

## Small Signal Schottky Diode



### MECHANICAL DATA

**Case:** MiniMELF SOD-80

**Weight:** approx. 31 mg

**Cathode band color:** black

**Packaging codes/options:**

18/10K per 13" reel (8 mm tape), 10K/box

08/2.5K per 7" reel (8 mm tape), 12.5K/box

### FEATURES

- For general purpose applications
- This diode features low turn-on voltage. The devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- Metal-on-silicon Schottky barrier device which is protected by a PN junction guard ring
- The low forward voltage drop and fast switching make it ideal for protection of MOS devices, steering, biasing and coupling diodes for fast switching and low logic level applications
- 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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### APPLICATIONS

- Applications where a very low forward voltage is required

### PARTS TABLE

PART	ORDERING CODE	INTERNAL CONSTRUCTION	REMARKS
BAS86-M	BAS85-M-18 or BAS86-M-08	Single diode	Tape and reel

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Continuous reverse voltage		$V_R$	50	V
Forward continuous current <sup>(1)</sup>		$I_F$	200	mA
Repetitive peak forward current <sup>(1)</sup>	$t_p \leq 1\text{ s}, \delta \leq 0.5$	$I_{FRM}$	500	mA
Power dissipation <sup>(1)</sup>		$P_{tot}$	200	mW

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	300	K/W
Junction temperature		$T_j$	125	$^{\circ}\text{C}$
Ambient operating temperature range		$T_{amb}$	- 65 to + 125	$^{\circ}\text{C}$
Storage temperature range		$T_s$	- 65 to + 150	$^{\circ}\text{C}$

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

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

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 10\text{ }\mu\text{A}$ (pulsed)	$V_{(BR)}$	50			V
Leakage current	$V_R = 40\text{ V}$	$I_R$			5	$\mu\text{A}$
Forward voltage	Pulse test $t_p < 300\text{ }\mu\text{s}, I_F = 0.1\text{ mA}, \delta < 2\%$	$V_F$		200	300	mV
	Pulse test $t_p < 300\text{ }\mu\text{s}, I_F = 1\text{ mA}, \delta < 2\%$	$V_F$		275	380	mV
	Pulse test $t_p < 300\text{ }\mu\text{s}, I_F = 10\text{ mA}, \delta < 2\%$	$V_F$		365	450	mV
	Pulse test $t_p < 300\text{ }\mu\text{s}, I_F = 30\text{ mA}, \delta < 2\%$	$V_F$		460	600	mV
	Pulse test $t_p < 300\text{ }\mu\text{s}, I_F = 100\text{ mA}, \delta < 2\%$	$V_F$		700	900	mV
Diode capacitance	$V_R = 1\text{ V}, f = 1\text{ MHz}$	$C_D$			8	pF
Reverse recovery time	$I_F = 10\text{ mA}, I_R = 10\text{ mA}, i_R = 1\text{ mA}$	$t_{rr}$			5	ns

