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

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive 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	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Forward Current	$I_{F(AV)}$	2.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	50	A
Electrostatic Discharge	HBM	4000	V
Electrostatic Discharge	MM	400	V
Electrostatic Discharge	CDM	1	kV

Thermal Characteristics

Characteristic	Symbol	Typ	Max	Unit
Power Dissipation (Note 6)	P_D	—	1.67	W
Power Dissipation (Note 7)	P_D	—	556	mW
Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	60	—	°C/W
Thermal Resistance Junction to Ambient (Note 7)	$R_{\theta JA}$	180	—	°C/W
Thermal Resistance Junction to Ambient (Note 8)	$R_{\theta JA}$	135	—	°C/W
Thermal Resistance Junction to Lead (Cathode) (Note 9)	$R_{\theta JL}$	—	6	°C/W
Operating Temperature Range	T_J	-55 to +125		°C
Storage Temperature Range	T_{STG}	-55 to +150		°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 10)	$V_{(BR)R}$	40	—	—	V	I_R = 500μA, T_A = +25°C
Forward Voltage	V_F	— — —	0.4 0.45 0.50	0.45 0.50 0.65	V	I_F = 1.0A, T_A = +25°C I_F = 2.0A, T_A = +25°C I_F = 3.0A, T_A = +25°C
Leakage Current (Note 10)	I_R	— — — —	— — — —	0.1 10 0.05 5	mA	V_R = 40V, T_A = +25°C V_R = 40V, T_A = +85°C V_R = 20V, T_A = +25°C V_R = 20V, T_A = +85°C
Total Capacitance	C_T	—	90	—	pF	V_R = 10V, f = 1.0MHz
Switching Speed t_{RR}	t_{RR}	—	12	—	ns	I_F=0.5A, I_R=1A, I_{RR}=0.25A (RG1)

Notes:
6. Part mounted on 50.8mm X 50.8mm GETEK board with 25.4mm X 25.4mm copper pad, 25% anode, 75% cathode.
7. Part mounted on FR-4 board with 1.8mm X 2.5mm cathode and 1.8mm X 1.2mm anode, 1 oz. copper pads.
8. Part mounted on FR-4 PC board, 2oz.minimum recommended pad layout per http://www.diodes.com/package-outlines.html.
9. Theoretical $R_{\Theta JL}$ calculated from the top center of the die straight down to the PCB cathode tab solder junction.
10. Short duration pulse test used to minimize self-heating effect.

