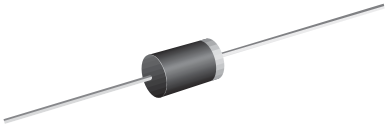
BA157 thru BA159

Vishay General Semiconductor

Fast Switching Plastic Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
V_{RRM}	50 V to 600 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



DO-204AL (DO-41)

Features

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder Dip 260 °C, 40 seconds

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

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

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 °C	$I_{F(AV)}$	1.0				A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	20				A
Maximum operation junction temperature	T_J	- 65 to + 125				°C
Maximum storage temperature	T_{STG}	- 65 to + 150				°C

Electrical Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Test condition	Symbol	BA157	BA158	BA159D	BA159	Unit
Maximum instantaneous forward voltage	at 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				µA
Maximum reverse recovery time	at I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	t_{rr}	150	250	500		ns
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	12				pF

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

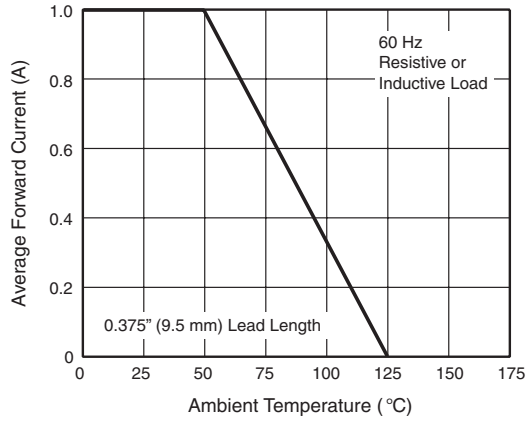


Figure 1. Forward Current Derating Curve

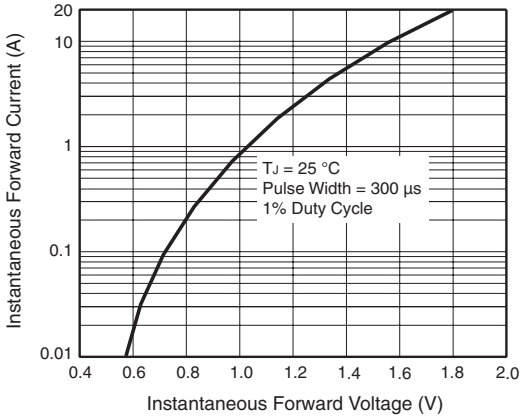


Figure 3. Typical Instantaneous Forward Characteristics

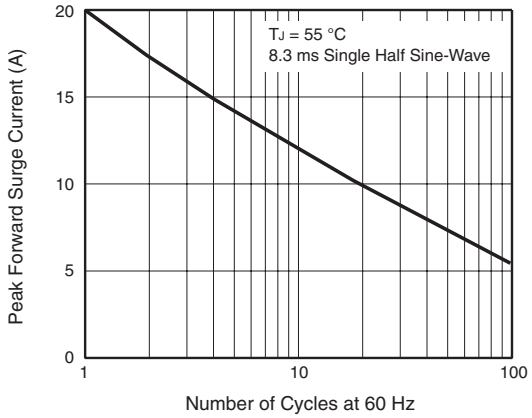


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

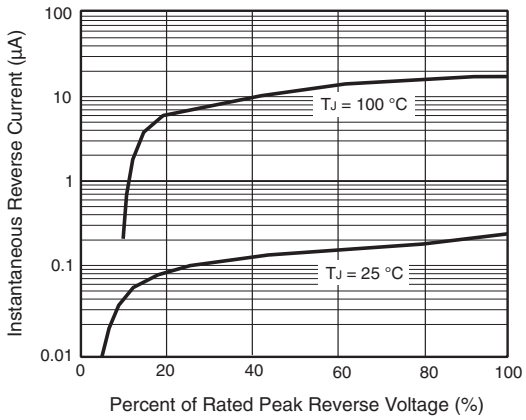


Figure 4. Typical Reverse Characteristics

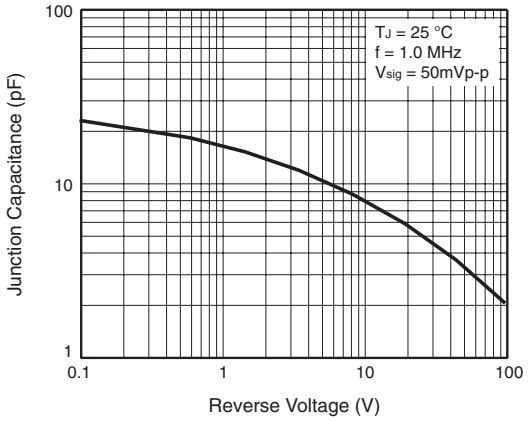


Figure 5. Typical Junction Capacitance

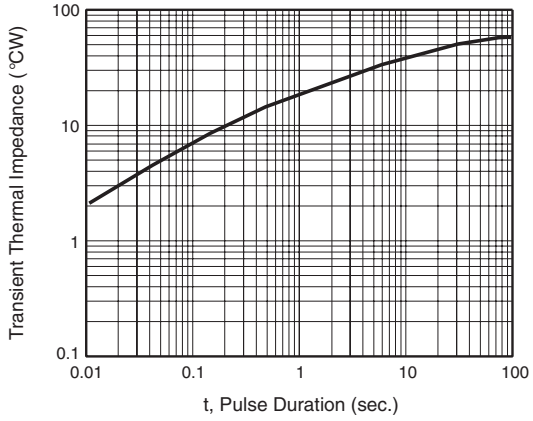
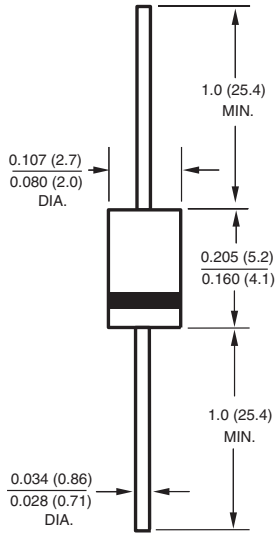


Figure 6. Typical Transient Thermal Impedance

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

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