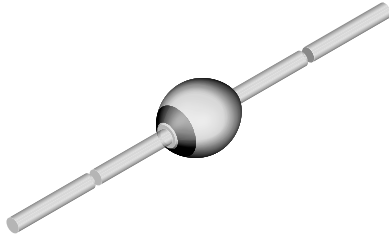


## Ultra-Fast Avalanche Sinterglass Diode



949539

### FEATURES

- Controlled avalanche characteristic
- Low forward voltage
- Ultra fast recovery time
- Glass passivated junction
- Hermetically sealed package
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



**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

### PARTS TABLE

PART	TYPE DIFFERENTIATION	PACKAGE
BYV27-50	$V_R = 50 \text{ V}; I_{FAV} = 2 \text{ A}$	SOD-57
BYV27-100	$V_R = 100 \text{ V}; I_{FAV} = 2 \text{ A}$	SOD-57
BYV27-150	$V_R = 150 \text{ V}; I_{FAV} = 2 \text{ A}$	SOD-57
BYV27-200	$V_R = 200 \text{ V}; I_{FAV} = 2 \text{ A}$	SOD-57

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

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
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	$t_p = 10 \text{ ms}$ , half sine wave		$I_{FSM}$	50	A
Repetitive peak forward current			$I_{FRM}$	15	A
Average forward current			$I_{FAV}$	2	A
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
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	$l = 10\text{ mm}$ , $T_L = \text{constant}$	$R_{thJA}$	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	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 3\text{ A}$		$V_F$	-	-	1.07	V
	$I_F = 3\text{ A}$ , $T_j = 175\text{ }^{\circ}\text{C}$		$V_F$	-	-	0.88	V
Reverse current	$V_R = V_{RRM}$		$I_R$	-	-	1	$\mu\text{A}$
	$V_{RSM}$		$I_R$	-	-	100	$\mu\text{A}$
	$V_R = V_{RRM}$ , $T_j = 165\text{ }^{\circ}\text{C}$		$I_R$	-	-	150	$\mu\text{A}$
Reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $i_R = 0.25\text{ A}$		$t_{rr}$	-	-	25	ns

