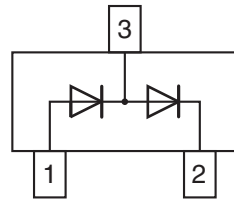


## Small Signal Switching Diode, Dual in Series



18109

### FEATURES

- Fast switching speed
- High conductance
- Surface mount package ideally suited for automatic insertion
- Connected in series
- AEC-Q101 qualified available
- 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 [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

**DESIGN SUPPORT TOOLS** click logo to get started


### MECHANICAL DATA

**Case:** SOT-23

**Weight:** approx. 8.8 mg

**Packaging codes / options:**

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

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

PARTS TABLE				
PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
BAV99	BAV99-E3-08 or BAV99-E3-18	Dual serial	JE	Tape and reel
	BAV99-HE3-08 or BAV99-HE3-18			

ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Non repetitive peak reverse voltage		$V_{RM}$	100	V	
Repetitive peak reverse voltage = working peak reverse voltage = DC blocking voltage		$V_{RRM} = V_{RWM} = V_R$	70		
Peak forward surge current	$t_p = 1\text{ s}$	$I_{FSM}$	1	A	
	$t_p = 1\text{ }\mu\text{s}$		4.5		
Average forward current	Half wave rectification with resistive load and $f \geq 50\text{ MHz}$ , on ceramic substrate 10 mm x 8 mm x 0.7 mm	$I_{F(AV)}$	150	mA	
Forward current	On ceramic substrate 10 mm x 8 mm x 0.7 mm	$I_F$	250		
Power dissipation	On ceramic substrate 10 mm x 8 mm x 0.7 mm	$P_{tot}$	300	mW	

THERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Junction ambient	On ceramic substrate 10 mm x 8 mm x 0.7 mm	$R_{thJA}$	430	K/W	
Junction and storage temperature range		$T_J = T_{stg}$	-55 to +150	$^{\circ}\text{C}$	
Operating temperature range		$T_{op}$	-55 to +150	$^{\circ}\text{C}$	

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 1\text{ mA}$	$V_F$			0.715	V
	$I_F = 10\text{ mA}$				0.855	V
	$I_F = 50\text{ mA}$				1	V
	$I_F = 150\text{ mA}$				1.25	V
Reverse current	$V_R = 70\text{ V}$	$I_R$			2500	nA
	$V_R = 70\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$				50	$\mu\text{A}$
	$V_R = 25\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$				30	$\mu\text{A}$
Diode capacitance	$V_R = 0, f = 1\text{ MHz}$	$C_D$			1.5	pF
Reverse recovery time	$I_F = 10\text{ mA}$ to $i_R = 1\text{ mA}$ , $V_R = 6\text{ V}, R_L = 100\text{ }\Omega$	$t_{rr}$			6	ns

