



# Fast Avalanche Sinterglass Diode



949539

### DESIGN SUPPORT TOOLS

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### FEATURES

- Glass passivated junction
- Hermetically sealed package
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



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COMPLIANT  
HALOGEN  
**FREE**

### APPLICATIONS

- Fast rectification and switching avalanche sinterglass diode for TV-line output circuits an switch mode power supply

### MECHANICAL DATA

**Case:** SOD-57 sintered glass case

**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
BY203-20S	BY203-20STR	5000 per 10" tape and reel	25 000
BY203-20S	BY203-20STAP	5000 per ammopack	25 000

PARTS TABLE		
PART	TYPE DIFFERENTIATION	PACKAGE
BY203-12S	$V_R = 1200\text{ V}; I_{F(AV)} = 250\text{ mA}$	SOD-57
BY203-16S	$V_R = 1600\text{ V}; I_{F(AV)} = 250\text{ mA}$	SOD-57
BY203-20S	$V_R = 2000\text{ V}; I_{F(AV)} = 250\text{ mA}$	SOD-57

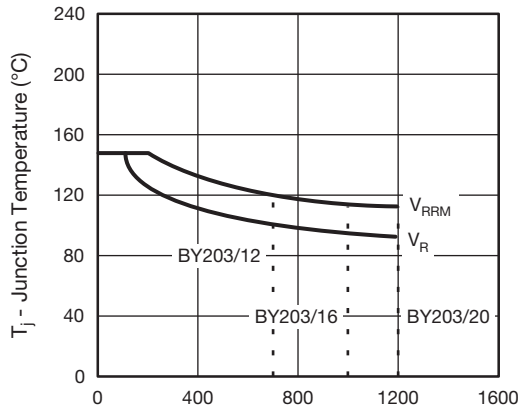
ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Reverse voltage = repetitive peak reverse voltage	$I_R = 100\text{ }\mu\text{A}$	BY203-12S	$V_R = V_{RRM}$	1200	V
		BY203-16S	$V_R = V_{RRM}$	1600	V
		BY203-20S	$V_R = V_{RRM}$	2000	V
Peak forward surge current	$t_p = 10\text{ ms}$ , half sine wave		$I_{FSM}$	20	A
Average forward current			$I_{F(AV)}$	0.25	A
Non repetitive reverse avalanche energy	$I_{(BR)R} = 0.4\text{ A}$		$E_R$	10	mJ
Junction temperature range			$T_j$	-55 to +150	$^\circ\text{C}$
Storage temperature range			$T_{stg}$	-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
	Maximum lead length	$R_{thJA}$	100	K/W

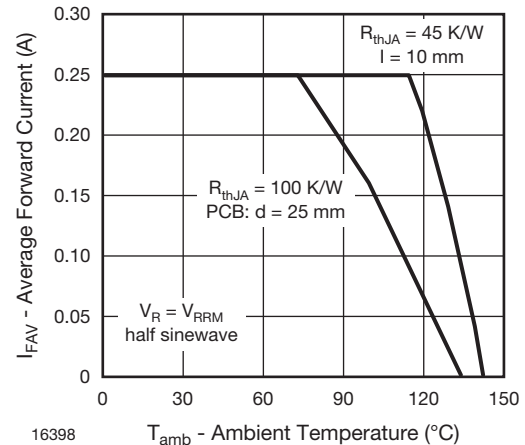
ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 0.2\text{ A}$ , $t_p/T = 0.01$ , $t_p = 0.3\text{ ms}$		$V_F$	-	-	2.4	V
Reverse current	$V_R = 700\text{ V}$	BY203-12S	$I_R$	-	-	2	$\mu\text{A}$
	$V_R = 1000\text{ V}$	BY203-16S	$I_R$	-	-	2	$\mu\text{A}$
	$V_R = 1200\text{ V}$	BY203-20S	$I_R$	-	-	2	$\mu\text{A}$
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}$ , $t_p/T = 0.01$ , $t_p = 0.3\text{ ms}$	BY203-12S	$V_{(BR)}$	1200	-	-	V
		BY203-16S	$V_{(BR)}$	1600	-	-	V
		BY203-20S	$V_{(BR)}$	2000	-	-	V
Reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $i_R = 0.25\text{ A}$		$t_{rr}$	-	-	300	ns