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

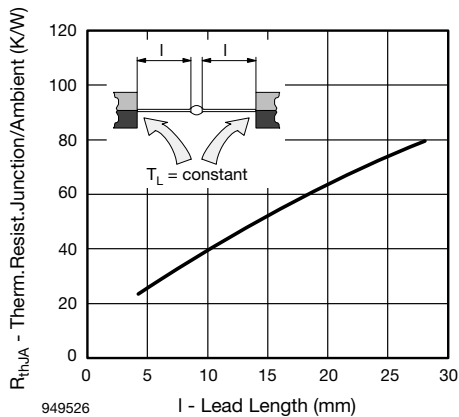


Fig. 1 - Typ. Thermal Resistance vs. Lead Length

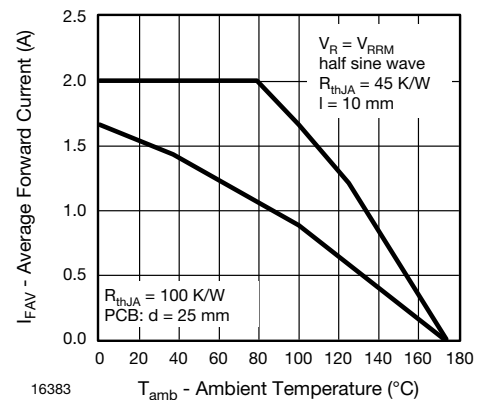


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

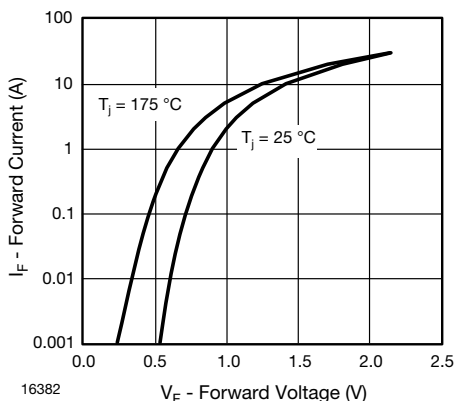


Fig. 2 - Forward Current vs. Forward Voltage

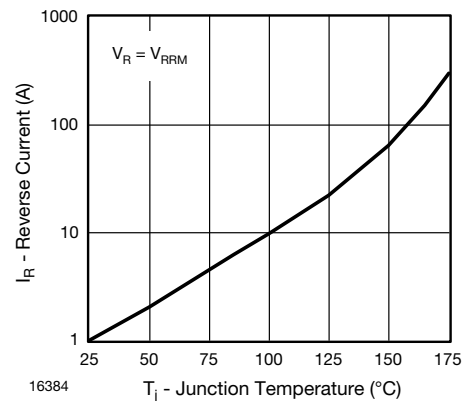


Fig. 4 - Reverse Current vs. Junction Temperature

# BYV27-50, BYV27-100, BYV27-150, BYV27-200

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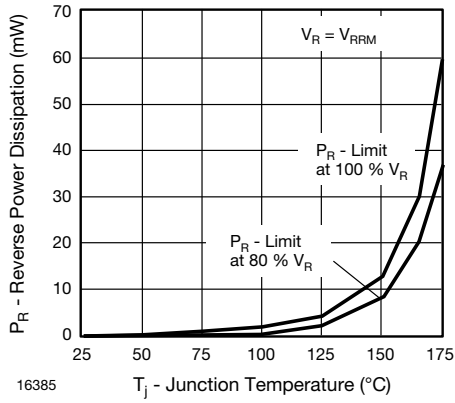


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

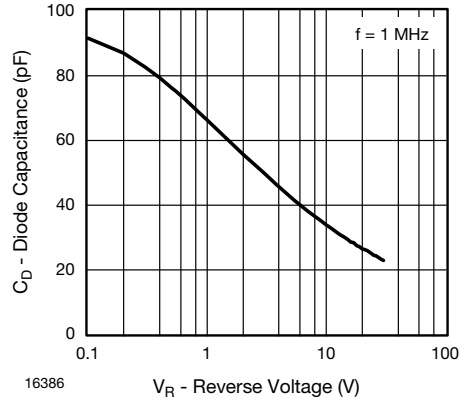
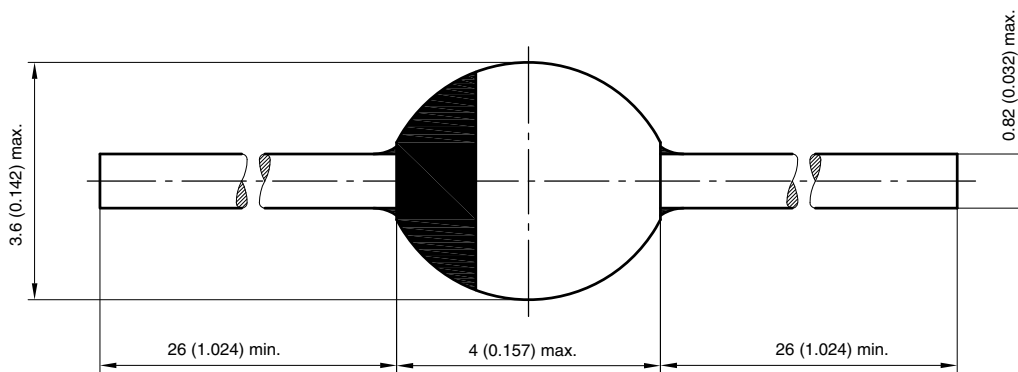


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



20543  
 Rev. 3 - Date: 09.February 2005  
 Document no.: 6.563-5006.3-4



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