

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



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/ammpack
BAV18	$V_{RRM} = 60\text{ V}$	BAV18-TR or BAV18-TAP	BAV18	Single diode	Tape and reel/ammpack
BAV19	$V_{RRM} = 120\text{ V}$	BAV19-TR or BAV19-TAP	BAV19	Single diode	Tape and reel/ammpack
BAV20	$V_{RRM} = 200\text{ V}$	BAV20-TR or BAV20-TAP	BAV20	Single diode	Tape and reel/ammpack
BAV21	$V_{RRM} = 250\text{ V}$	BAV21-TR or BAV21-TAP	BAV21	Single diode	Tape and reel/ammpack

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** ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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}	300	K/W
Junction temperature		T_j	175	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	- 65 to + 175	$^{\circ}\text{C}$

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

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 100\text{ mA}$		V_F			1000	mV
Reverse current	$V_R = 20\text{ V}$	BAV17	I_R			100	nA
	$V_R = 50\text{ V}$	BAV18	I_R			100	nA
	$V_R = 100\text{ V}$	BAV19	I_R			100	nA
	$V_R = 150\text{ V}$	BAV20	I_R			100	nA
	$V_R = 200\text{ V}$	BAV21	I_R			100	nA
	$T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 20\text{ V}$	BAV17	I_R			15	μA
	$T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 50\text{ V}$	BAV18	I_R			15	μA
	$T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 100\text{ V}$	BAV19	I_R			15	μA
	$T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 150\text{ V}$	BAV20	I_R			15	μA
	$T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 200\text{ V}$	BAV21	I_R			15	μA
Breakdown voltage	$I_R = 5\text{ }\mu\text{A}$, $t_p/T = 0.01$, $t_p = 0.3\text{ ms}$	BAV17	$V_{(BR)}$	25			V
		BAV18	$V_{(BR)}$	60			V
		BAV19	$V_{(BR)}$	120			V
		BAV20	$V_{(BR)}$	200			V
		BAV21	$V_{(BR)}$	250			V
Diode capacitance	$V_R = 0\text{ V}$, $f = 1\text{ MHz}$,		C_D		1.5		pF
Differential forward resistance	$I_F = 10\text{ mA}$		r_f		5		Ω
Reverse recovery time	$I_F = I_R = 30\text{ mA}$, $i_R = 3\text{ mA}$ $R_L = 100\text{ }\Omega$		t_{rr}			50	ns

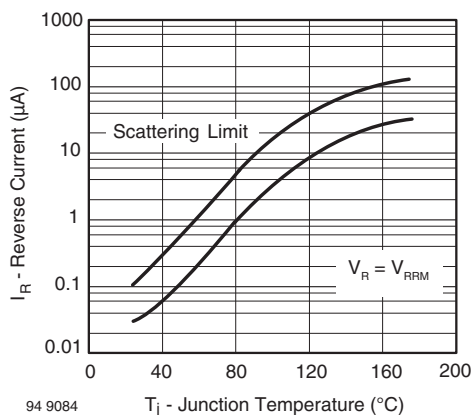
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Fig. 1 - Reverse Current vs. Junction Temperature

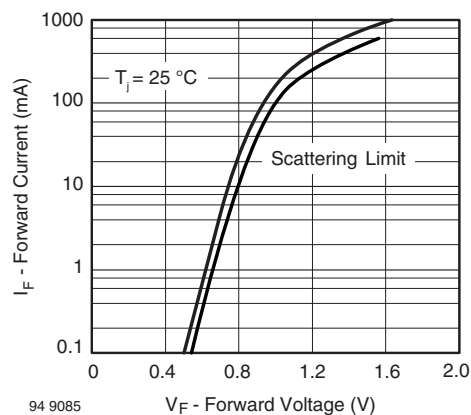


Fig. 2 - Forward Current vs. Forward Voltage

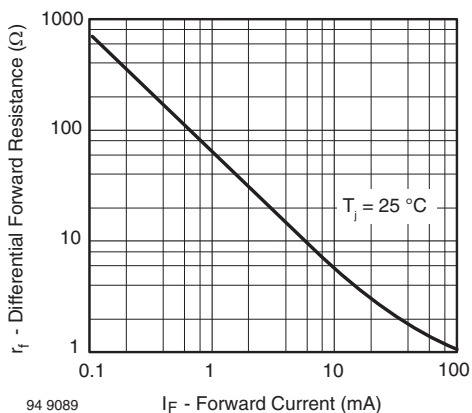
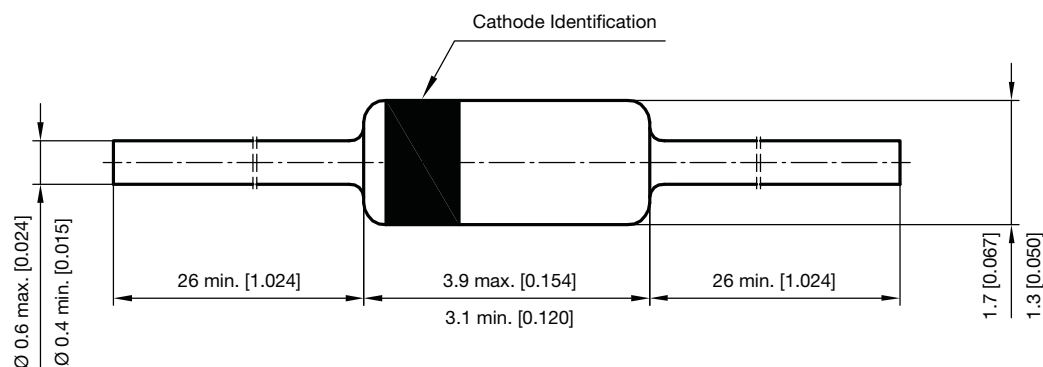


Fig. 3 - Differential Forward Resistance vs. Forward Current

PACKAGE DIMENSIONS in millimeters (inches): DO-35



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