Vishay Semiconductors

RoHS

COMPLIANT

# Small Signal Switching Diodes, Low Leakage Current



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#### **FEATURES**

- Silicon planar diodes
- Very low reverse current
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

#### APPLICATIONS

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

#### DESIGN SUPPORT TOOLS click logo to get started



#### MECHANICAL DATA

Case: QuadroMELF (SOD-80) Weight: approx. 34 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

PARTS TABLE						
PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS	
BAQ133	$V_{RRM} = 40 V$	BAQ133-GS18 or BAQ133-GS08	-	Single	Tape and reel	
BAQ134	V <sub>RRM</sub> = 70 V	BAQ134-GS18 or BAQ134-GS08	-	Single	Tape and reel	
BAQ135	V <sub>RRM</sub> = 140 V	BAQ135-GS18 or BAQ135-GS08	-	Single	Tape and reel	

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
		BAQ133	V <sub>RRM</sub>	40	V	
Repetitive peak reverse voltage		BAQ134	V <sub>RRM</sub>	70	V	
		BAQ135	V <sub>RRM</sub>	140	V	
		BAQ133	V <sub>R</sub>	30	V	
Reverse voltage		BAQ134	V <sub>R</sub>	60	V	
		BAQ135	V <sub>R</sub>	125	V	
Peak forward surge current	t <sub>p</sub> = 1 μs		I <sub>FSM</sub>	2	А	
Forward continuous current			I <sub>F</sub>	200	mA	

<b>THERMAL CHARACTERISTICS</b> (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>	500	K/W		
Junction temperature		Tj	175	°C		
Storage temperature range		T <sub>stg</sub>	-65 to +175	°C		

Rev. 1.9, 11-Jul-17

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Document Number: 85536

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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25 \text{ °C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 100 mA		V <sub>F</sub>			1	V
	$E \leq 300$ Ix, rated $V_R$		I <sub>R</sub>		1	3	nA
	$E \le 300$ Ix, rated V <sub>R</sub> , T <sub>j</sub> = 125 °C		I <sub>R</sub>			0.5	μA
Reverse current	$E \le 300 \text{ Ix}, \text{ V}_{\text{R}} = 15 \text{ V}$	BAQ133	I <sub>R</sub>		0.5	1	nA
	$E \leq 300 \text{ Ix}, \text{ V}_{\text{R}} = 30 \text{ V}$	BAQ134	I <sub>R</sub>		0.5	1	nA
	$E \leq 300 \; Ix,  V_R = 60 \; V$	BAQ135	I <sub>R</sub>		0.5	1	nA
	$I_R = 5 \ \mu A, \ t_p/T = 0.01, \ t_p = 0.3 \ ms$	BAQ133	V <sub>(BR)</sub>	40			V
Breakdown voltage		BAQ134	V <sub>(BR)</sub>	70			V
		BAQ135	V <sub>(BR)</sub>	140			V
Diode capacitance	$V_{R} = 0, f = 1 MHz$		CD			3	pF

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

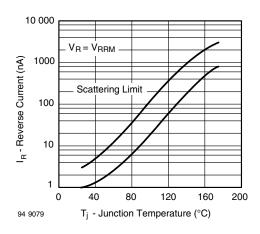


Fig. 1 - Reverse Current vs. Junction Temperature

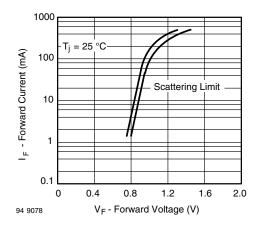


Fig. 2 - Forward Current vs. Forward Voltage

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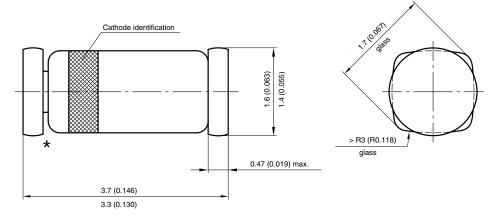
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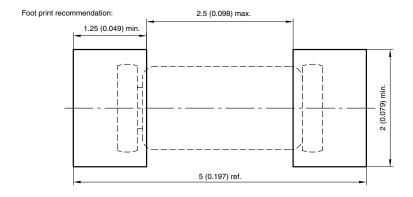
## BAQ133, BAQ134, BAQ135

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



<sup>★</sup> The gap between plug and glass can be either on cathode or anode side



Created - Date: 03.November.2003 Rev. 11 - Date: 07.June 2006 Document no.:6.560-5006.01-4 96 12071



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