

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

Vishay Semiconductors

Ultra-Fast Avalanche Sinterglass Diode



949539

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

FEATURES

- Controlled avalanche characteristic
- Low forward voltage
- Ultra fast recovery time
- Glass passivated junction
- Hermetically sealed package
- Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>

APPLICATIONS

• Very fast rectification diode e.g. for switch mode power supply

ORDERING INFORMATION (Example)						
DEVICE NAME	ORDERING CODE	TAPED UNITS MINIMUM ORDER QUANTITY				
BYV27-200	BYV27-200-TR	5000 per 10" tape and reel	25 000			
BYV27-200	BYV27-200-TAP	5000 per ammopack	25 000			

PARTS TABLE		
PART	TYPE DIFFERENTIATION	PACKAGE
BYV27-50	$V_{R} = 50 \text{ V}; \text{ I}_{F(AV)} = 2 \text{ A}$	SOD-57
BYV27-100	$V_{R} = 100 \text{ V}; \text{ I}_{F(AV)} = 2 \text{ A}$	SOD-57
BYV27-150	V _R = 150 V; I _{F(AV)} = 2 A	SOD-57
BYV27-200	$V_{R} = 200 \text{ V}; \text{ I}_{F(AV)} = 2 \text{ A}$	SOD-57

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
	See electrical characteristics	BYV27-50	V _{RSM}	55	V	
Real reverse veltage, per repetitive		BYV27-100	V _{RSM}	110	V	
Peak reverse voltage, non repetitive		BYV27-150	V _{RSM}	165	V	
		BYV27-200	V _{RSM}	220	V	
		BYV27-50	$V_R = V_{RRM}$	50	V	
Reverse voltage = repetitive peak reverse	See electrical characteristics	BYV27-100	$V_R = V_{RRM}$	100	V	
voltage		BYV27-150	$V_R = V_{RRM}$	150	V	
		BYV27-200	$V_R = V_{RRM}$	200	V	
Peak forward surge current	t _p = 10 ms, half sine wave		I _{FSM}	50	А	
Repetitive peak forward current			I _{FRM}	15	А	
Average forward current			I _{F(AV)}	2	А	
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	I _{(BR)R} = 1 A, T _j = 175 °C		E _R	20	mJ	
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to + 175	°C	

MAXIMUM THERMAL RESISTANCE (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Junction ambient	I = 10 mm, T _L = constant	R _{thJA}	45	K/W		
Sulction ambient	On PC board with spacing 25 mm	R _{thJA}	100	K/W		

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ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 3 A		V _F	-	-	1.07	V
Torward voltage	I _F = 3 A, T _j = 175 °C		V _F	-	-	0.88	V
	$V_{R} = V_{RRM}$		I _R	-	-	1	μA
Reverse current	V _{RSM}		I _R	-	-	100	μA
	$V_R = V_{RRM}, T_j = 165 \ ^\circ C$		I _R	-	-	150	μA
Reverse recovery time	I _F = 0.5 A, I _R = 1 A, i _R = 0.25 A		t _{rr}	-	-	25	ns

TYPICAL CHARACTERISTICS (T_{amb} = 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. 4 - 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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