Vishay Semiconductors



Fast Avalanche Sinterglass Diode



949539

MECHANICAL DATA

Case: SOD-57

Terminals: plated axial leads, solderable per MIL-STD-750,

method 2026

Polarity: color band denotes cathode end

Mounting position: any **Weight:** approx. 369 mg

FEATURES

- Glass passivated junction
- · Hermetically sealed package
- Low reverse current
- · Soft recovery characteristics
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition





ROHS COMPLIANT HALOGEN FREE

APPLICATIONS

 Fast rectification and switching diode for example for TV-line output circuits and switch mode power supply

PARTS TABLE				
PART	TYPE DIFFERENTIATION	PACKAGE		
BYV12	V _R = 100 V; I _{FAV} = 1.5 A	SOD-57		
BYV13	V _R = 400 V; I _{FAV} = 1.5 A	SOD-57		
BYV14	$V_R = 600 \text{ V}; I_{FAV} = 1.5 \text{ A}$	SOD-57		
BYV15	V _R = 800 V; I _{FAV} = 1.5 A	SOD-57		
BYV16	V _R = 1000 V; I _{FAV} = 1.5 A	SOD-57		

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
Reverse voltage = repetitive peak reverse voltage	See electrical characteristics	BYV12	$V_R = V_{RRM}$	100	V	
		BYV13	$V_R = V_{RRM}$	400	V	
		BYV14	$V_R = V_{RRM}$	600	V	
Tovolco voltago		BYV15	$V_R = V_{RRM}$	800	V	
		BYV16	$V_R = V_{RRM}$	1000	V	
Peak forward surge current	t _p = 10 ms, half sine wave		I _{FSM}	40	Α	
Repetitive peak forward current			I _{FRM}	9	Α	
Average forward current	φ = 180°		I _{FAV}	1.5	Α	
Non repetitive reverse avalanche energy	I _{(BR)R} = 0.4 A		E _R	10	mJ	
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to + 175	°C	

MAXIMUM THERMAL RESISTANCE (T _{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction ambient	Lead length I = 10 mm, T _L = constant	R_{thJA}	45	K/W
Junction ambient	On PC board with spacing 25 mm	R_{thJA}	100	K/W



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ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 1 A		V_{F}	-	-	1.5	V
Reverse current	$V_R = V_{RRM}$		I _R	-	1	5	μΑ
	$V_R = V_{RRM}, T_j = 150 ^{\circ}C$		I _R	-	60	150	μΑ
Reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1 \text{ A}, I_R = 0.25 \text{ A}$		t _{rr}	-	-	300	ns
Reverse recovery charge	I _F = 1 A, dI/dt = 5 A/μs		Q _{rr}	-	-	200	nC

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

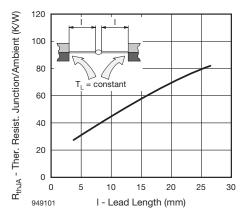


Fig. 1 - Typ. Thermal Resistance vs. Lead Length

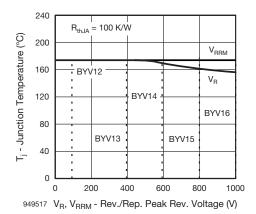


Fig. 2 - Junction Temperature vs. Reverse/Repetitive Peak Reverse Voltage

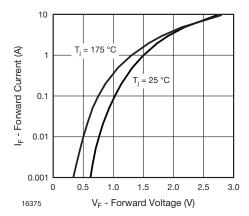


Fig. 3 - Forward Current vs. Forward Voltage

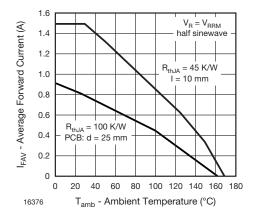


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

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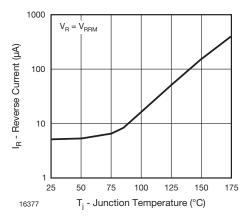


Fig. 5 - Reverse Current vs. Junction Temperature

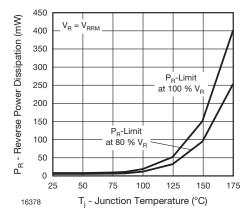


Fig. 6 - Max. Reverse Power Dissipation vs. Junction Temperature

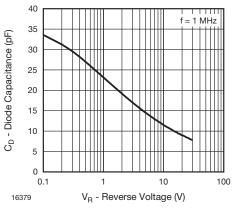


Fig. 7 - Diode Capacitance vs. Reverse Voltage

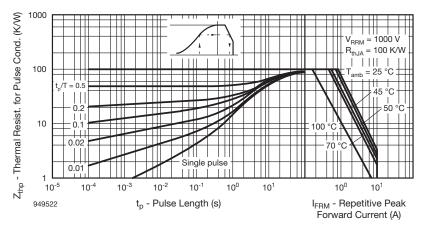
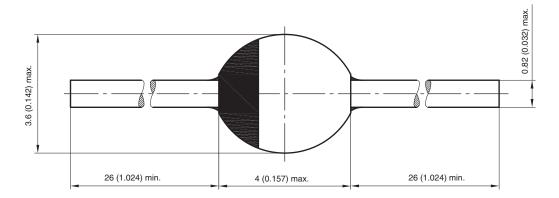


Fig. 8 - Thermal Response



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PACKAGE DIMENSIONS in millimeters (inches): SOD-57



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