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



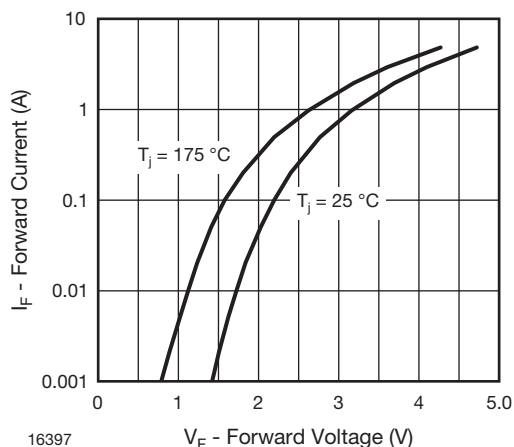
949080  $V_R, V_{RRM}$  - Rev./Rep. Peak Rev. Voltage (V)

Fig. 1 - Junction Temperature vs. Reverse/Repetitive Peak Reverse Voltage



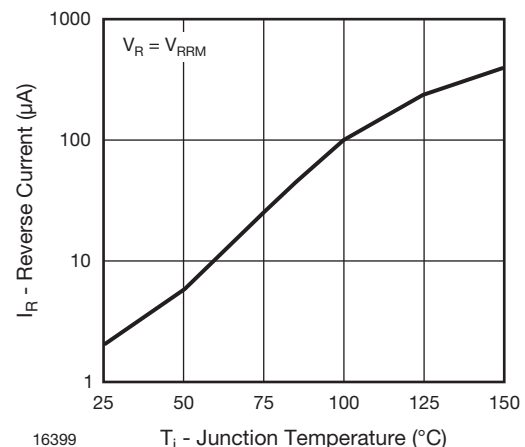
16398  $T_{amb}$  - Ambient Temperature ( $^{\circ}\text{C}$ )

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



16397  $V_F$  - Forward Voltage (V)

Fig. 2 - Max. Forward Current vs. Forward Voltage



16399  $T_j$  - Junction Temperature ( $^{\circ}\text{C}$ )

Fig. 4 - Max. Reverse Current vs. Junction Temperature

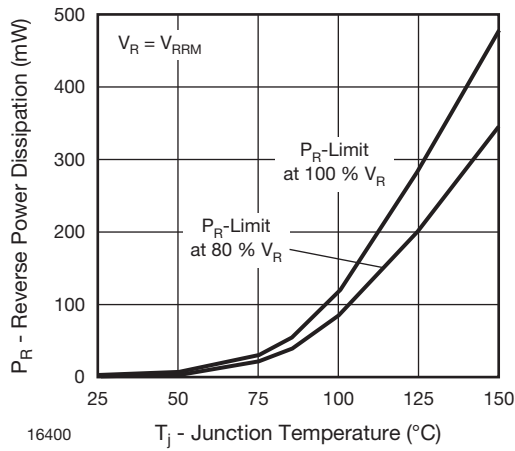


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

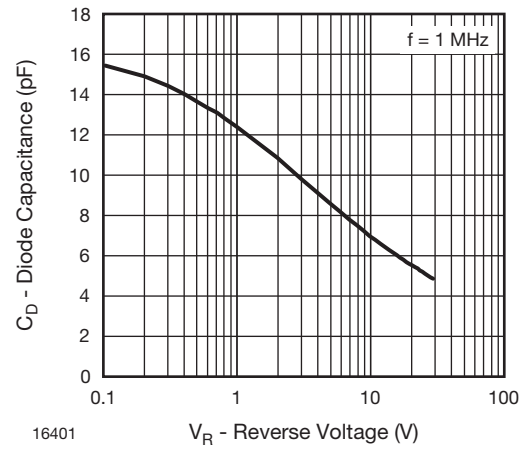
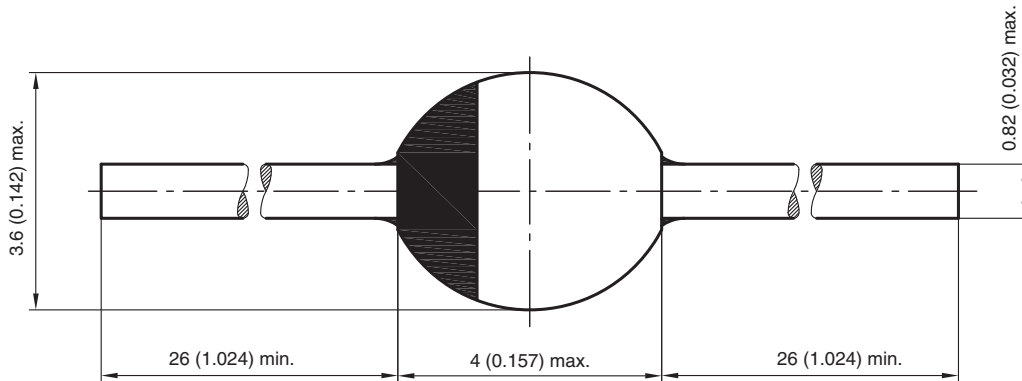


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



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