

## Small Signal Switching Diode, High Voltage



### FEATURES

- Silicon epitaxial planar diode
- AEC-Q101 qualified
- Material categorization:  
For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### APPLICATIONS

- General purpose

### MECHANICAL DATA

**Case:** DO-35

**Weight:** approx. 125 mg

**Cathode band color:** black

**Packaging codes/options:**

TR/10K per 13" reel (52 mm tape), 50K/box

TAP/10K per ammpack (52 mm tape), 50K/box

### PARTS TABLE

PART	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
BAY80	BAY80-TR or BAY80-TAP	BAY80	Single diode	Tape and reel/ammpack

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		$V_{RRM}$	150	V
Reverse voltage		$V_R$	120	V
Peak forward surge current	$t_p = 1\text{ }\mu\text{s}$	$I_{FSM}$	1	A
Repetitive peak forward current		$I_{FRM}$	625	mA
Forward continuous current		$I_F$	250	mA
Average forward current		$I_{F(AV)}$	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	$l = 4\text{ mm}$ , $T_L = \text{constant}$	$R_{thJA}$	350	K/W
Junction to ambient air		$T_j$	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	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 0.1\text{ mA}$	$V_F$	400		520	mV
	$I_F = 10\text{ mA}$	$V_F$	630		780	mV
	$I_F = 50\text{ mA}$	$V_F$	730		920	mV
	$I_F = 100\text{ mA}$	$V_F$	780		1000	mV
	$I_F = 150\text{ mA}$	$V_F$			1070	mV
Reverse current	$V_R = 120\text{ V}$	$I_R$			100	nA
	$V_R = 120\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$	$I_R$			100	$\mu\text{A}$
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}, t_p/T = 0.01,$ $t_p = 0.3\text{ ms}$	$V_{(BR)}$	150			V
Diode capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}$	$C_D$		1.5	5	pF
Differential forward resistance	$I_F = 10\text{ mA}$	$r_f$		5		$\Omega$
Reverse recovery time	$I_F = I_R = 30\text{ mA}, I_R = 3\text{ mA},$ $R_L = 100\text{ }\Omega$	$t_{rr}$			50	ns

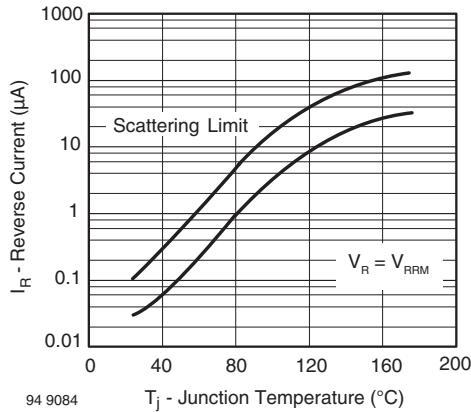
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

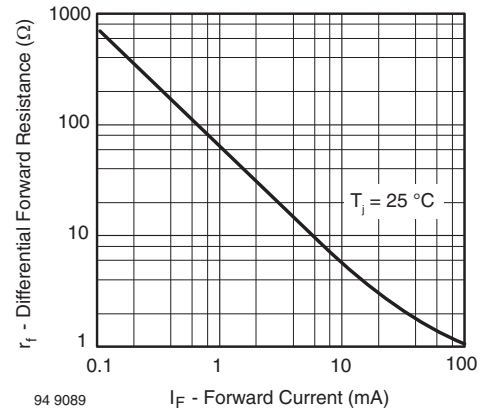


Fig. 3 - Differential Forward Resistance vs. Forward Current

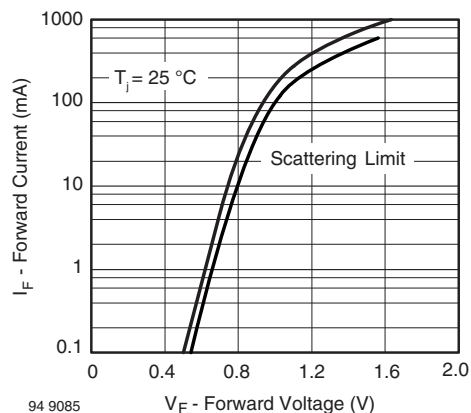
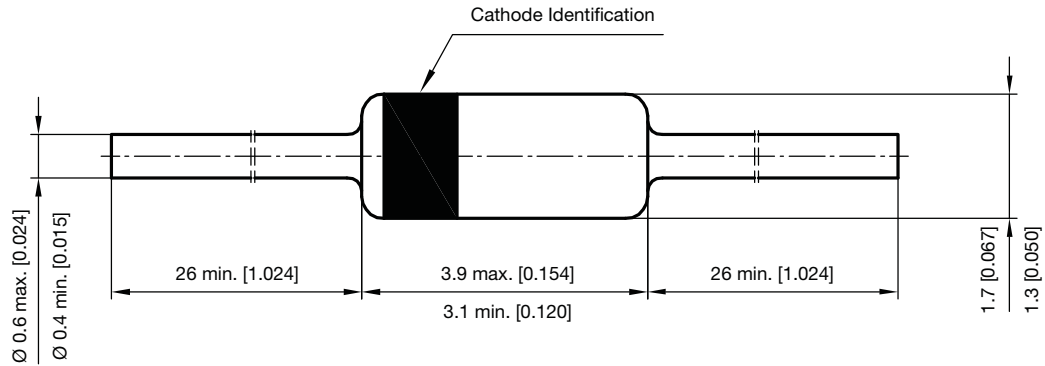


Fig. 2 - Forward Current vs. Forward Voltage

**PACKAGE DIMENSIONS** in millimeters (inches): **DO-35**



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