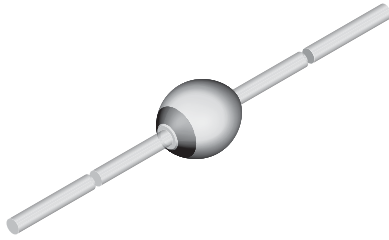


Standard Avalanche Sinterglass Diode



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 ammpack	25 000

PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
BY527	$V_R = 800 \text{ V}$; $I_{F(AV)} = 2 \text{ A}$	SOD-57

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25 \text{ }^\circ\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Reverse voltage	See electrical characteristics	BY527	V_R	800	V
Reverse voltage, non repetitive	$I_R = 100 \text{ } \mu\text{A}$	BY527	V_{RSM}	1250	V
Peak forward surge current	$t_p = 10 \text{ ms}$, half sine wave		I_{FSM}	50	A
Repetitive peak forward current			I_{FRM}	12	A
Average forward current	$\phi = 180^\circ$		$I_{F(AV)}$	2	A
Pulse avalanche peak power	$T_j = 175 \text{ }^\circ\text{C}$, $t_p = 20 \text{ } \mu\text{s}$, half sinus wave		P_R	1000	W
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R} = 1 \text{ A}$, $T_j = 175 \text{ }^\circ\text{C}$		E_R	20	mJ
i^2t rating			$i^2 t$	8	$\text{A}^2 \text{ s}$
Junction and storage temperature range			$T_j = T_{stg}$	-55 to + 175	$^\circ\text{C}$

MAXIMUM THERMAL RESISTANCE ($T_{amb} = 25 \text{ }^\circ\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction ambient	Lead length $l = 10 \text{ mm}$, $T_L = \text{constant}$	R_{thJA}	45	K/W
	On PC board with spacing 25 mm	R_{thJA}	100	K/W

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 1\text{ A}$	V_F	-	0.9	1	V
	$I_F = 10\text{ A}$	V_F	-	-	1.65	V
Reverse current	$V_R = 800\text{ V}$	I_R	-	0.1	1	μA
	$V_R = 800\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	I_R	-	5	10	μA
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}, t_p/T = 0.01, t_p = 0.3\text{ ms}$	$V_{(BR)}$	1250	-	-	V
Diode capacitance	$V_R = 4\text{ V}, f = 1\text{ MHz}$	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
	$I_F = 1\text{ A}, di/dt = 5\text{ A}/\mu\text{s}, V_R = 50\text{ V}$	t_{rr}	-	-	4	μs
Reverse recovery charge	$I_F = 1\text{ A}, di/dt = 5\text{ A}/\mu\text{s}$	Q_{rr}	-	-	3	μC

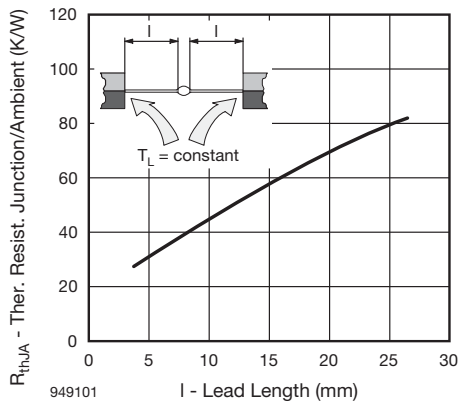
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