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

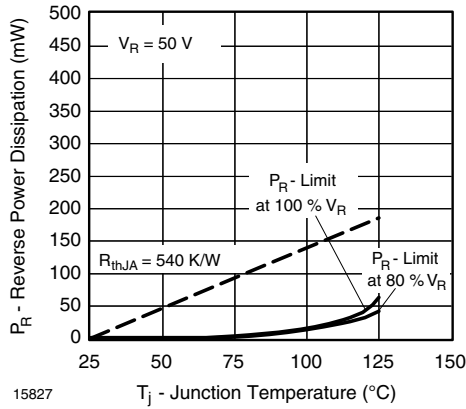


Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

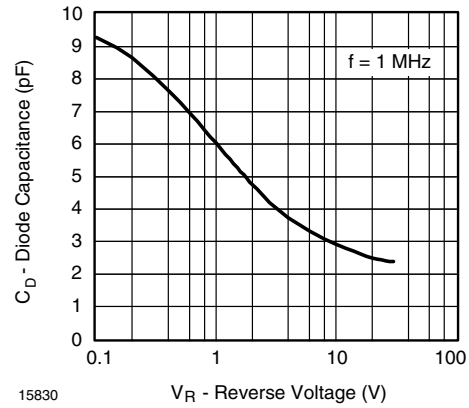


Fig. 4 - Diode Capacitance vs. Reverse Voltage

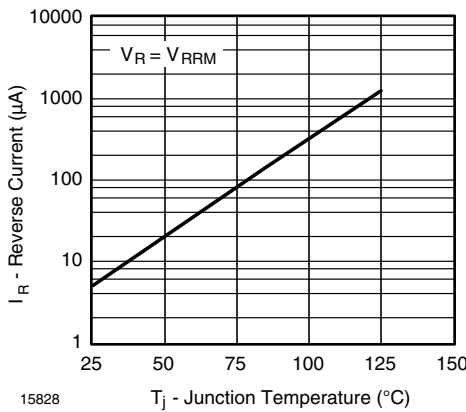


Fig. 2 - Reverse Current vs. Junction Temperature

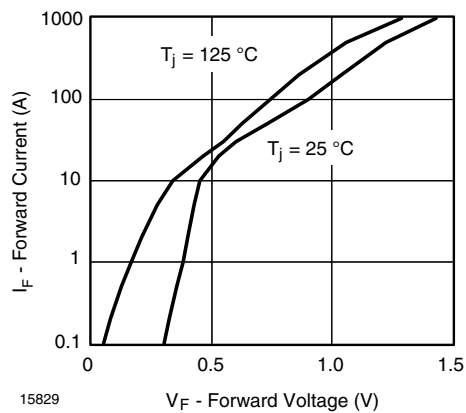
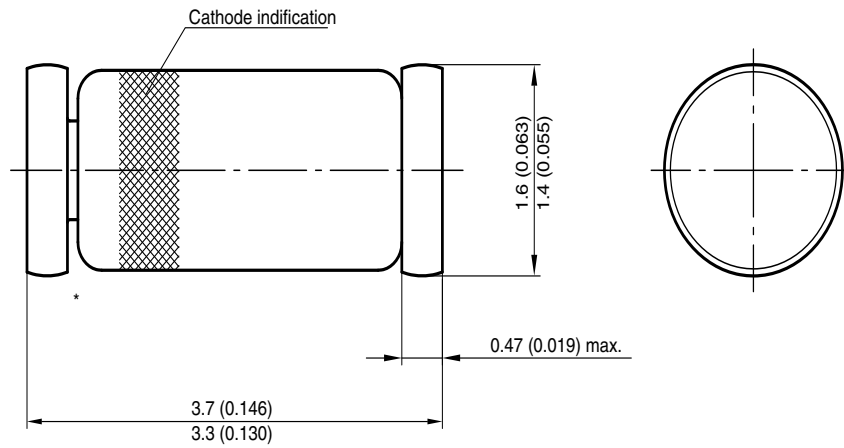


Fig. 3 - Forward Current vs. Forward Voltage

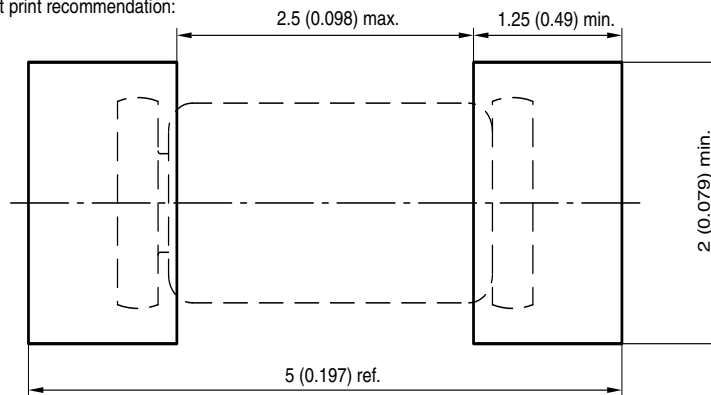


**PACKAGE DIMENSIONS** in millimeters (inches): **MiniMELF SOD-80**



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

Foot print recommendation:



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