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BYT53A, BYT53B, BYT53C, BYT53D, BYT53F, BYT53G

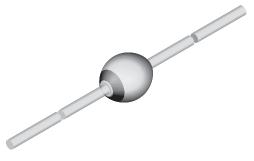
**Vishay Semiconductors** 

ROHS COMPLIANT

HALOGEN

FREE

# **Ultra-Fast Avalanche Sinterglass Diode**



949539

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### **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

Glass passivated junction
Hermetically sealed package

Low reverse current

**FEATURES** 

- · Soft recovery characteristics
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

#### **APPLICATIONS**

- · Very fast rectification and switches
- Switched mode power supplies
- High-frequency inverter circuits

weight: approx. o	oo mg				
ORDERING INFORMATION (Example)					
DEVICE NAME	ORDERING CODE	TAPED UNITS	MINIMUM ORDER QUANTITY		
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	$V_{R} = 50 \text{ V}; \text{ I}_{F(AV)} = 1.9 \text{ A}$	SOD-57			
BYT53B	$V_{R} = 100 \text{ V}; I_{F(AV)} = 1.9 \text{ A}$	SOD-57			
BYT53C	$V_{R} = 150 \text{ V}; \text{ I}_{F(AV)} = 1.9 \text{ A}$	SOD-57			
BYT53D	$V_{R} = 200 \text{ V}; \text{ I}_{F(AV)} = 1.9 \text{ A}$	SOD-57			
BYT53F	$V_{R} = 300 \text{ V}; I_{F(AV)} = 1.9 \text{ A}$	SOD-57			
BYT53G	$V_R = 400 \text{ V}; I_{F(AV)} = 1.9 \text{ A}$	SOD-57			



BYT53A, BYT53B, BYT53C, BYT53D, BYT53F, BYT53G

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<b>ABSOLUTE MAXIMUM RATINGS</b> (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	BYT53A	$V_{R} = V_{RRM}$	50	V		
		BYT53B	$V_{R} = V_{RRM}$	100	V		
		BYT53C	$V_{R} = V_{RRM}$	150	V		
		BYT53D	$V_{\rm R} = V_{\rm RRM}$	200	V		
		BYT53F	$V_{R} = V_{RRM}$	300	V		
		BYT53G	$V_{R} = V_{RRM}$	400	V		
Peak forward surge current	$t_p = 10 \text{ ms}$ , half sine wave		I <sub>FSM</sub>	50	А		
Average forward current	l = 10 mm, T <sub>L</sub> = 25 °C		I <sub>F(AV)</sub>	1.9	А		
Non repetitive reverse avalanche energy	$I_{(BR)R} = 1 A$		E <sub>R</sub> 20		mJ		
Junction and storage temperature range			T <sub>j</sub> = T <sub>stg</sub>	-55 to +175	°C		

<b>MAXIMUM THERMAL RESISTANCE</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Junction ambient	Lead length I = 10 mm, $T_L$ = 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	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 1 A		V <sub>F</sub>	-	-	1.1	V
	I <sub>F</sub> = 1 A, T <sub>j</sub> = 175 °C		V <sub>F</sub>	-	-	0.9	V
Reverse current	$V_{R} = V_{RRM}$		I <sub>R</sub>	-	-	5	μA
neverse current	$V_R = V_{RRM}, T_j = 150 \ ^\circ C$		I <sub>R</sub>	-	-	200	μA
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)

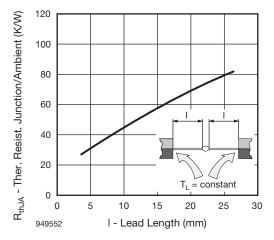


Fig. 1 - Max. Thermal Resistance vs. Lead Length

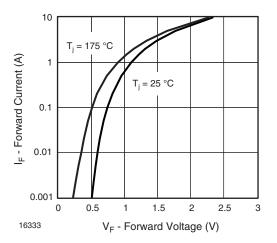


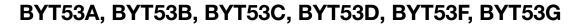
Fig. 2 - Max. Forward Current vs. Forward Voltage

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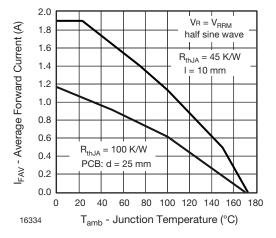
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Fig. 3 - Max. Average Forward Current vs. Ambient Temperature

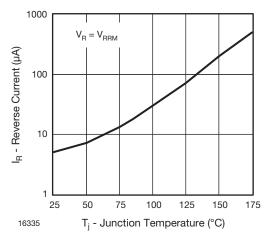


Fig. 4 - Max. Reverse Current vs. Junction Temperature

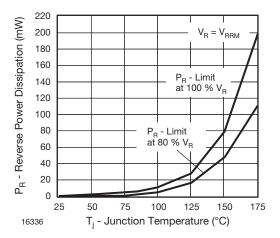


Fig. 5 - Max. Reverse Power Dissipation vs. Junction Temperature

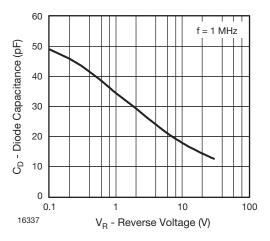
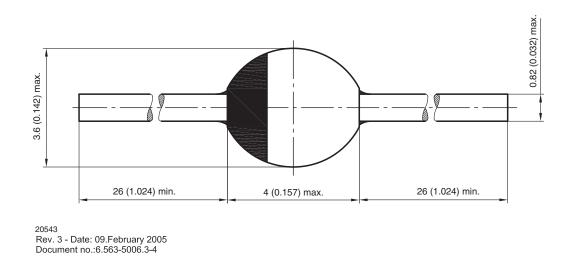


Fig. 6 - Diode Capacitance vs. Reverse Voltage

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



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