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

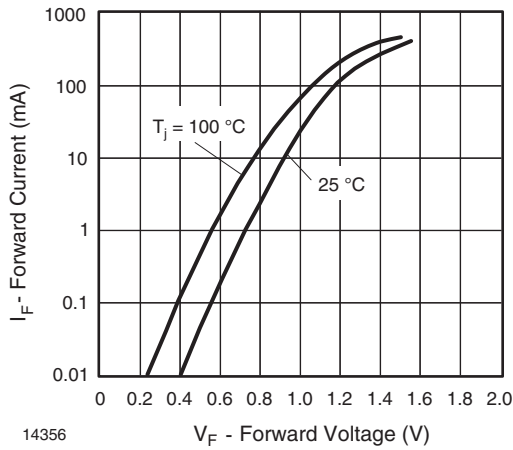


Fig. 1 - Forward Current vs. Forward Voltage

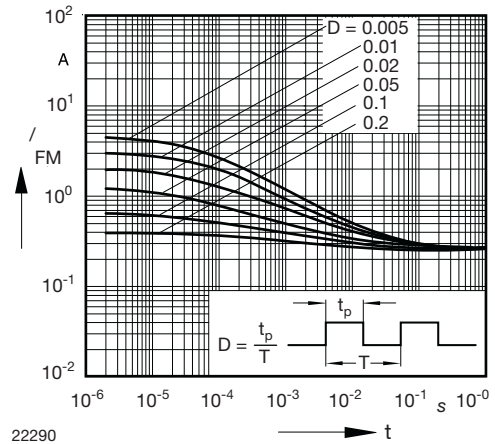


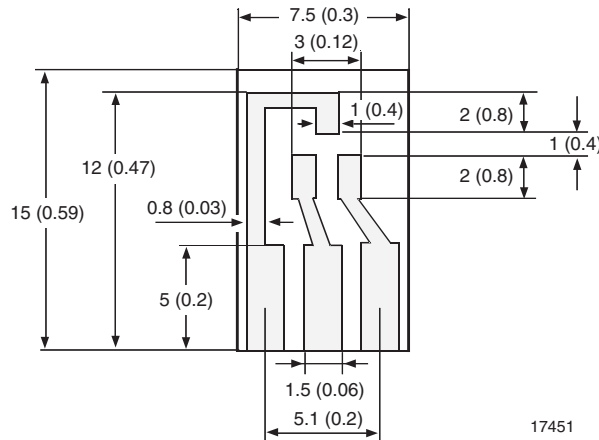
Fig. 2 - Peak forward current /  $F_M = f(t_p)$

**LAYOUT FOR  $R_{thJA}$  TEST**

Thickness:

Fiberglass 1.5 mm (0.059 inches)

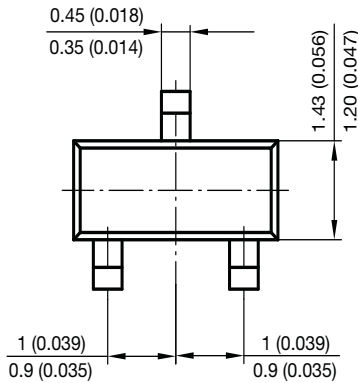
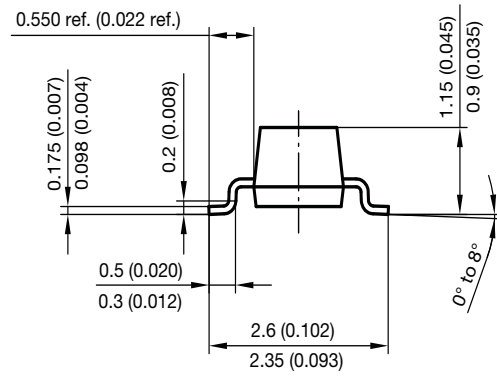
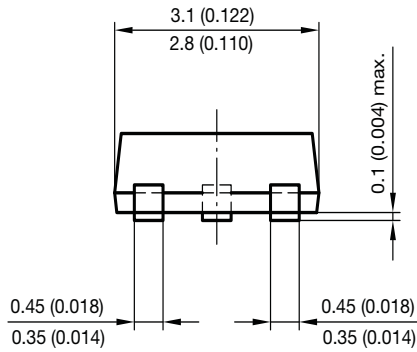
Copper leads 0.3 mm (0.012 inches)



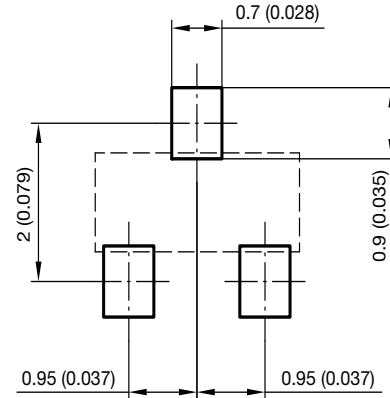
17451



PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:



Document no.: 6.541-5014.01-4  
Rev. 8 - Date: 23.Sept.2009  
17418



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