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

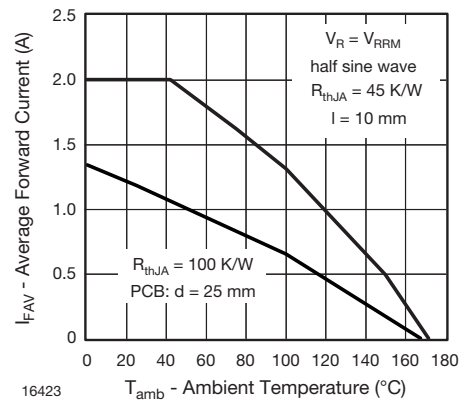


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

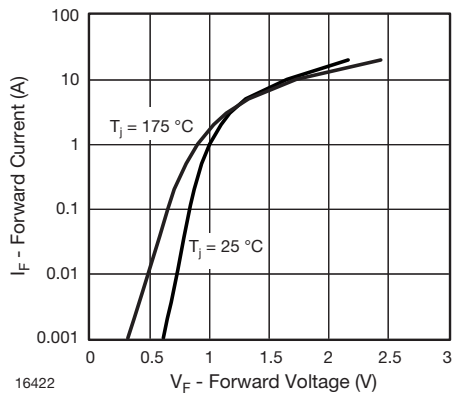


Fig. 2 - Forward Current vs. Forward Voltage

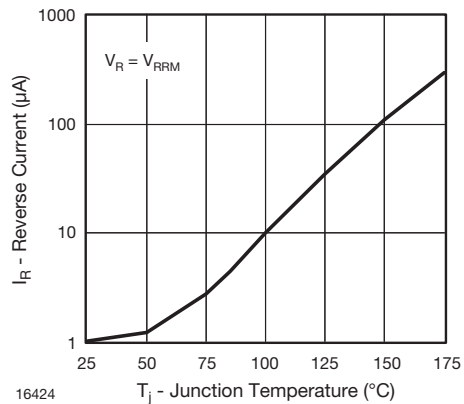


Fig. 4 - Reverse Current vs. Junction Temperature

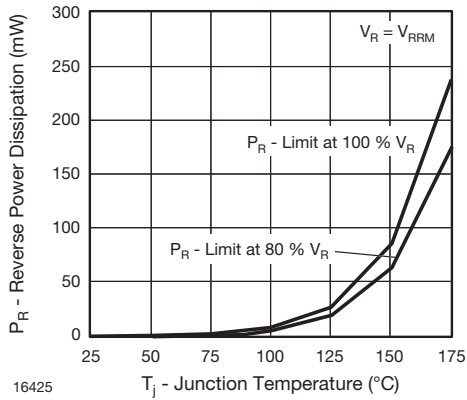


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

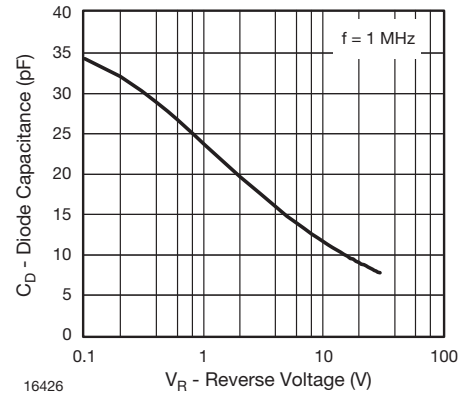


Fig. 6 - Diode Capacitance vs. Reverse Voltage

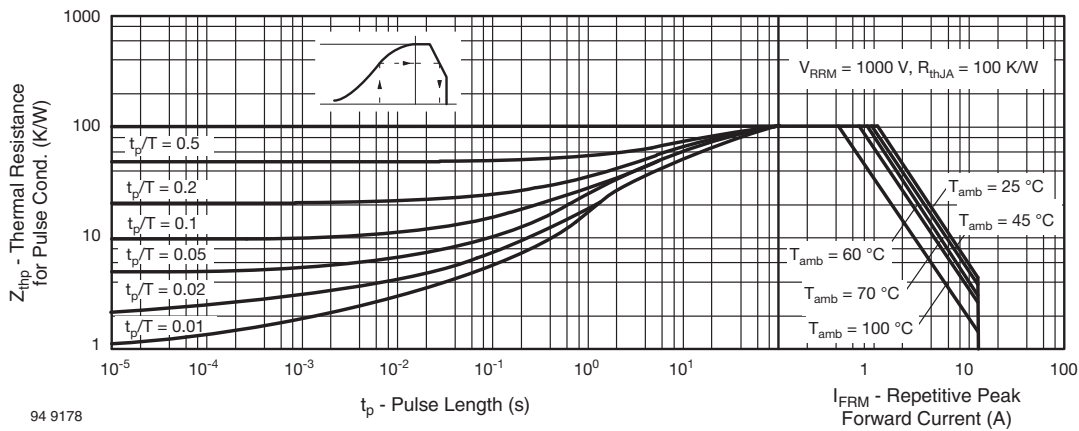
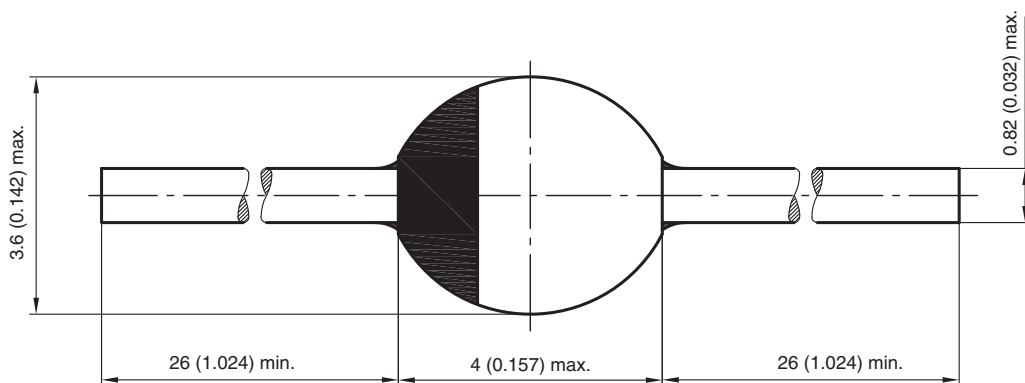


Fig. 7 - Thermal Response

PACKAGE DIMENSIONS in millimeters (inches): **SOD-57**



20543
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