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# Band Switching Diodes



### FEATURES

- Silicon epitaxial planar diode switches
- AEC-Q101 qualified
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT

### MECHANICAL DATA

Case: SOD-323

Weight: approx. 4.3 mg

#### Packaging codes/options:

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

08/3K per 7" reel (8 mm tape), 15K/box

### DESCRIPTION

For electric bandswitching in radio and TV tuners in the frequency range of (50 to 1000) MHz. The dynamic forward resistance is constant and very small over a wide range of frequency and forward current. The reverse capacitance is also small and largely independent of the reverse voltage.

PARTS TABLE			
PART	ORDERING CODE	TYPE MARKING	REMARKS
BA782S	BA782S-E3-08 or BA782S-E3-18	R2	Tape and reel
	BA782S-HE3-08 or BA782S-HE3-18		
BA783S	BA783S-E3-08 or BA783S-E3-18	R3	Tape and reel
	BA783S-HE3-08 or BA783S-HE3-18		

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Reverse voltage		V <sub>R</sub>	35	V
Forward continuous current		I <sub>F</sub>	100	mA

THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction temperature		T <sub>j</sub>	125	°C
Storage temperature range		T <sub>stg</sub>	- 55 to + 150	°C
Operating temperature range		T <sub>op</sub>	- 55 to + 125	°C

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °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>			1000	mV
Reverse current	V <sub>R</sub> = 20 V		I <sub>R</sub>			50	nA
Diode capacitance	f = 1 MHz, V <sub>R</sub> = 1 V		C <sub>D1</sub>			1.5	pF
	f = 1 MHz, V <sub>R</sub> = 3 V	BA782S	C <sub>D2</sub>			1.25	pF
Dynamic forward resistance	f = (50 to 1000) MHz, I <sub>F</sub> = 3 mA	BA782S	r <sub>f1</sub>			0.7	Ω
		BA783S	r <sub>f1</sub>			1.2	Ω
	f = (50 to 1000) MHz, I <sub>F</sub> = 10 mA	BA782S	r <sub>f2</sub>			0.5	Ω
		BA783S	r <sub>f2</sub>			0.9	Ω
Series inductance across case			L <sub>S</sub>		2.5		nH

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

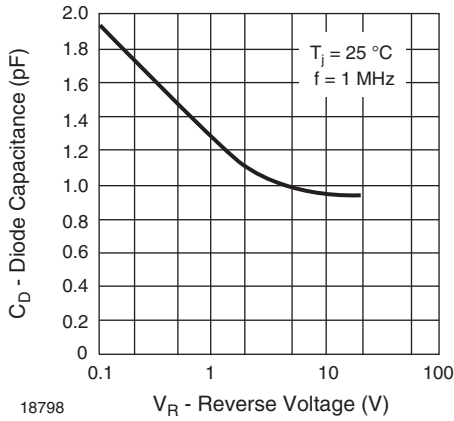


Fig. 1 - Diode Capacitance

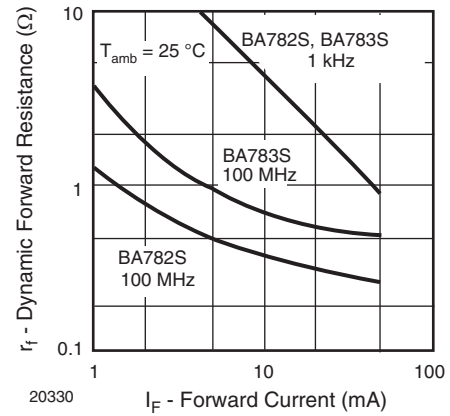
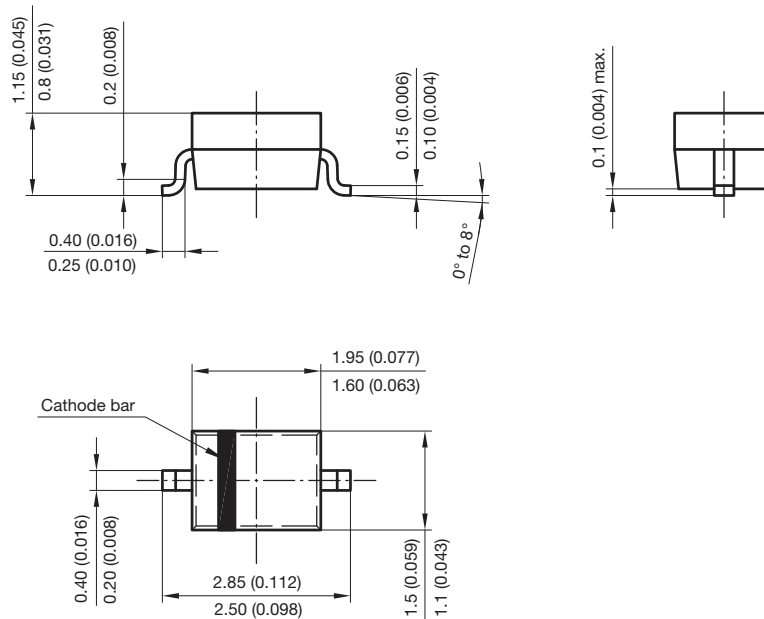
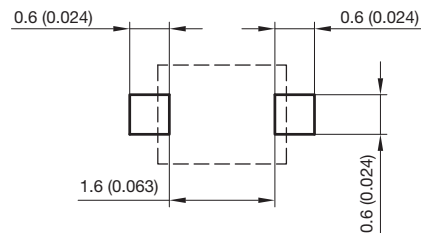


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-323**



Foot print recommendation:



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17443



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