

## BYT53A, BYT53B, BYT53C, BYT53D, BYT53F, BYT53G

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Vishay Semiconductors

# **Ultra-Fast Avalanche Sinterglass Diode**



949539

#### **FEATURES**

- · Glass passivated junction
- Hermetically sealed package
- · Low reverse current
- · Soft recovery characteristics
- Material categorization:
  For definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>



BoHS

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 and switches
- Switched mode power supplies
- High-frequency inverter circuits

ORDERING INFORMATION (Example)						
DEVICE NAME	E ORDERING CODE TAPED UNITS MINIMUM ORDER QUANTIT					
BYT53G	BYT53G-TR	5000 per 10" tape and reel	25 000			
BYT53G	BYT53G-TAP	5000 per ammopack	25 000			

PARTS TABLE					
PART	TYPE DIFFERENTIATION	PACKAGE			
BYT53A	V <sub>R</sub> = 50 V; I <sub>F(AV)</sub> = 1.9 A	SOD-57			
BYT53B	V <sub>R</sub> = 100 V; I <sub>F(AV)</sub> = 1.9 A	SOD-57			
BYT53C	V <sub>R</sub> = 150 V; I <sub>F(AV)</sub> = 1.9 A	SOD-57			
BYT53D	V <sub>R</sub> = 200 V; I <sub>F(AV)</sub> = 1.9 A	SOD-57			
BYT53F	V <sub>R</sub> = 300 V; I <sub>F(AV)</sub> = 1.9 A	SOD-57			
BYT53G	$V_{B} = 400 \text{ V}; I_{E(AV)} = 1.9 \text{ A}$	SOD-57			

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
	See electrical characteristics	BYT53A	$V_R = V_{RRM}$	50	V	
		BYT53B	$V_R = V_{RRM}$	100	V	
Reverse voltage = repetitive peak reverse		BYT53C	$V_R = V_{RRM}$	150	V	
voltage		BYT53D	$V_R = V_{RRM}$	200	V	
		BYT53F	$V_R = V_{RRM}$	300	V	
		BYT53G	$V_R = V_{RRM}$	400	V	
Peak forward surge current	t <sub>p</sub> = 10 ms, half sine wave		I <sub>FSM</sub>	50	Α	
Average forward current	I = 10 mm, T <sub>L</sub> = 25 °C		I <sub>F(AV)</sub>	1.9	Α	
Non repetitive reverse avalanche energy	I <sub>(BR)R</sub> = 1 A		E <sub>R</sub>	20	mJ	
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to + 175	°C	

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

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 1 A		$V_{F}$	-	-	1.1	V
Torward voitage	I <sub>F</sub> = 1 A, T <sub>j</sub> = 175 °C		$V_{F}$	-	-	0.9	V
Reverse current	$V_R = V_{RRM}$		I <sub>R</sub>	-	-	5	μΑ
neverse current	$V_R = V_{RRM}, T_j = 150  ^{\circ}C$		I <sub>R</sub>	-	-	200	μΑ
Reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1 \text{ A}, i_R = 0.25 \text{ A}$		t <sub>rr</sub>	-	-	50	ns

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

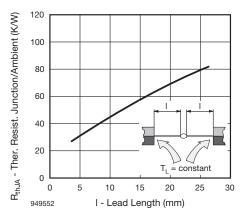


Fig. 1 - Max. Thermal Resistance vs. Lead Length

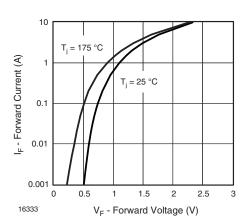


Fig. 2 - Max. Forward Current vs. Forward Voltage

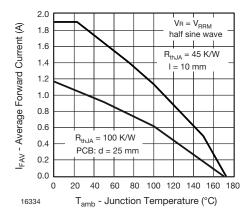


Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

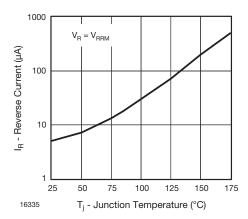


Fig. 4 - Max. Reverse Current vs. Junction Temperature

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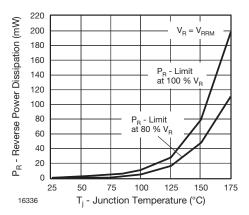


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

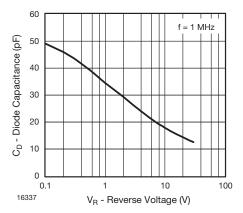
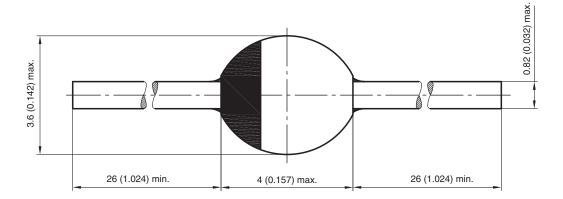


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



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