Vishay Semiconductors



MECHANICAL DATA

Weight: approx. 10.3 mg

Packaging codes/options:

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

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

Case: SOD-123

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 <u>www.vishay.com/doc?99912</u>

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 | |
| BA782 | BA782-E3-08 or BA782-E3-18 | R2 | Topo and real | |
| | BA782-HE3-08 or BA782-HE3-18 | n2 | Tape and reel | |
| BA783 | BA783-E3-08 or BA783-E3-18 | R3 | Tape and reel | |
| | BA783-HE3-08 or BA783-HE3-18 | R3 | | |

| ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified) | | | | | |
|----------------------------------------------------------------------------------------|-----------------|----------------|------------|----|--|
| PARAMETER | TEST CONDITIONS | SYMBOL | DL VALUE U | | |
| Reverse voltage | | V _R | 35 | V | |
| Forward continuous current | | ١ _F | 100 | mA | |

| THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified) | | | | | |
|---------------------------------------------------------------------------------------|----------------|------------------|----------------|----|--|
| PARAMETER | TEST CONDITION | SYMBOL | SYMBOL VALUE U | | |
| Junction temperature | | Tj | 125 | °C | |
| Storage temperature range | | T _{stg} | - 55 to + 150 | °C | |
| Operating temperature range | | T _{op} | - 55 to + 125 | °C | |

| ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified) | | | | | | | |
|------------------------------------------------------------------------------------|----------------------------------------------|-------|-----------------|------|------|------|------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Forward voltage | I _F = 100 mA | | V _F | | | 1000 | mV |
| Reverse current | V _R = 20 V | | I _R | | | 50 | nA |
| Diode capacitance | f = 1 MHz, V _R = 1 V | | C _{D1} | | | 1.5 | pF |
| | f = 1 MHz, V _R = 3 V | BA782 | C _{D2} | | | 1.25 | pF |
| | | BA783 | C _{D2} | | | 1.2 | pF |
| Dynamic forward resistance | f = (50 to 1000) MHz, $I_F = 3 \text{ mA}$ | BA782 | r _{f1} | | | 0.7 | Ω |
| | | BA783 | r _{f1} | | | 1.2 | Ω |
| | f = (50 to 1000) MHz, I _F = 10 mA | BA782 | r _{f2} | | | 0.5 | Ω |
| | | BA783 | r _{f2} | | | 0.9 | Ω |
| Series inductance across case | | | L _S | | 2.5 | | nH |

Rev. 1.5, 25-Feb-13

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Document Number: 85708

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Pb-free

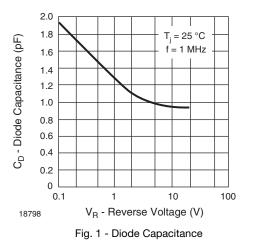
RoHS

COMPLIANT



Vishay Semiconductors

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



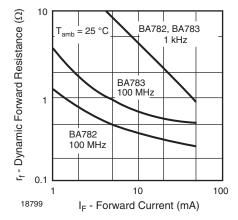
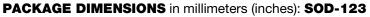
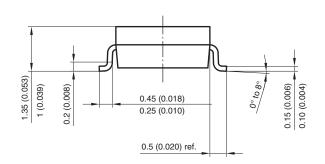
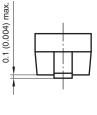
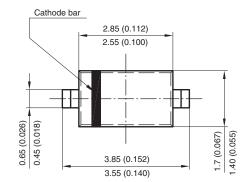


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

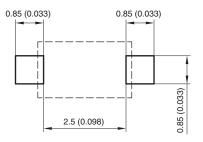








Mounting Pad Layout



Rev. 4 - Date: 24. Sep. 2009 Document no.: S8-V-3910.01-001 (4) 17432

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Document Number: 85708

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