**Vishay Semiconductors** 

## **Band Switching Diodes**

### **FEATURES**

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

#### 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.

PARIS IABLE				
PART	ORDERING CODE	TYPE MARKING	REMARKS	
BA782S	BA782S-E3-08 or BA782S-E3-18	R2	Tape and reel	
BA7023	BA782S-HE3-08 or BA782S-HE3-18	R2		
BA783S	BA783S-E3-08 or BA783S-E3-18	R3	Tape and reel	
	BA783S-HE3-08 or BA783S-HE3-18	nð		
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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		١ <sub>F</sub>	100	mA

<b>THERMAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL VALUE		
Junction temperature		Tj	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
		BA783S	C <sub>D2</sub>			1.2	pF
Dynamic forward resistance	f = (50 to 1000) MHz, $I_F = 3 \text{ mA}$	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

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Document Number: 85709

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**MECHANICAL DATA** 

Weight: approx. 4.3 mg

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Packaging codes/options:

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

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

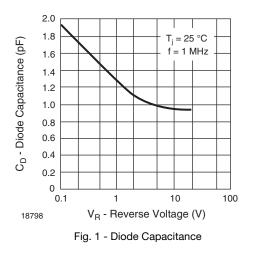
Case: SOD-323





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



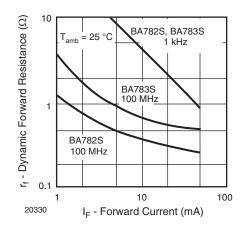
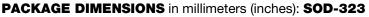
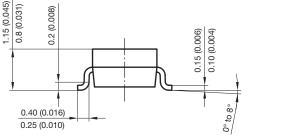
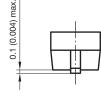
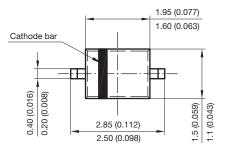


Fig. 2 - Dynamic Forward Resistance vs. Forward Current









Foot print recommendation:



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