



## Small Signal Switching Diodes, High Voltage



### FEATURES

- Silicon epitaxial planar diodes
- 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 purposes

### 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	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
BAV17	$V_{RRM} = 25\text{ V}$	BAV17-TR or BAV17-TAP	BAV17	Single diode	Tape and reel/ammopack
BAV18	$V_{RRM} = 60\text{ V}$	BAV18-TR or BAV18-TAP	BAV18	Single diode	Tape and reel/ammopack
BAV19	$V_{RRM} = 120\text{ V}$	BAV19-TR or BAV19-TAP	BAV19	Single diode	Tape and reel/ammopack
BAV20	$V_{RRM} = 200\text{ V}$	BAV20-TR or BAV20-TAP	BAV20	Single diode	Tape and reel/ammopack
BAV21	$V_{RRM} = 250\text{ V}$	BAV21-TR or BAV21-TAP	BAV21	Single diode	Tape and reel/ammopack

ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		BAV17	$V_{RRM}$	25	V
		BAV18	$V_{RRM}$	60	V
		BAV19	$V_{RRM}$	120	V
		BAV20	$V_{RRM}$	200	V
		BAV21	$V_{RRM}$	250	V
Reverse voltage		BAV17	$V_R$	20	V
		BAV18	$V_R$	50	V
		BAV19	$V_R$	100	V
		BAV20	$V_R$	150	V
		BAV21	$V_R$	200	V
Forward continuous current			$I_F$	250	mA
Peak forward surge current	$t_p = 1\text{ s}, T_j = 25\text{ }^{\circ}\text{C}$		$I_{FSM}$	1	A
Forward peak current	$f = 50\text{ Hz}$		$I_{FRM}$	625	mA
Power dissipation			$P_{tot}$	500	mW



THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	l = 4 mm, T <sub>L</sub> = constant	R <sub>thJA</sub>	300	K/W
Junction temperature		T <sub>j</sub>	175	°C
Storage temperature range		T <sub>stg</sub>	- 65 to + 175	°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	BAV17	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 50 V	BAV18	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 100 V	BAV19	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 150 V	BAV20	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 200 V	BAV21	I <sub>R</sub>			100	nA
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 20 V	BAV17	I <sub>R</sub>			15	µA
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 50 V	BAV18	I <sub>R</sub>			15	µA
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 100 V	BAV19	I <sub>R</sub>			15	µA
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 150 V	BAV20	I <sub>R</sub>			15	µA
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 200 V	BAV21	I <sub>R</sub>			15	µA
Breakdown voltage	I <sub>R</sub> = 5 µA, t <sub>p</sub> /T = 0.01, t <sub>p</sub> = 0.3 ms	BAV17	V <sub>(BR)</sub>	25			V
		BAV18	V <sub>(BR)</sub>	60			V
		BAV19	V <sub>(BR)</sub>	120			V
		BAV20	V <sub>(BR)</sub>	200			V
		BAV21	V <sub>(BR)</sub>	250			V
Diode capacitance	V <sub>R</sub> = 0 V, f = 1 MHz,		C <sub>D</sub>		1.5		pF
Differential forward resistance	I <sub>F</sub> = 10 mA		r <sub>f</sub>		5		Ω
Reverse recovery time	I <sub>F</sub> = I <sub>R</sub> = 30 mA, i <sub>R</sub> = 3 mA R <sub>L</sub> = 100 Ω		t <sub>rr</sub>			50	ns

**TYPICAL CHARACTERISTICS** (T<sub>amb</sub> = 25 °C, unless otherwise specified)

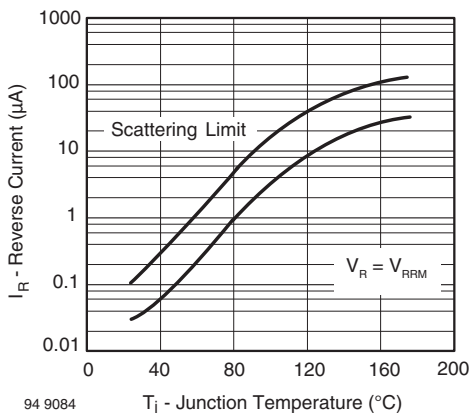


Fig. 1 - Reverse Current vs. Junction Temperature

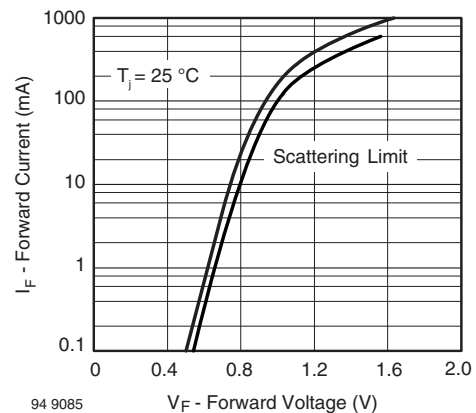
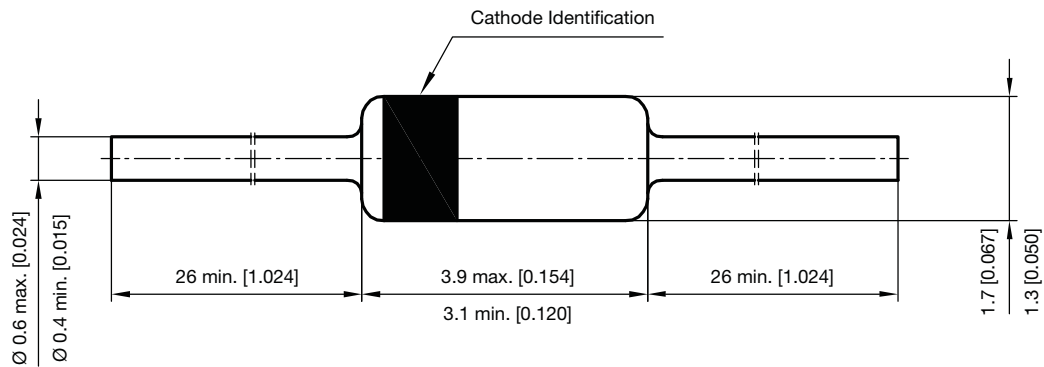


Fig. 2 - Forward Current vs. Forward Voltage



Fig. 3 - Differential Forward Resistance vs. Forward Current

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



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