



## Standard Avalanche Sinterglass Diode



949539

### DESIGN SUPPORT TOOLS

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### FEATURES

- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### APPLICATIONS

- Rectification diode

### 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
BYT51M	BYT51M-TR	5000 per 10" tape and reel	25 000
BYT51M	BYT51M-TAP	5000 per ammopack	25 000

PARTS TABLE		
PART	TYPE DIFFERENTIATION	PACKAGE
BYT51A	$V_R = 50\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51B	$V_R = 100\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51D	$V_R = 200\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51G	$V_R = 400\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51J	$V_R = 600\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51K	$V_R = 800\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57
BYT51M	$V_R = 1000\text{ V}; I_{F(AV)} = 1.5\text{ A}$	SOD-57



ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Reverse voltage = repetitive peak reverse voltage	See electrical characteristics	BYT51A	V <sub>R</sub> = V <sub>RRM</sub>	50	V
		BYT51B	V <sub>R</sub> = V <sub>RRM</sub>	100	V
		BYT51D	V <sub>R</sub> = V <sub>RRM</sub>	200	V
		BYT51G	V <sub>R</sub> = V <sub>RRM</sub>	400	V
		BYT51J	V <sub>R</sub> = V <sub>RRM</sub>	600	V
		BYT51K	V <sub>R</sub> = V <sub>RRM</sub>	800	V
BYT51M	V <sub>R</sub> = V <sub>RRM</sub>	1000	V		
Peak forward surge current	t <sub>p</sub> = 10 ms, half sine wave		I <sub>FSM</sub>	50	A
Repetitive peak forward current			I <sub>FRM</sub>	9	A
Average forward current	I = 10 mm		I <sub>F(AV)</sub>	1.5	A
	On PC board		I <sub>F(AV)</sub>	1	A
Junction and storage temperature range			T <sub>J</sub> = T <sub>stg</sub>	-55 to +175	°C
Non repetitive reverse avalanche energy	I(BR)R = 1 A		ER	20	mJ

MAXIMUM THERMAL RESISTANCE (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction ambient	Lead length l = 10 mm, T <sub>L</sub> = constant	R <sub>thJA</sub>	45	K/W
	On PC board with spacing 25 mm	R <sub>thJA</sub>	100	K/W

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 1 A	V <sub>F</sub>	-	0.95	1.1	V
	I <sub>F</sub> = 1 A, T <sub>J</sub> = 175 °C	V <sub>F</sub>	-	-	1	V
Reverse current	V <sub>R</sub> = V <sub>RRM</sub>	I <sub>R</sub>	-	-	1	µA
	V <sub>R</sub> = V <sub>RRM</sub> , T <sub>J</sub> = 150 °C	I <sub>R</sub>	-	-	100	µA
Reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1 A, i <sub>R</sub> = 0.25 A	t <sub>rr</sub>	-	-	4	µs

