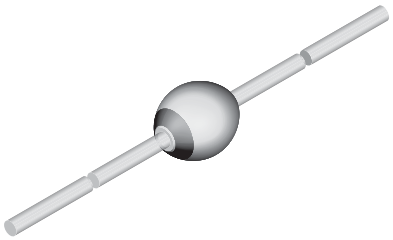
Ultra-Fast Avalanche Sinterglass Diode



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FEATURES

- Controlled avalanche characteristic
- Low forward voltage
- Ultra fast recovery time
- Glass passivated junction
- Hermetically sealed package
- 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

- Very fast rectification diode e.g. for switch mode power supply

ORDERING INFORMATION (Example)

DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY
BYV27-200	BYV27-200-TR	5000 per 10" tape and reel	25 000
BYV27-200	BYV27-200-TAP	5000 per ammopack	25 000

PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
BYV27-50	V_R = 50 V; $I_{F(AV)}$ = 2 A	SOD-57
BYV27-100	V_R = 100 V; $I_{F(AV)}$ = 2 A	SOD-57
BYV27-150	V_R = 150 V; $I_{F(AV)}$ = 2 A	SOD-57
BYV27-200	V_R = 200 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
Peak reverse voltage, non repetitive	See electrical characteristics	BYV27-50	V_{RSM}	55	V
		BYV27-100	V_{RSM}	110	V
		BYV27-150	V_{RSM}	165	V
		BYV27-200	V_{RSM}	220	V
Reverse voltage = repetitive peak reverse voltage	See electrical characteristics	BYV27-50	$V_R = V_{RRM}$	50	V
		BYV27-100	$V_R = V_{RRM}$	100	V
		BYV27-150	$V_R = V_{RRM}$	150	V
		BYV27-200	$V_R = V_{RRM}$	200	V
Peak forward surge current	t_p = 10 ms, half sine wave		I_{FSM}	50	A
Repetitive peak forward current			I_{FRM}	15	A
Average forward current			$I_{F(AV)}$	2	A
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R}$ = 1 A, T_j = 175 °C		E_R	20	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	l = 10 mm, T_L = constant	R_{thJA}	45	K/W
	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 = 3 A		V_F	-	-	1.07	V
	I_F = 3 A, T_j = 175 °C		V_F	-	-	0.88	V
Reverse current	$V_R = V_{RRM}$		I_R	-	-	1	µA
	V_{RSM}		I_R	-	-	100	µA
	$V_R = V_{RRM}$, T_j = 165 °C		I_R	-	-	150	µA
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, i_R = 0.25 A		t_{rr}	-	-	25	ns

