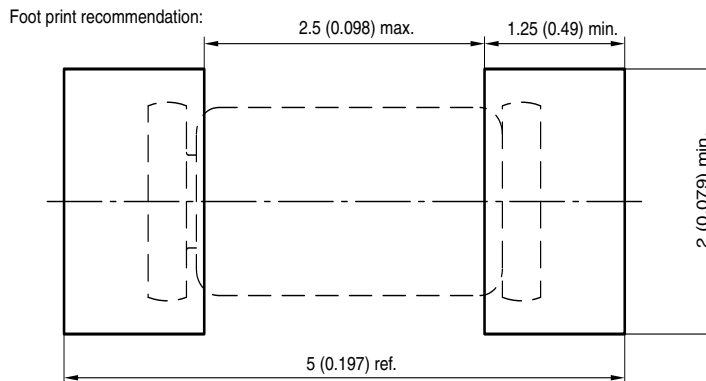
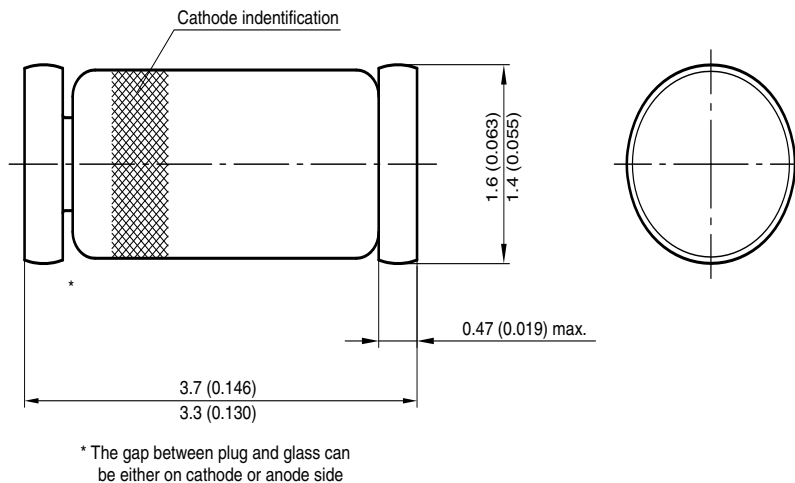


Fig. 5 - Typical Non-Repetitive Forward Surge Current vs. Pulse Width

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



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