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Vishay Semiconductors

## **Small Signal Switching Diodes, High Voltage**



#### **FEATURES**

- Silicon epitaxial planar diodes
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

# (PV)



#### ROHS COMPLIANT HALOGEN FREE

#### **APPLICATIONS**

· General purposes

### **LINKS TO ADDITIONAL RESOURCES**









#### **MECHANICAL DATA**

Case: DO-35 (DO-204AH)
Weight: approx. 125 mg
Cathode band color: black
Packaging codes / options:

TR/10K per 14" reel (52 mm tape), 50K/box TAP/10K per ammopack (52 mm tape), 50K/box

PARTS TABLE							
PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS		
BAV17	V <sub>RRM</sub> = 25 V	BAV17-TR or BAV17-TAP	BAV17	Single	Tape and reel / ammopack		
BAV18	V <sub>RRM</sub> = 60 V	BAV18-TR or BAV18-TAP	BAV18	Single	Tape and reel / ammopack		
BAV19	V <sub>RRM</sub> = 120 V	BAV19-TR or BAV19-TAP	BAV19	Single	Tape and reel / ammopack		
BAV20	V <sub>RRM</sub> = 200 V	BAV20-TR or BAV20-TAP	BAV20	Single	Tape and reel / ammopack		
BAV21	V <sub>RRM</sub> = 250 V	BAV21-TR or BAV21-TAP	BAV21	Single	Tape and reel / ammopack		

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

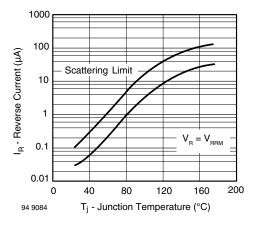


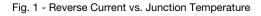
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THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Thermal resistance junction to ambient air	I = 4 mm, T <sub>L</sub> = constant	R <sub>thJA</sub>	300	K/W		
Junction temperature		Tj	175	°C		
Storage temperature range		T <sub>stg</sub>	-65 to +175	°C		
Operating temperature range		T <sub>op</sub>	-55 to +175	°C		

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 100 mA		$V_{F}$			1	V
	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
Dayawaa ayywant	V <sub>R</sub> = 200 V	BAV21	I <sub>R</sub>			100	nA
Reverse current	$T_j = 100 ^{\circ}\text{C},  V_R = 20 ^{\circ}\text{V}$	BAV17	I <sub>R</sub>			15	μΑ
	$T_j = 100 ^{\circ}\text{C},  V_R = 50 ^{\circ}\text{V}$	BAV18	I <sub>R</sub>			15	μΑ
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 100 V	BAV19	I <sub>R</sub>			15	μΑ
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 150 V	BAV20	I <sub>R</sub>			15	μΑ
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 200 V	BAV21	I <sub>R</sub>			15	μΑ
Breakdown voltage	$I_R = 5 \mu A, t_p/T = 0.01,$ $t_p = 0.3 \text{ ms}$	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	$V_R = 0 V, f = 1 MHz,$		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	$I_F = I_R = 30$ mA, $i_R = 3$ mA $R_L = 100 \Omega$		t <sub>rr</sub>			50	ns

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





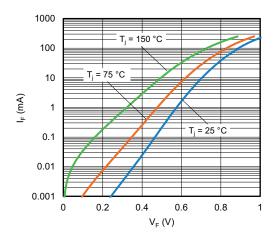
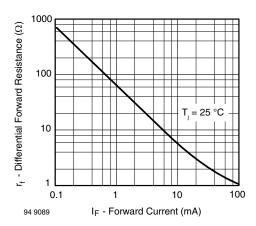


Fig. 2 - Forward Current vs. Forward Voltage,  $I_{\text{F}}$  vs.  $V_{\text{F}}$ 

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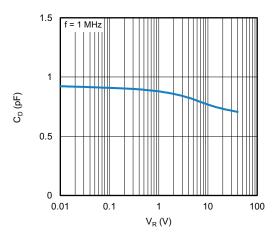
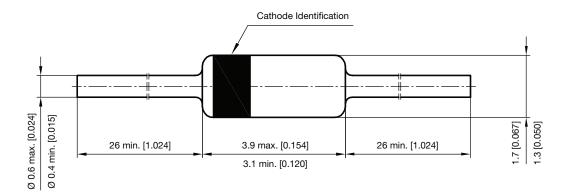


Fig. 3 - Differential Forward Resistance vs. Forward Current

Fig. 4 - Typical Capacitance vs. Reverse Voltage, C<sub>D</sub> vs. V<sub>R</sub>

### PACKAGE DIMENSIONS in millimeters (inches): DO-35 (DO-204AH)



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