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

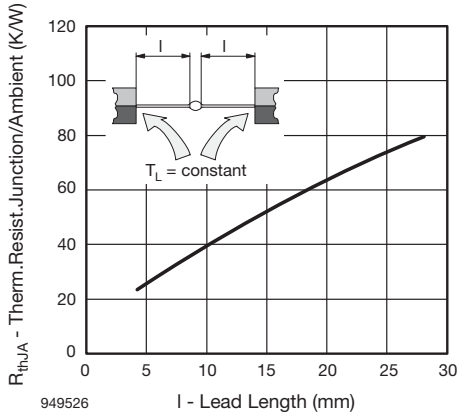

Fig. 1 - Typ. Thermal Resistance vs. Lead Length

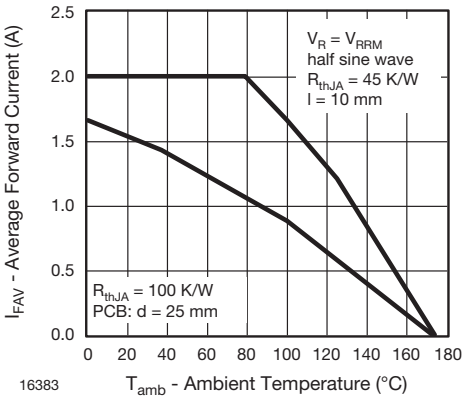

Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

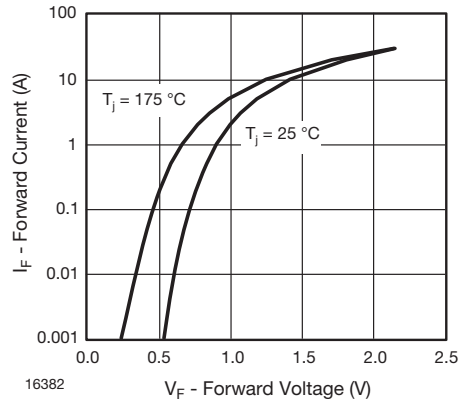

Fig. 2 - Forward Current vs. Forward Voltage

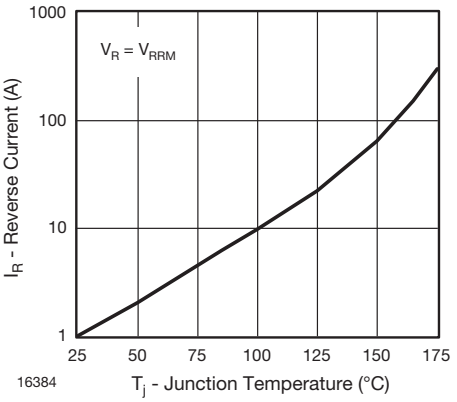

Fig. 4 - Reverse Current vs. Junction Temperature

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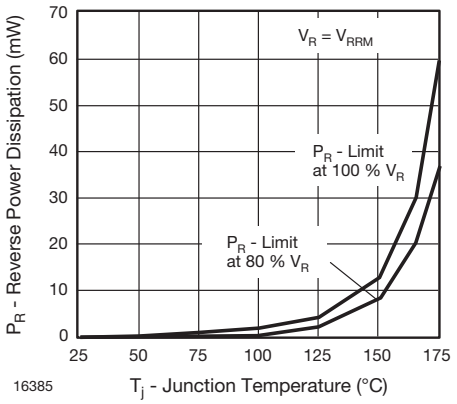


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

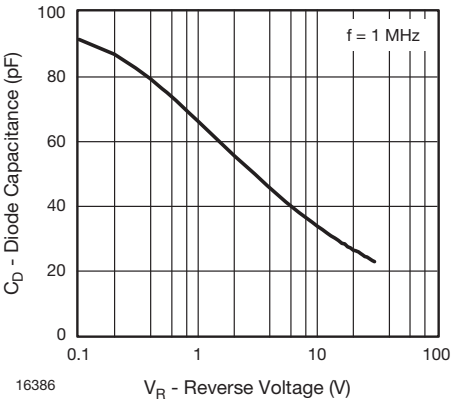
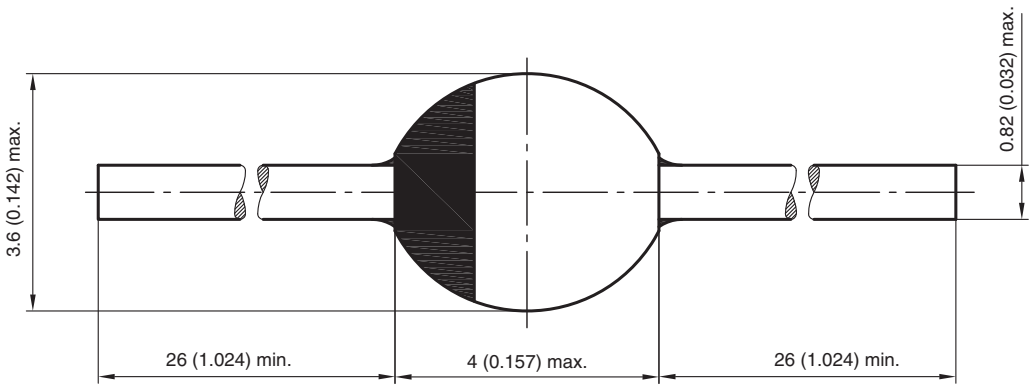


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



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