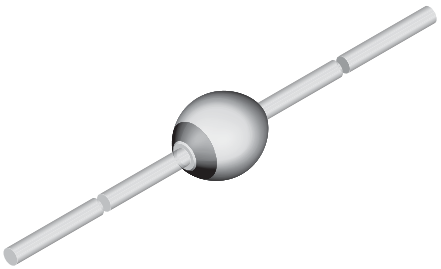
Fast Avalanche Sinterglass Diode



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FEATURES

- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- Soft recovery characteristics
- Material categorization:
  For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

APPLICATIONS

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

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

ORDERING INFORMATION (Example)

DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY
BYV16	BYV16-TR	5000 per 10" tape and reel	25 000
BYV16	BYV16-TAP	5000 per ammopack	25 000

PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
BYV12	V_R = 100 V; $I_{F(AV)}$ = 1.5 A	SOD-57
BYV13	V_R = 400 V; $I_{F(AV)}$ = 1.5 A	SOD-57
BYV14	V_R = 600 V; $I_{F(AV)}$ = 1.5 A	SOD-57
BYV15	V_R = 800 V; $I_{F(AV)}$ = 1.5 A	SOD-57
BYV16	V_R = 1000 V; $I_{F(AV)}$ = 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
		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	A
Repetitive peak forward current			I_{FRM}	9	A
Average forward current	φ = 180°		$I_{F(AV)}$	1.5	A
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 l = 10 mm, T_L = constant	R_{thJA}	45	K/W
	On PC board with spacing 25 mm	R_{thJA}	100	K/W

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	µA
	$V_R = V_{RRM}$, T_j = 150 °C		I_R	-	60	150	µA
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, i_R = 0.25 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)

