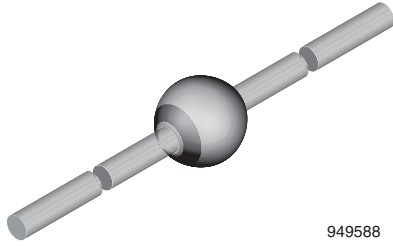




Standard Avalanche Sinterglass Diode



949588

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DESIGN SUPPORT TOOLS



MECHANICAL DATA

Case: SOD-64

Terminals: plated axial leads, solderable per MIL-STD-750, method 2026

Polarity: color band denotes cathode end

Mounting position: any

Weight: approx. 858 mg

FEATURES

- Glass passivated junction
- Hermetically sealed package
- Controlled avalanche characteristics
- Low reverse current
- High surge current loading
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

APPLCIATIONS

- Rectification, general purpose

ORDERING INFORMATION (Example)			
DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY
BYW82 or BYW83 or BYW84 and BYW86	BYW86-TR	2500 per 10" tape and reel	12 500
BYW82 or BYW84 and BYW85	BYW85-TAP	2500 per ammpack	12 500
BYW85	BYW85TR	2500 per 10" tape and reel	12 500
BYW83 or BYW86	BYW86TAP	2500 per ammpack	12 500

PARTS TABLE		
PART	TYPE DIFFERENTIATION	PACKAGE
BYW82	$V_R = 200\text{ V}, I_{F(AV)} = 3\text{ A}$	SOD-64
BYW83	$V_R = 400\text{ V}, I_{F(AV)} = 3\text{ A}$	SOD-64
BYW84	$V_R = 600\text{ V}, I_{F(AV)} = 3\text{ A}$	SOD-64
BYW85	$V_R = 800\text{ V}, I_{F(AV)} = 3\text{ A}$	SOD-64
BYW86	$V_R = 1000\text{ V}, I_{F(AV)} = 3\text{ A}$	SOD-64

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Reverse voltage = repetitive peak reverse voltage	See electrical characteristics	BYW82	$V_R = V_{RRM}$	200	V
		BYW83	$V_R = V_{RRM}$	400	V
		BYW84	$V_R = V_{RRM}$	600	V
		BYW85	$V_R = V_{RRM}$	800	V
		BYW86	$V_R = V_{RRM}$	1000	V
Peak forward surge current	$t_p = 10\text{ ms}$, half sine wave		I_{FSM}	100	A
Repetitive peak forward current			I_{FRM}	18	A
Average forward current			$I_{F(AV)}$	3	A
Pulse avalanche peak power	$t_p = 20\text{ }\mu\text{s}$, half sine wave, $T_j = 175\text{ }^\circ\text{C}$		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^2t	40	A ² 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}	25	K/W
	On PC board with spacing 25 mm	R_{thJA}	70	K/W

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 3\text{ A}$	V_F	-	-	1	V
Reverse current	$V_R = V_{RRM}$	I_R	-	0.1	1	μA
	$V_R = V_{RRM}$, $T_j = 100\text{ }^{\circ}\text{C}$	I_R	-	5	10	μA
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}$, $tp/T = 0.01$, $tp = 0.3\text{ ms}$	$V_{(BR)}$	-	-	1600	V
Diode capacitance	$V_R = 4\text{ V}$, $f = 1\text{ MHz}$	C_D	-	40	60	pF
Reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $I_R = 0.25\text{ A}$	t_{rr}	-	3.5	5	μs
	$I_F = 1\text{ A}$, $dI/dt = 5\text{ A}/\mu\text{s}$, $V_R = 50\text{ V}$	t_{rr}	-	4.5	7.5	μs
Reverse recovery charge	$I_F = 1\text{ A}$, $dI/dt = 5\text{ A}/\mu\text{s}$	Q_{rr}	-	8	12	μC

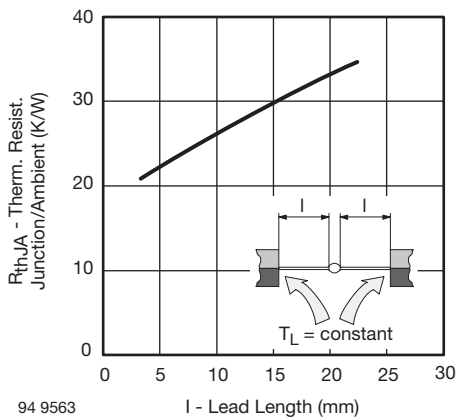
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


