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BA157, BA158, BA159D, BA159

Vishay General Semiconductor

RoHS

Fast Switching Plastic Rectifier



PRIMARY CHARACTERISTICS						
I _{F(AV)}	1.0 A					
V _{RRM}	400 V, 600 V, 800 V, 1000 V					
I _{FSM}	20 A					
t _{rr}	150 ns, 250 ns, 500 ns					
I _R	5.0 µA					
V _F	1.3 V					
T _J max.	125 °C					
Package	DO-204AL (DO-41)					
Diode variation	Single die					

FEATURES

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106 COMPLIANT
- Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer and telecommunication.

Note

• These devices are not AEC-Q101 qualified.

MECHANICAL DATA

Case: DO-204AL, molded epoxy body Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)							
PARAMETER	SYMBOL	BA157	BA158	BA159D	BA159	UNIT	
Maximum repetitive peak reverse voltage	V _{RRM}	400	600	800	1000	V	
Maximum RMS voltage	V _{RMS}	280	420	560	700	V	
Maximum DC blocking voltage	V _{DC}	400	600	800	1000	V	
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55 ^\circ\text{C}$	I _{F(AV)}	1.0					
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I _{FSM}	20					
Maximum operation junction temperature	TJ	- 65 to + 125					
Maximum storage temperature	T _{STG}	- 65 to + 150				°C	

ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	BA157	BA158	BA159D	BA159	UNIT
Maximum instantaneous forward voltage	1.0 A		V _F	1.3			V	
Maximum DC reverse current at rated DC blocking voltage	T _A = 25 °C		I _R	5.0				μΑ
Maximum reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A}, I_{rr} = 0.25 \text{ A}$		t _{rr}	150	250	50	00	ns
Typical junction capacitance	4.0 V, 1 MHz		CJ	12			pF	

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ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
BA158-E3/54	0.33	54	5500	13" diameter paper tape and reel		
BA158-E3/73	0.33	73	3000	Ammo pack packaging		

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25$ °C unless otherwise noted)

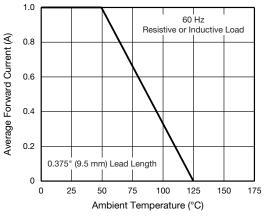


Fig. 1 - Forward Current Derating Curve

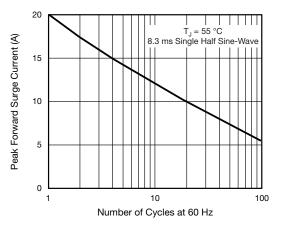


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

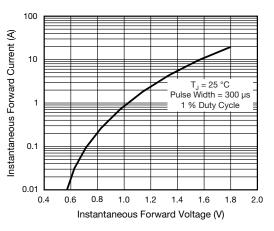


Fig. 3 - Typical Instantaneous Forward Characteristics

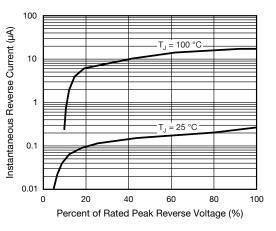


Fig. 4 - Typical Reverse Characteristics



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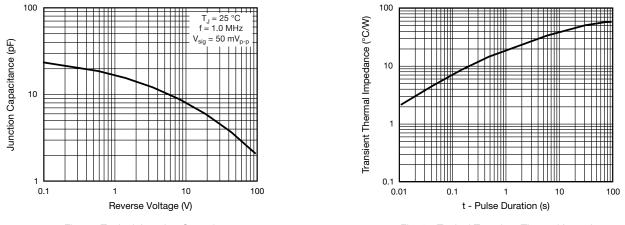
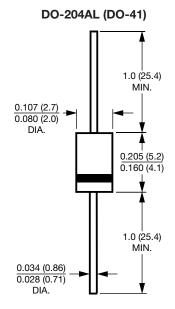


Fig. 5 - Typical Junction Capacitance



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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