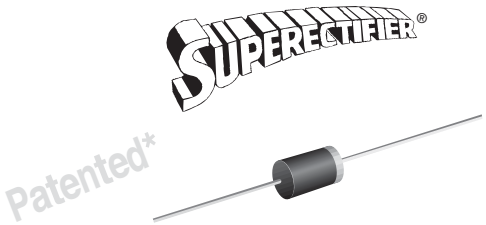
BA157GP thru BA159GP

Vishay General Semiconductor

Glass Passivated Junction Fast Switching Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
V_{RRM}	400 V to 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.	175 °C



* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602, brazed-lead assembly by Patent No. 3,930,306

DO-204AL (DO-41)

Features

- Superectifier structure for High Reliability condition
- Cavity-free glass-passivated junction
- Fast switching for high efficiency
- Low leakage current, typical I_R less than 0.1 µA
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip 260 °C, 40 seconds

Typical Applications

For general purpose of medium frequency rectifiaction

Mechanical Data

Case: DO-204AL, molded epoxy over glass body

Epoxy meets UL-94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

Maximum Ratings

(T_A = 25 °C unless otherwise noted)

Parameter	Symbols	BA157GP	BA158GP	BA159DGP	BA159GP	Units
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
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175				°C

Electrical Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Test condition	Symbols	BA157GP	BA158GP	BA159DGP	BA159GP	Units
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	500	ns
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	15				pF

Thermal Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Symbols	BA157GP	BA158GP	BA159DGP	BA159GP	Units
Typical thermal resistance (1)	$R_{\theta JA}$	55				°C/W

Notes:

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

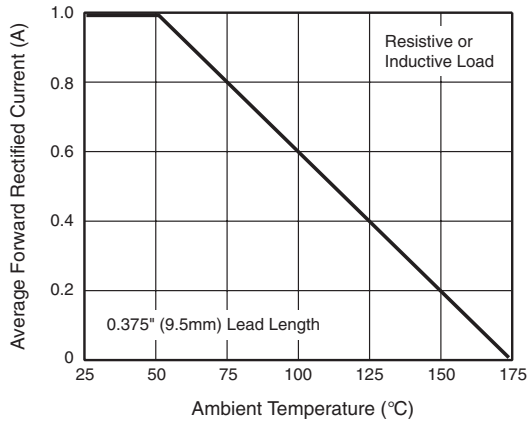


Figure 1. Forward Current Derating Curve

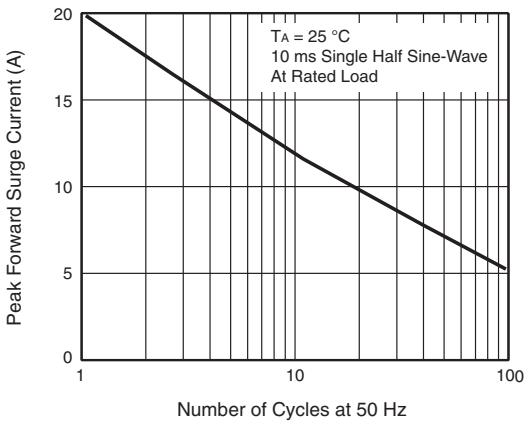


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

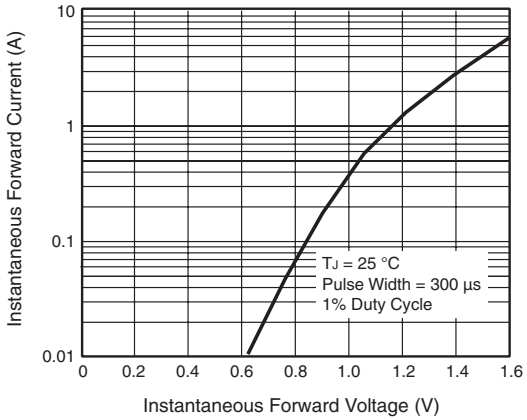


Figure 3. Typical Instantaneous Forward Characteristics

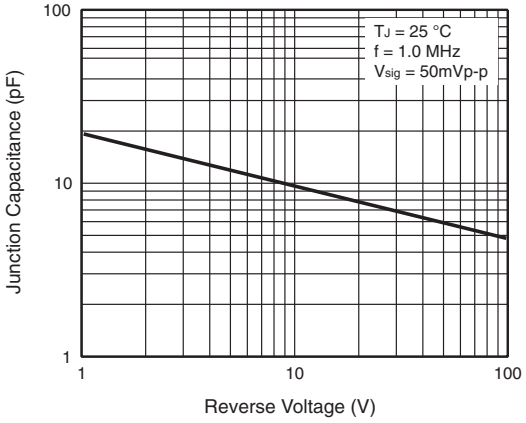


Figure 5. Typical Junction Capacitance

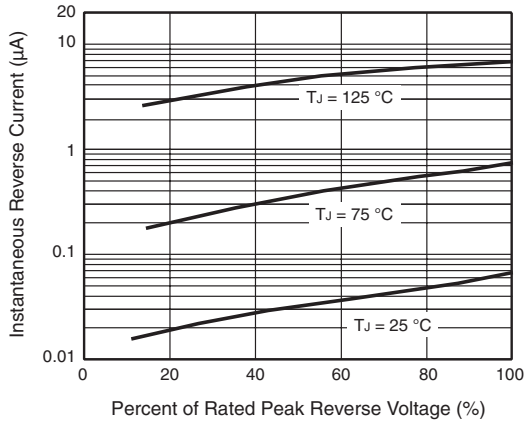


Figure 4. Typical Reverse Characteristics

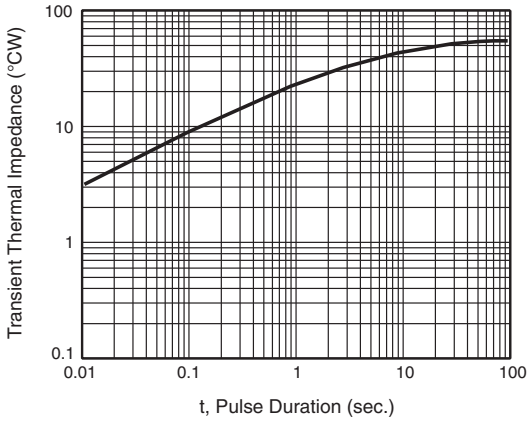
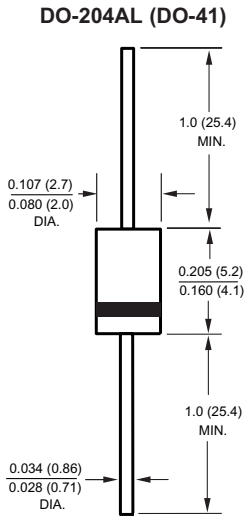


Figure 6. Typical Transient Thermal Impedance

Package outline dimensions in inches (millimeters)



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