

## Small Signal Switching Diodes, Low Leakage Current



### FEATURES

- Silicon planar diodes
- Very low reverse current
- Material categorization:  
For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### APPLICATIONS

- Protection circuits, time delay circuits, peak follower circuits, logarithmic amplifiers

### 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

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### PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
BAQ33	$V_{RRM} = 40\text{ V}$	BAQ33-GS18 or BAQ33-GS08	-	Single diode	Tape and reel
BAQ34	$V_{RRM} = 70\text{ V}$	BAQ34-GS18 or BAQ34-GS08	-	Single diode	Tape and reel
BAQ35	$V_{RRM} = 140\text{ V}$	BAQ35-GS18 or BAQ35-GS08	-	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
Repetitive peak reverse voltage		BAQ33	$V_{RRM}$	40	V
		BAQ34	$V_{RRM}$	70	V
		BAQ35	$V_{RRM}$	140	V
Reverse voltage		BAQ33	$V_R$	30	V
		BAQ34	$V_R$	60	V
		BAQ35	$V_R$	125	V
Peak forward surge current	$t_p = 1\text{ }\mu\text{s}$		$I_{FSM}$	2	A
Forward continuous current			$I_F$	200	mA

### 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 50 mm x 50 mm x 1.6 mm	$R_{thJA}$	500	K/W
Junction temperature		$T_j$	175	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	- 65 to + 175	$^{\circ}\text{C}$



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 100\text{ mA}$		$V_F$			1	V
Reverse current	$E \leq 300\text{ lx}$ , rated $V_R$		$I_R$		1	3	nA
	$E \leq 300\text{ lx}$ , rated $V_R$ , $T_j = 125\text{ }^{\circ}\text{C}$		$I_R$			0.5	$\mu\text{A}$
	$E \leq 300\text{ lx}$ , $V_R = 15\text{ V}$	BAQ33	$I_R$		0.5	1	nA
	$E \leq 300\text{ lx}$ , $V_R = 30\text{ V}$	BAQ34	$I_R$		0.5	1	nA
	$E \leq 300\text{ lx}$ , $V_R = 60\text{ V}$	BAQ35	$I_R$		0.5	1	nA
Breakdown voltage	$I_R = 5\text{ }\mu\text{A}$ , $t_p/T = 0.01$ , $t_p = 0.3\text{ ms}$	BAQ33	$V_{(BR)}$	40			V
	$I_R = 5\text{ }\mu\text{A}$ , $t_p/T = 0.01$ , $t_p = 0.3\text{ ms}$	BAQ34	$V_{(BR)}$	70			V
		BAQ35	$V_{(BR)}$	140			V
Diode capacitance	$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$		$C_D$			3	pF

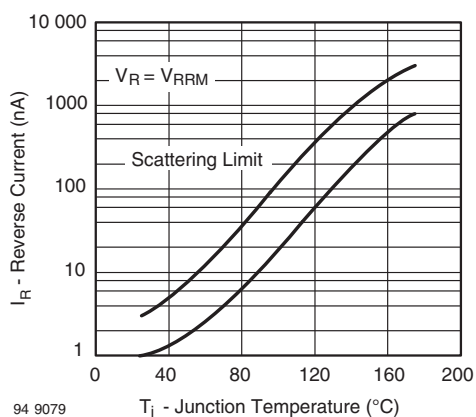
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

Fig. 1 - Reverse Current vs. Junction Temperature

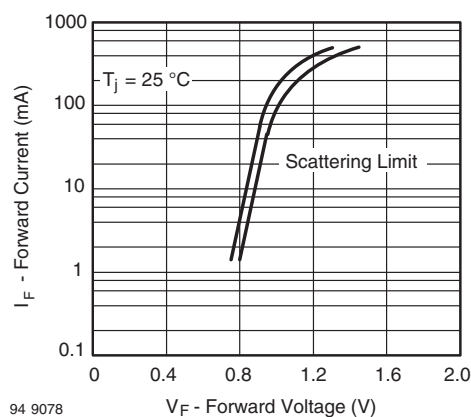
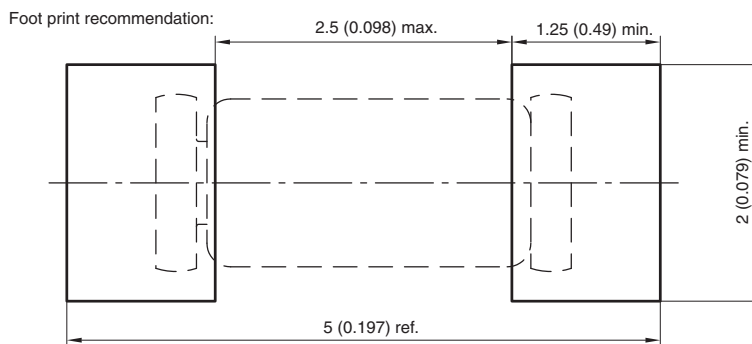
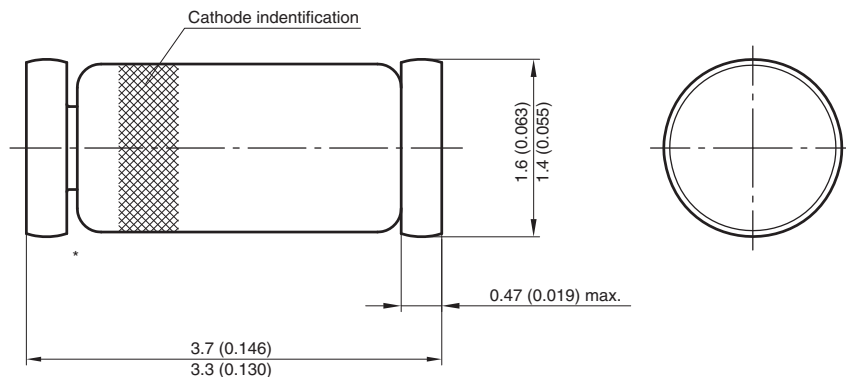


Fig. 2 - Forward Current vs. Forward Voltage



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



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