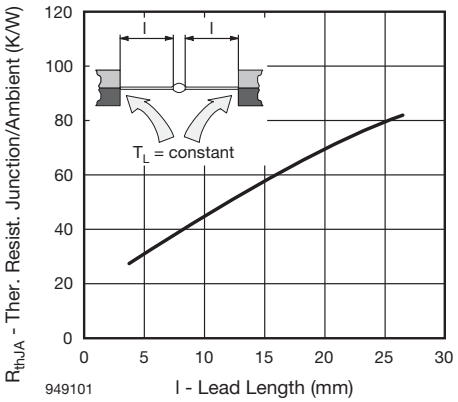


Fig. 1 - Typ. Thermal Resistance vs. Lead Length

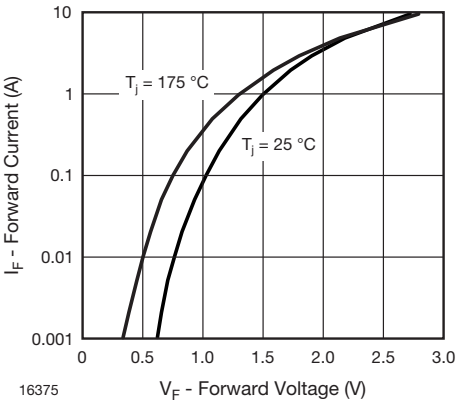


Fig. 3 - Forward Current vs. Forward Voltage

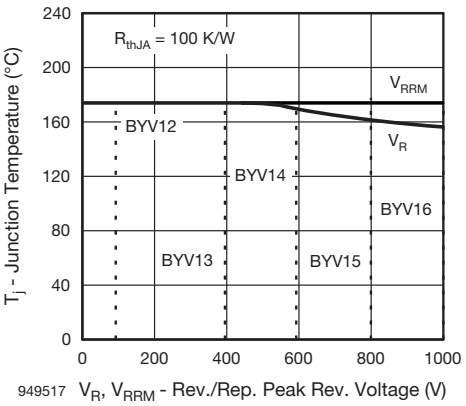


Fig. 2 - Junction Temperature vs. Reverse/Repetitive Peak Reverse Voltage

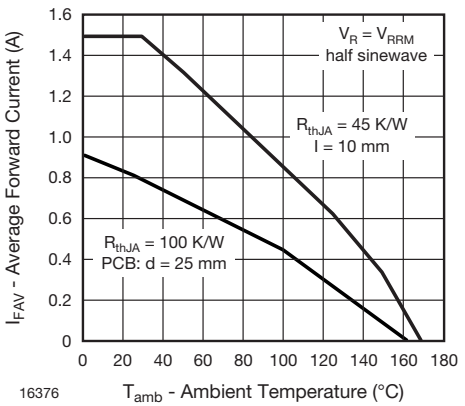


Fig. 4 - Max. Average Forward Current vs. Ambient Temperature

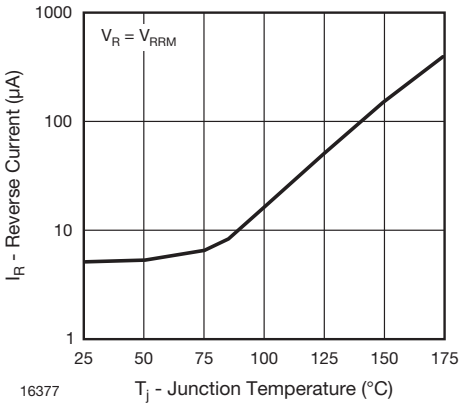


Fig. 5 - Reverse Current vs. Junction Temperature

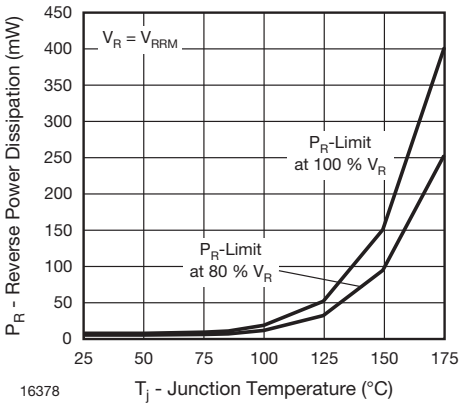


Fig. 6 - Max. Reverse Power Dissipation vs. Junction Temperature

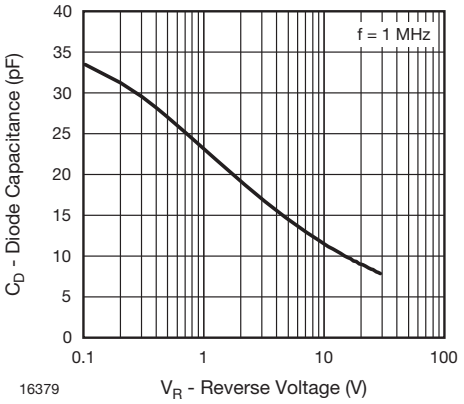


Fig. 7 - Diode Capacitance vs. Reverse Voltage

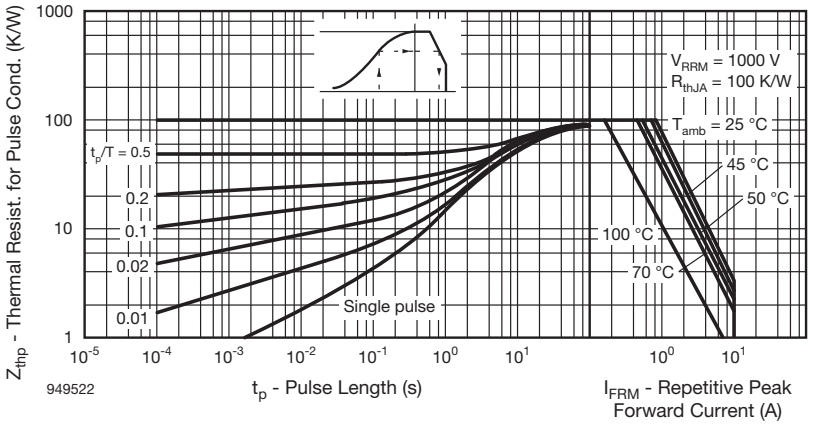
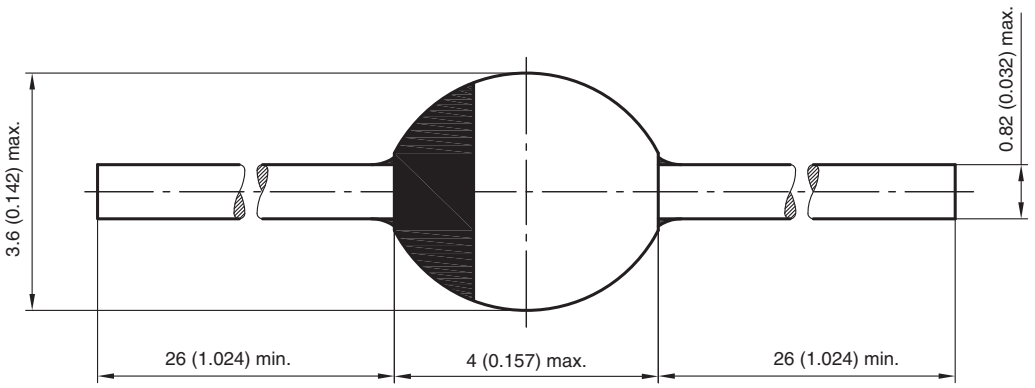


Fig. 8 - Thermal Response

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



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