

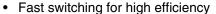
## Vishay General Semiconductor

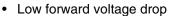
# **Fast Switching Plastic Rectifier**



MAJOR RATINGS AND CHARACTERISTICS						
I <sub>F(AV)</sub>	1.0 A					
V <sub>RRM</sub>	400 V to 1000 V					
I <sub>FSM</sub>	20 A					
t <sub>rr</sub>	150 ns, 250 ns, 500 ns					
I <sub>R</sub>	5.0 μΑ					
V <sub>F</sub>	1.3 V					
T <sub>i</sub> max.	125 °C					

#### **FEATURES**





- · Low leakage current
- High forward surge capability
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

#### TYPICAL APPLICATIONS

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

(Note: These devices are not Q101 qualified. Therefore, the devices specified in this datasheet have not been designed for use in automotive or Hi-Rel applications.)

#### **MECHANICAL DATA**

**Case:** DO-204AL, molded epoxy body Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated (E3 Suffix) leads, solderable per J-STD-002B and JESD22-B102D **Polarity:** Color band denotes cathode end

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 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 <sub>RMS</sub>	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 <sub>F(AV)</sub>	1.0				Α
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	20				А
Maximum operation junction temperature	TJ	- 65 to + 125				°C
Maximum storage temperature	T <sub>STG</sub>	- 65 to + 150				°C

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS	SYMBOL	BA157	BA158	BA159D	BA159	UNIT
Maximum instantaneous forward voltage	at 1.0 A	V <sub>F</sub>	1.3			V	
Maximum DC reverse current at rated DC blocking voltage	T <sub>A</sub> = 25 °C	I <sub>R</sub>	5.0			μА	
Maximum reverse recovery time	at $I_F = 0.5 \text{ A}$ , $I_R = 1.0 \text{ A}$ , $I_{rr} = 0.25 \text{ A}$	t <sub>rr</sub>	r 150 250 500		00	ns	
Typical junction capacitance	at 4.0 V, 1 MHz	CJ	12 p			pF	

ORDERING INFORMATION					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
BA158-E3/54	0.33	54	5500	13" Diameter Paper Tape & Reel	
BA158-E3/73	0.33	73	3000	Ammo Pack Packaging	

## **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

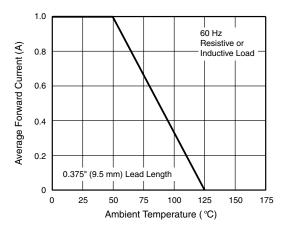


Figure 1. Forward Current Derating Curve

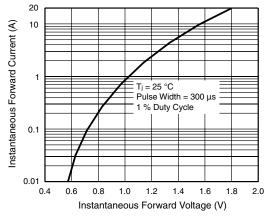


Figure 3. Typical Instantaneous Forward Characteristics

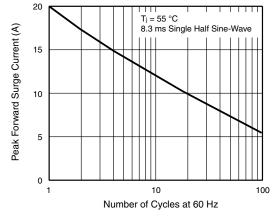


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

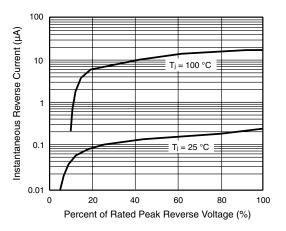


Figure 4. Typical Reverse Characteristics



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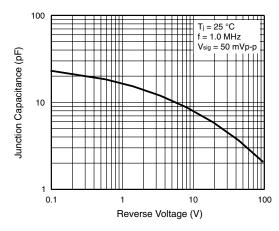


Figure 5. Typical Junction Capacitance

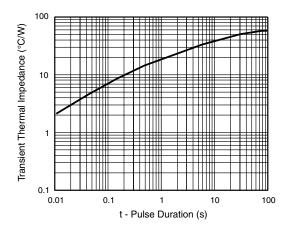
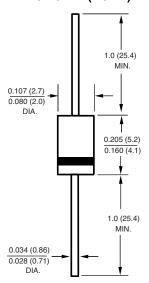


Figure 6. Typical Transient Thermal Impedance

## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

## DO-204AL (DO-41)



NOTE: Lead diameter is  $\frac{0.026~(0.66)}{0.023~(0.58)}$  for suffix "E" part numbers

# **Legal Disclaimer Notice**



Vishay

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