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

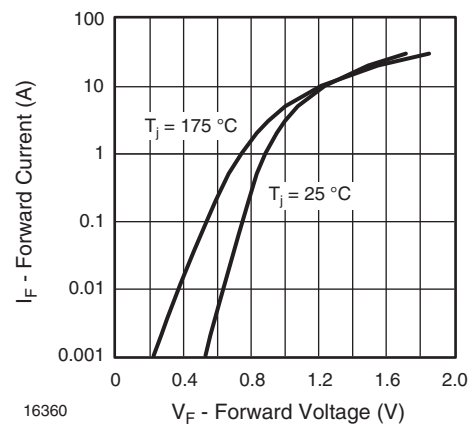


Fig. 3 - Forward Current vs. Forward Voltage

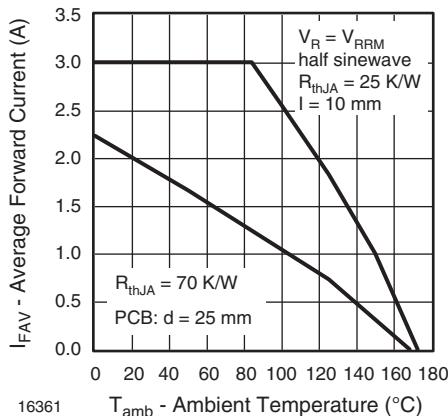


Fig. 2 - Max. Average Forward Current vs. Ambient Temperature

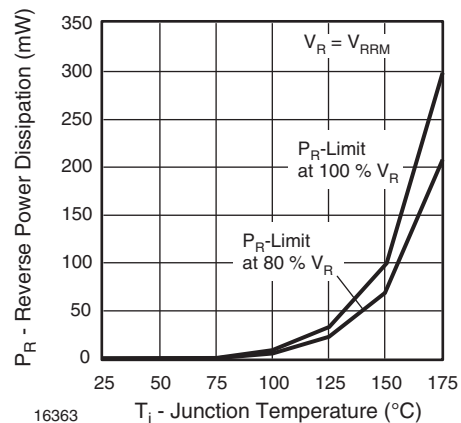


Fig. 4 - Max. Reverse Power Dissipation vs. Junction Temperature

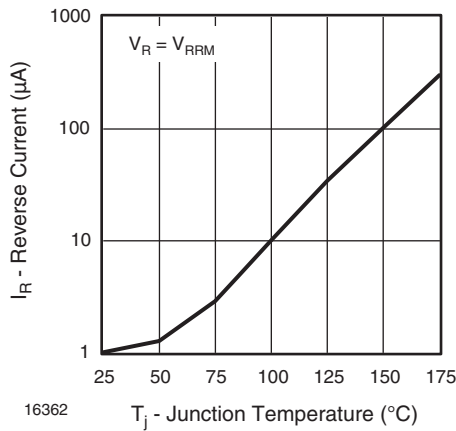


Fig. 5 - Reverse Current vs. Junction Temperature

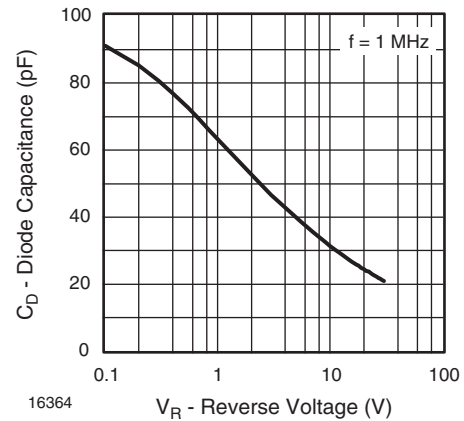


Fig. 6 - Diode Capacitance vs. Reverse Voltage

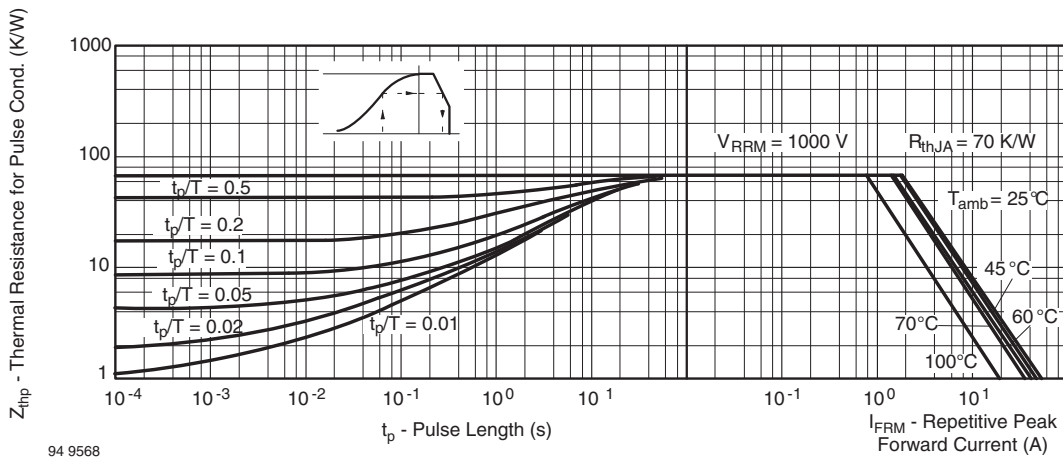
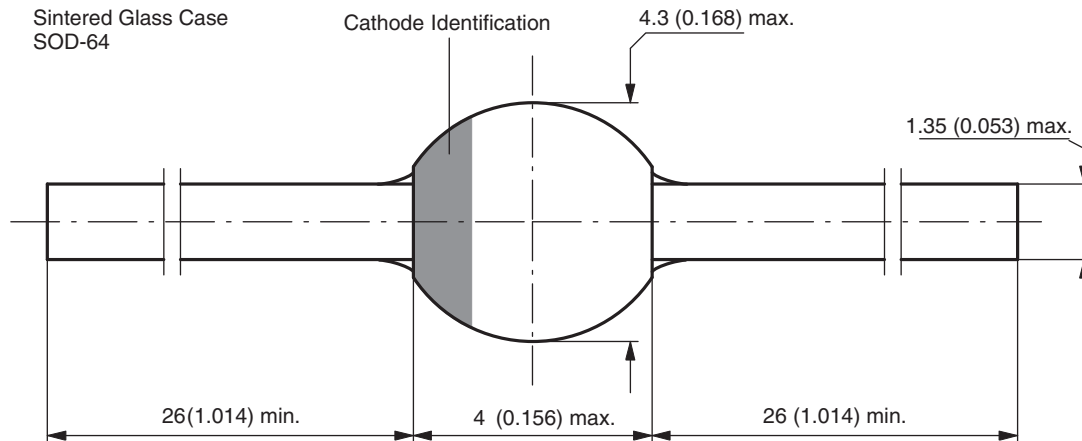


Fig. 7 - Thermal Response

PACKAGE DIMENSIONS in millimeters (inches): SOD-64



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