

## **Vishay Semiconductors**

# **Small Signal Schottky Diodes**

#### **Features**

- Integrated protection ring against static discharge
- Low capacitance
- · Low leakage current
- · Low forward voltage drop
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC





#### **Applications**

- HF-Detector
- · Protection circuit
- Small battery charger
- AC-DC/DC-DC converters

#### **Mechanical Data**

Case: MiniMELF SOD-80
Weight: approx. 31 mg
Cathode band color: black
Packaging codes/options:

GS18/10 k per 13" reel (8 mm tape), 10 k/box GS08/2.5 k per 7" reel (8 mm tape), 12.5 k/box

#### **Parts Table**

Part	Type differentiation	Ordering code	Type Marking	Remarks
LL103A	V <sub>R</sub> = 40 V	LL103A-GS08 or LL103A-GS18	-	Tape and Reel
LL103B	V <sub>R</sub> = 30 V	LL103B-GS08 or LL103B-GS18	-	Tape and Reel
LL103C	V <sub>R</sub> = 20 V	LL103C-GS08 or LL103C-GS18	-	Tape and Reel

### **Absolute Maximum Ratings**

T<sub>amb</sub> = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Value	Unit
		LL103A	V <sub>R</sub>	40	V
Reverse voltage		LL103B	V <sub>R</sub>	30	V
		LL103C	V <sub>R</sub>	20	V
Forward continuous current			I <sub>FAV</sub>	200	mA
Peak forward surge current	t <sub>p</sub> = 300 μs, square pulse		I <sub>FSM</sub>	15	Α
Power dissipation			P <sub>tot</sub>	400	mW

#### **Thermal Characteristics**

T<sub>amb</sub> = 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 <sub>thJA</sub>	250	K/W	
Junction temperature		Tj	125	°C	
Storage temperature range		T <sub>stg</sub>	- 65 to + 150	°C	

# LL103A, LL103B, LL103C

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#### **Electrical Characteristics**

T<sub>amb</sub> = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Min	Тур.	Max	Unit
	I <sub>R</sub> = 50 μA	LL103A	V <sub>(BR)</sub>	40			V
Reverse breakdown voltage		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	μΑ
	V <sub>R</sub> = 20 V	LL103B	I <sub>R</sub>			5	μΑ
	V <sub>R</sub> = 10 V	LL103C	I <sub>R</sub>			5	μΑ
Forward voltage drap	I <sub>F</sub> = 20 mA		V <sub>F</sub>			370	mV
Forward voltage drop	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	$I_F = I_R = 50 \text{ to } 200 \text{ mA},$ recover to 0.1 $I_R$		t <sub>rr</sub>		10		ns

## **Typical Characteristics**

T<sub>amb</sub> = 25 °C, unless otherwise specified

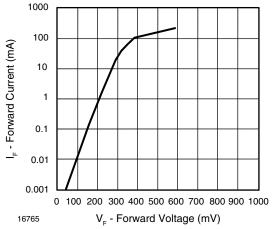


Figure 1. Forward Current vs. Forward Voltage

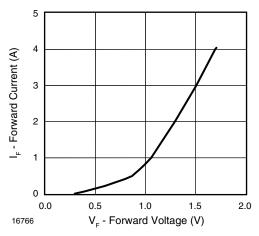


Figure 2. Forward Current vs. Forward Voltage

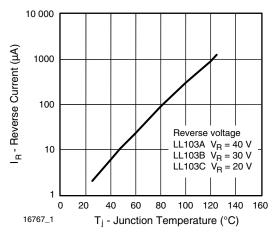


Figure 3. Reverse Current vs. Junction Temperature

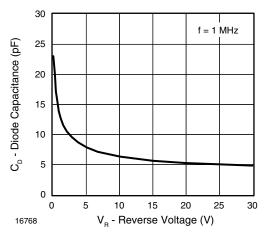


Figure 4. Diode Capacitance vs. Reverse Voltage

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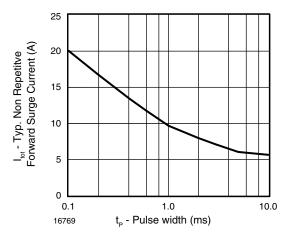
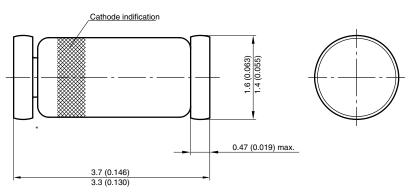
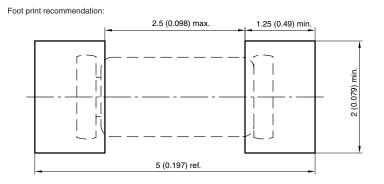


Figure 5. Typ. Non Repetitive Forward Surge Current vs. Pulse width

## 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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Vishay

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