Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	800	V
Average Rectified Output Current (see figure 4)	I_O	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	25	A

Thermal Characteristics

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	134	—	°C/W
Thermal Resistance, Junction to Soldering Point (Note 6)	$R_{\theta JS}$	—	6	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	—	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	800	—	—	V	I_R = 10μA
Forward Voltage Drop	V_F	— — — — —	0.65 0.60 0.48 0.94 0.83	— — — 1.1 1.0	V	I_F = 1.0mA, T_J = 0°C I_F = 1.0mA, T_J = +25°C I_F = 1.0mA, T_J = +85°C I_F = 1.0A, T_J = +25°C I_F = 1.0A, T_J = +125°C
Reverse Leakage Current (Note 7)	I_R	— —	— —	10 150	μA	V_R = 800V, T_J = +25°C V_R = 800V, T_J = +125°C
Total Capacitance	C_T	—	10	—	pF	V_R = 4.0V_{DC}, f = 1MHz

Notes:
5. Device mounted on 1" x 1", FR-4 PCB; 2 oz. Cu pad layout as shown on Diodes Inc. suggested pad layout document AP02001.pdf. T_A = +25°C
6. Theoretical $R_{\Theta JS}$ calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
7. Short duration test pulse used to minimize self-heating effect.
8. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

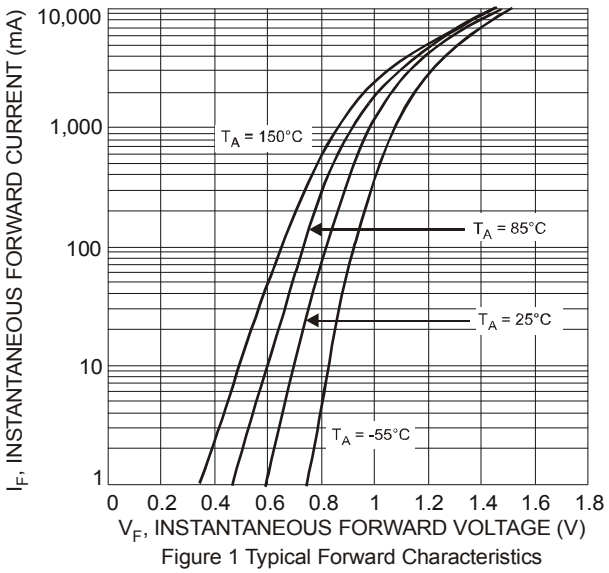


Figure 1 Typical Forward Characteristics

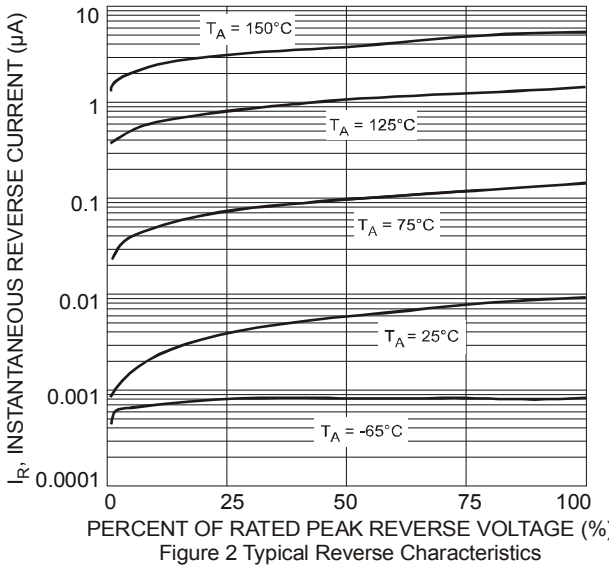


Figure 2 Typical Reverse Characteristics

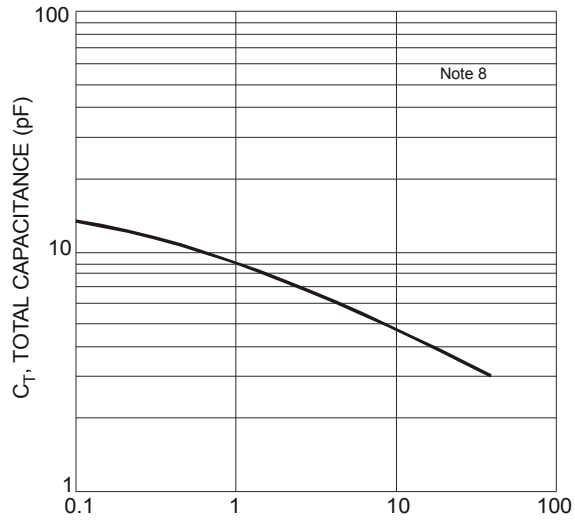


Figure 3 Typical Junction Capacitance

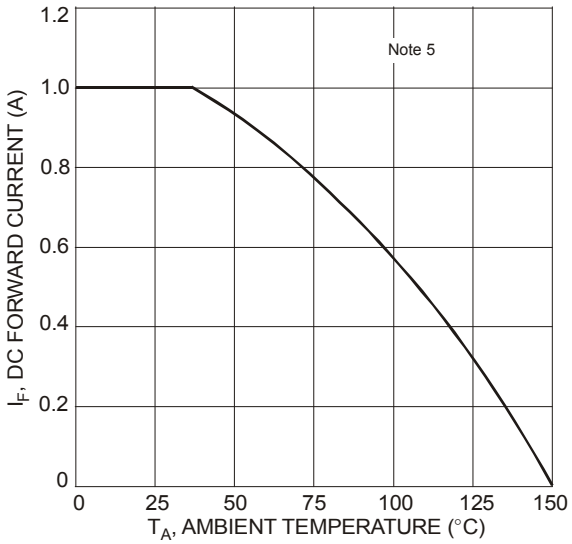


Figure 4 DC Forward Current Derating

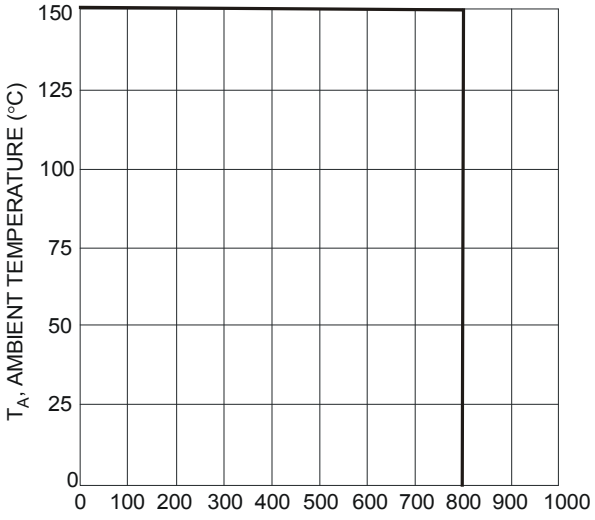


Figure 5 Reverse Voltage Derating

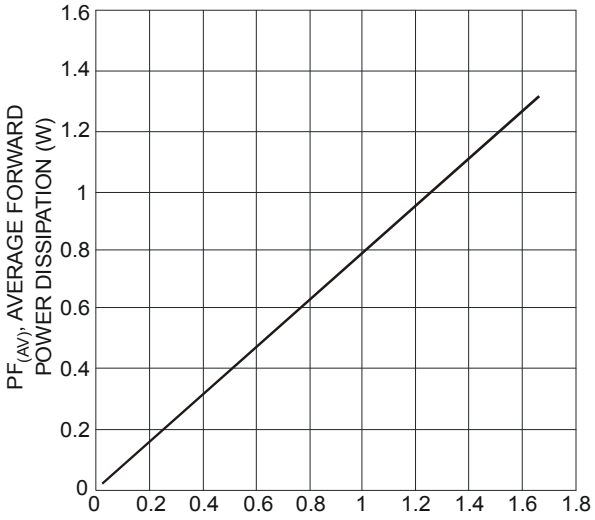
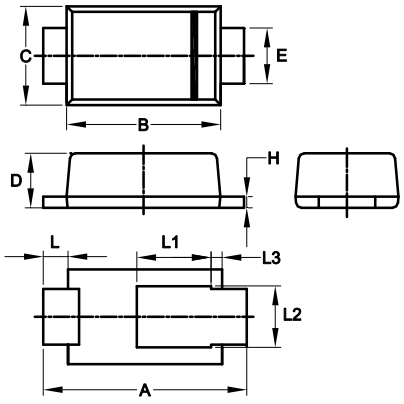


Figure 6 Forward Power Dissipation

Package Outline Dimensions

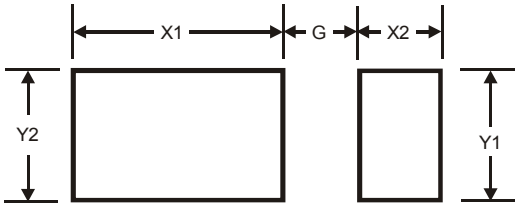
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



POWERDI®123			
Dim	**Min**	**Max**	**Typ**
A	3.50	3.90	3.70
B	2.60	3.00	2.80
C	1.63	1.93	1.78
D	0.93	1.00	0.98
E	0.85	1.25	1.00
H	0.15	0.25	0.20
L	0.40	0.50	0.45
L1	1.25	1.40	1.35
L2	1.025	1.125	1.10
L3	0.125	0.275	0.20
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
G	1.0
X1	2.2
X2	0.9
Y1	1.4
Y2	1.4