

Vishay Semiconductors

Standard Avalanche Sinterglass Diode



949539

FEATURES

- · Controlled avalanche characteristics
- · Glass passivated junction
- · Hermetically sealed package
- Low reverse current
- · High surge current capability
- Material categorization:
 For definitions of compliance please see www.vishay.com/doc?99912





ROHS COMPLIANT HALOGEN FREE

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

APPLICATIONS

General purpose

ORDERING INFORMATION (Example)						
DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY			
BY527	BY527TR	5000 per 10" tape and reel	25 000			
BY527	BY527TAP	5000 per ammopack	25 000			

PARTS TABLE					
PART	TYPE DIFFERENTIATION	PACKAGE			
BY527	V _R = 800 V; I _{F(AV)} = 2 A	SOD-57			

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
Reverse voltage	See electrical characteristics	BY527	V _R	800	V	
Reverse voltage, non repetitive	I _R = 100 μA	BY527	V _{RSM}	1250	V	
Peak forward surge current	$t_p = 10$ ms, half sine wave		I _{FSM}	50	Α	
Repetitive peak forward current			I _{FRM}	12	Α	
Average forward current	φ = 180°		I _{F(AV)}	2	Α	
Pulse avalanche peak power	T_j = 175 °C, t_p = 20 μ s, half sinus wave		P_R	1000	W	
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	I _{(BR)R} = 1 A, T _j = 175 °C		E _R	20	mJ	
i ² t rating			i ² t	8	A ² s	
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	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 1 A	V_{F}	-	0.9	1	V
Forward voltage	I _F = 10 A	V_{F}	-	-	1.65	V
Reverse current	V _R = 800 V	I _R	-	0.1	1	μA
neverse current	V _R = 800 V, T _j = 100 °C	I _R	-	5	10	μA
Breakdown voltage	$I_R = 100 \mu A, t_p/T = 0.01, t_p = 0.3 \text{ ms}$	V _(BR)	1250	-	-	V
Diode capacitance	$V_R = 4 V, f = 1 MHz$	C_D	-	16	-	pF
Reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1 \text{ A}, i_R = 0.25 \text{ A}$	t _{rr}	-	-	4	μs
Theverse recovery time	$I_F = 1 \text{ A}, dI/dt = 5 \text{ A/}\mu\text{s}, V_R = 50 \text{ V}$	t _{rr}	-		4	μs
Reverse recovery charge	$I_F = 1 A$, $dI/dt = 5 A/\mu s$	Q_{rr}	-	-	3	μC

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

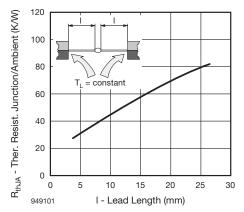


Fig. 1 - Typ. Thermal Resistance vs. Lead Length

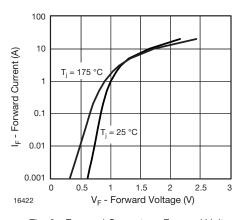


Fig. 2 - Forward Current vs. Forward Voltage

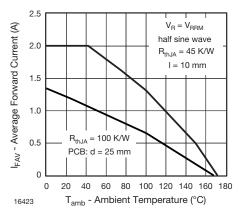


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

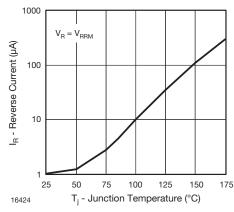


Fig. 4 - Reverse Current vs. Junction Temperature



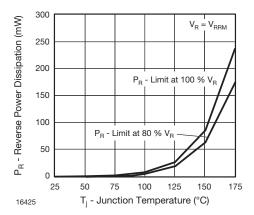


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

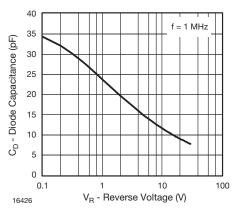


Fig. 6 - Diode Capacitance vs. Reverse Voltage

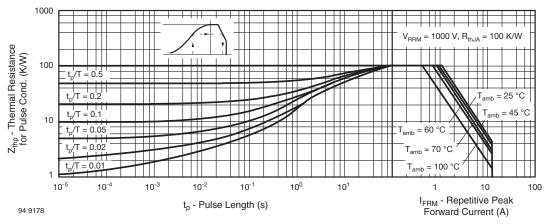
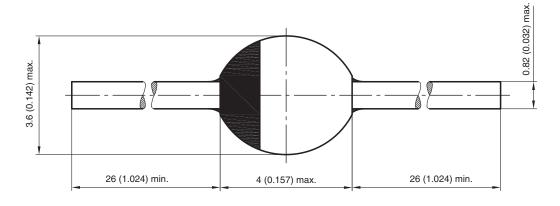


Fig. 7 - Thermal Response

PACKAGE DIMENSIONS in millimeters (inches): SOD-57



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