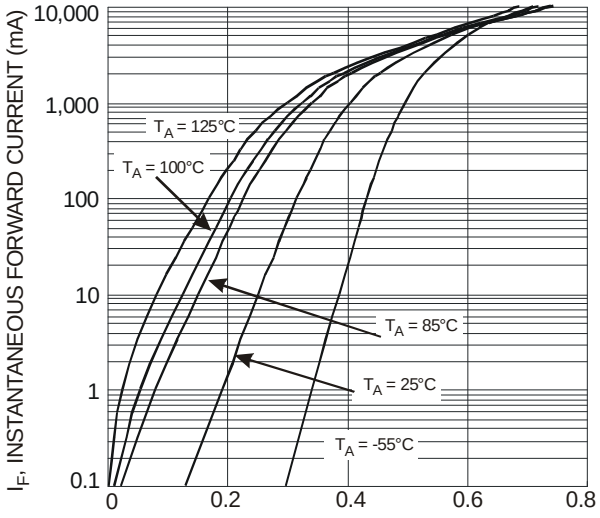


Figure 1 Typical Forward Characteristics

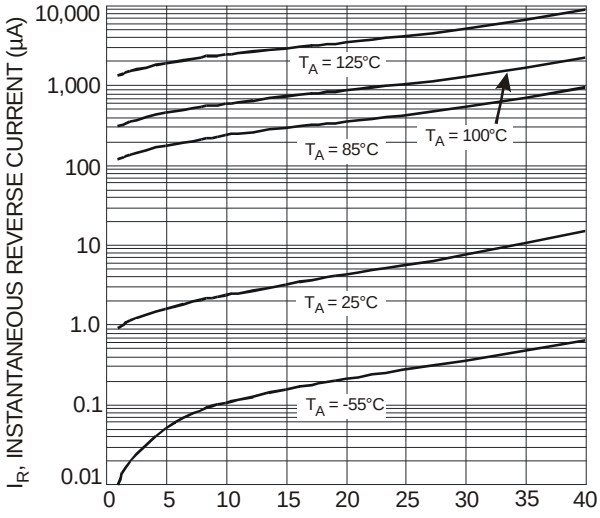


Figure 2 Typical Reverse Characteristics

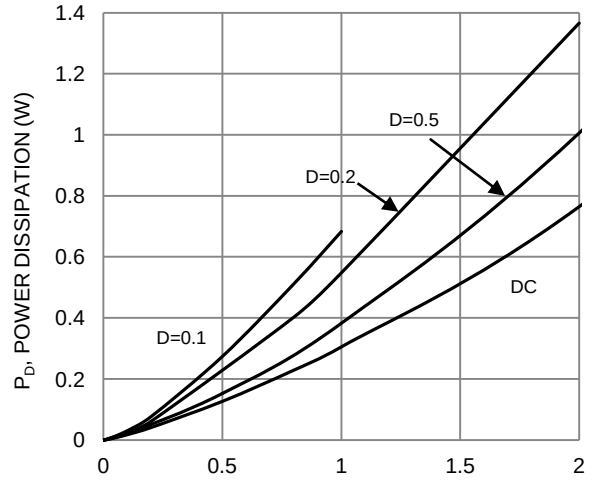


Figure 3. Forward Power Dissipation T_J=125ºC

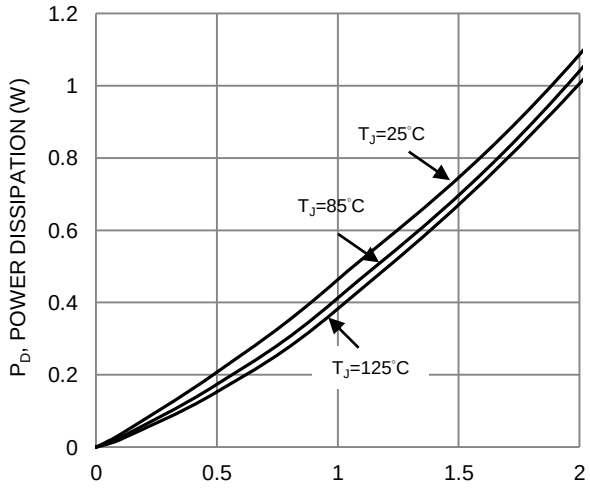


Figure 4. Forward Power Dissipation D=0.5

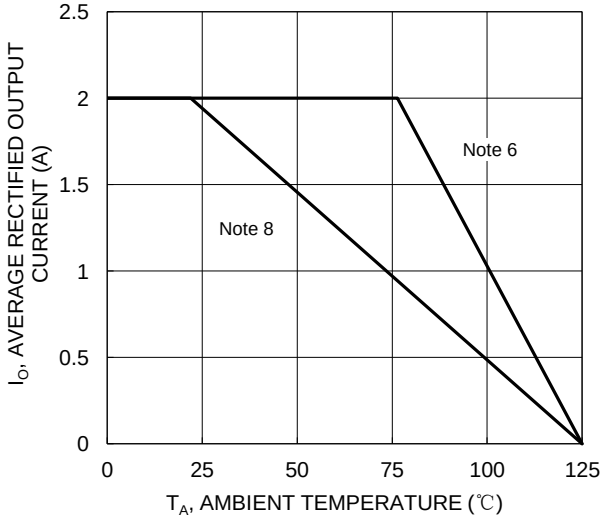


Figure 5. DC Forward Current Derating

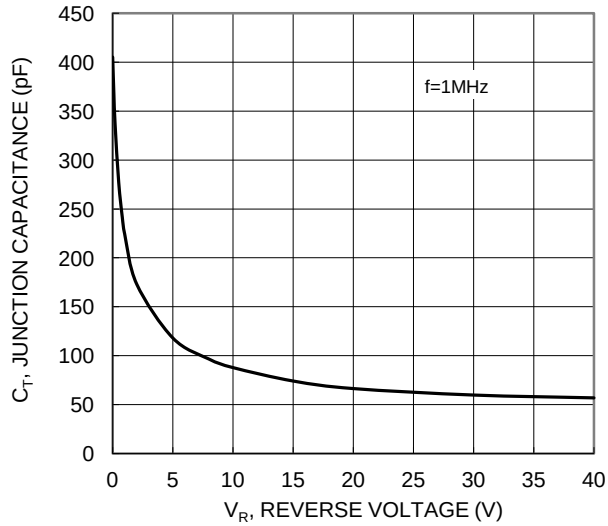


Figure 6. Typical Junction Capacitance

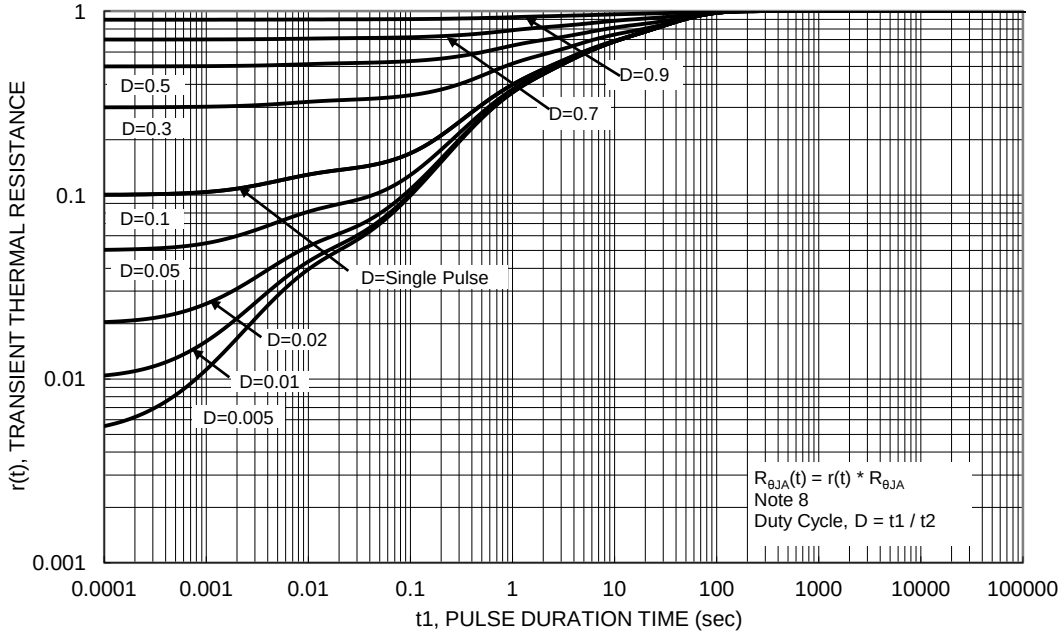
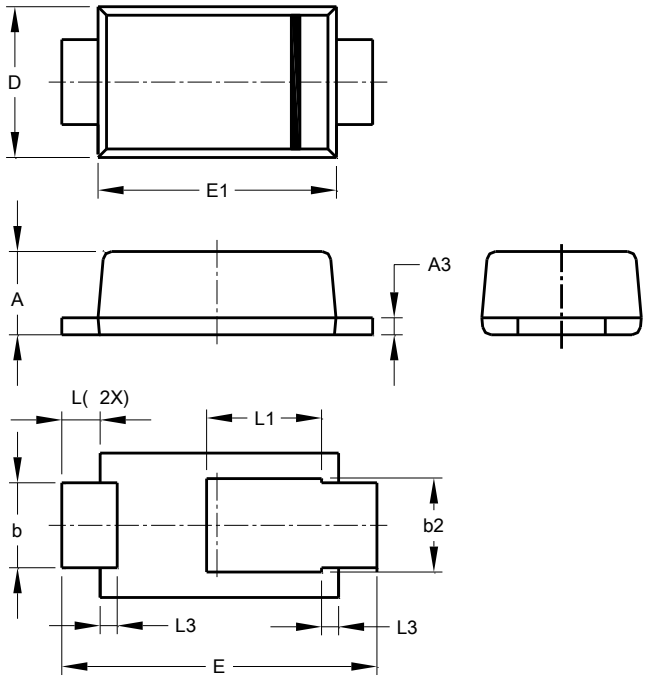


Figure 7. Transient Thermal Resistance

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

PowerDI123

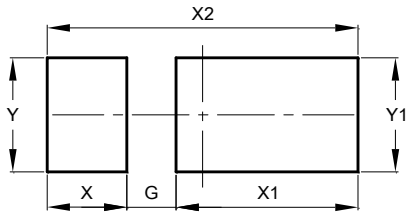


PowerDI123			
Dim	**Min**	**Max**	**Typ**
A	0.93	1.00	0.98
A3	0.15	0.25	0.20
b	0.85	1.25	1.00
b2	1.025	1.125	1.10
D	1.63	1.93	1.78
E	3.50	3.90	3.70
E1	2.60	3.00	2.80
L	0.40	0.50	0.45
L1	1.25	1.40	1.35
L3	0.125	0.275	0.20
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

PowerDI123



Dimensions	Value (in mm)
G	0.65
X	1.05
X1	2.40
X2	4.10
Y	1.50
Y1	1.50

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