**TYPICAL CHARACTERISTICS** (T<sub>amb</sub> = 25 °C, unless otherwise specified)

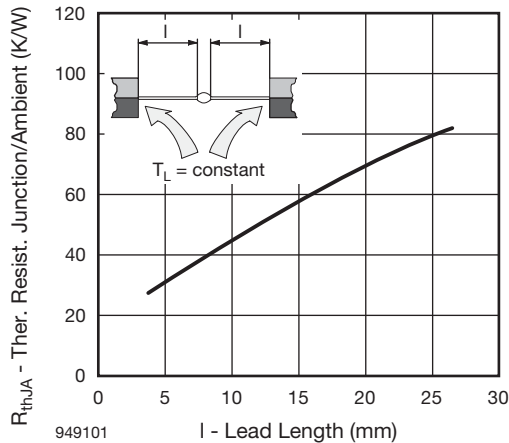


Fig. 1 - Typ. Thermal Resistance vs. Lead Length

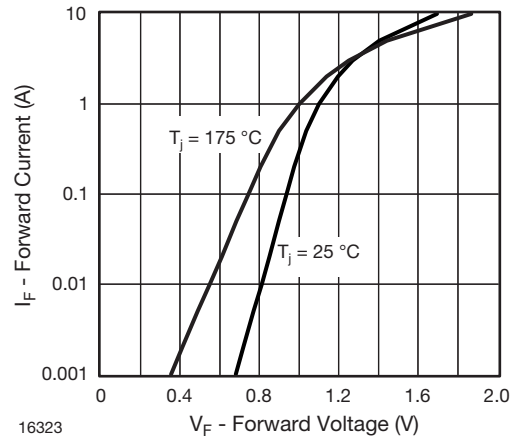


Fig. 2 - Forward Current vs. Forward Voltage

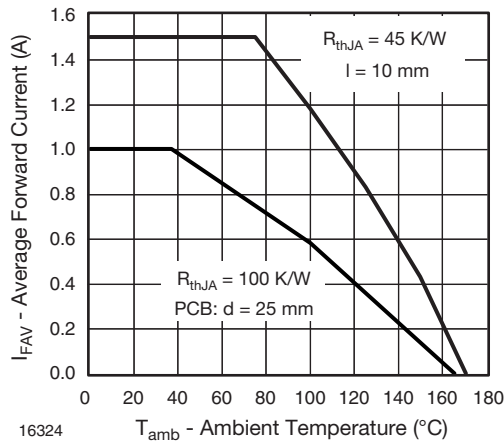


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

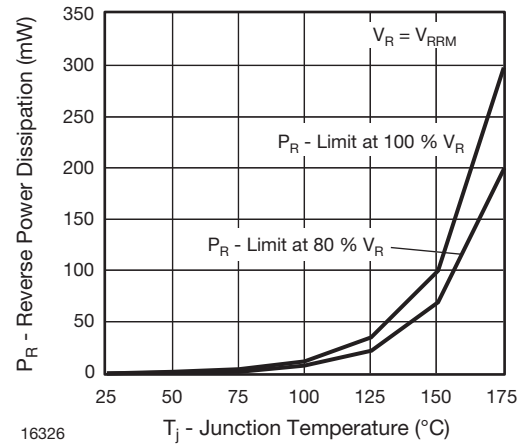


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

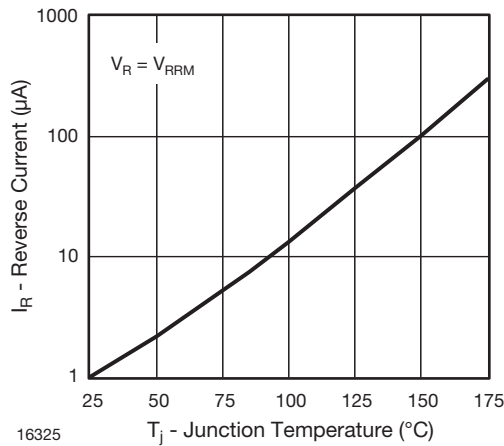


Fig. 4 - Reverse Current vs. Junction Temperature

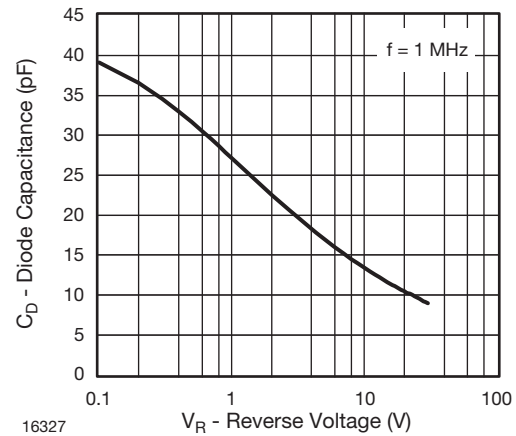
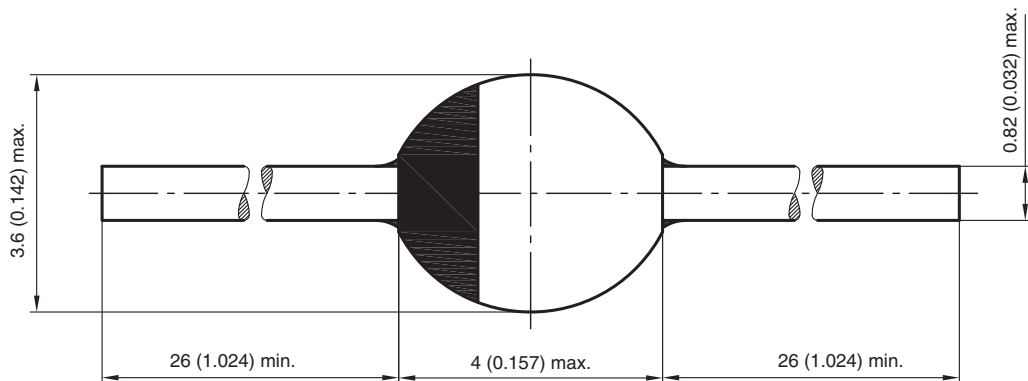


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



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