

Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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	V_{RRM}	40	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Output Current (see also Figure 5)	I_O	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	275	A

Thermal Characteristics

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Soldering Point	$R_{\theta JS}$	—	1.5	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient Air (Note 3)	$R_{\theta JA}$	95	—	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient Air (Note 4)	$R_{\theta JA}$	75	—	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\theta JA}$	50	—	$^\circ\text{C/W}$
Operating Junction Temperature Range $V_R \leq 80\% V_{RRM}$ $V_R \leq 50\% V_{RRM}$	T_J	-65 to +150 -65 to +180		$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to +150		$^\circ\text{C}$

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	40	—	—	V	$I_R = 1\text{mA}$
Forward Voltage	V_F	—	0.45	0.49	V	$I_F = 8\text{A}, T_S = 25^\circ\text{C}$
		—	0.47	0.51		$I_F = 10\text{A}, T_S = 25^\circ\text{C}$
		—	—	0.41		$I_F = 8\text{A}, T_S = 125^\circ\text{C}$
		—	0.42	0.49		$I_F = 10\text{A}, T_S = 125^\circ\text{C}$
Reverse Leakage Current (Note 6)	I_R	—	0.02	0.3	mA	$T_S = 25^\circ\text{C}, V_R = 35\text{V}$
		—	5.5	25		$T_S = 100^\circ\text{C}, V_R = 35\text{V}$
		—	0.03	0.7		$T_S = 25^\circ\text{C}, V_R = 40\text{V}$
		—	6.5	50		$T_S = 100^\circ\text{C}, V_R = 40\text{V}$

- Notes:
- FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com>.
 - Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com>.
 - Polyimide PCB, 2 oz. Copper. Cathode pad dimensions 9.4mm x 7.2mm. Anode pad dimensions 2.7mm x 1.6mm.
 - Short duration pulse test used to minimize self-heating effect.
 - Polyimide PCB, 2 oz. Copper. Cathode pad dimensions 18.8mm x 14.4mm. Anode pad dimensions 5.6mm x 3.0mm.
 - Devices mounted such that $R_{\theta JA} = 19^\circ\text{C/W}$.

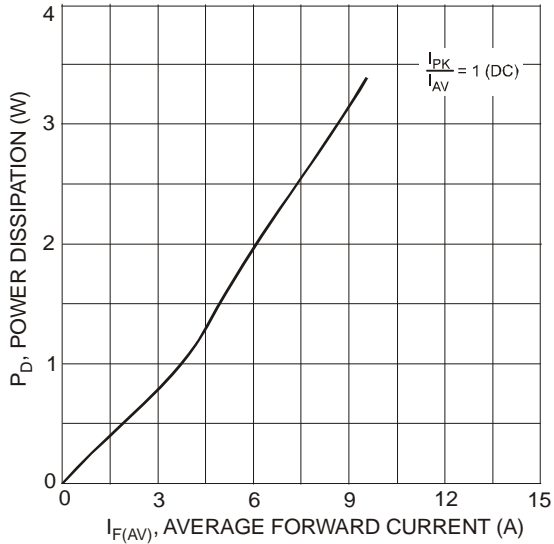


Fig. 1 Forward Power Dissipation

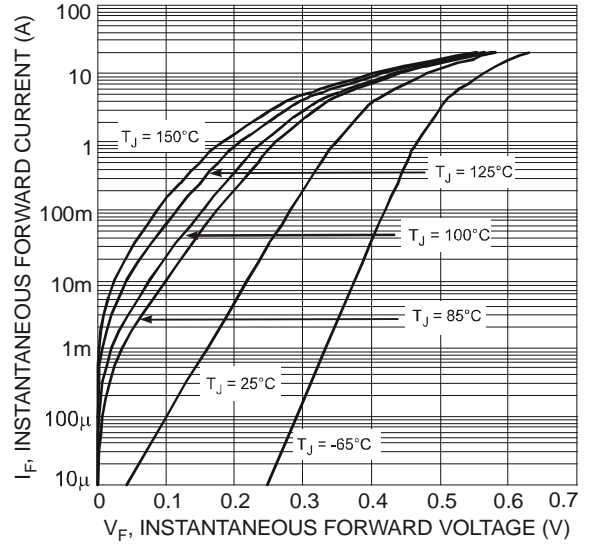


Fig. 2 Typical Forward Characteristics

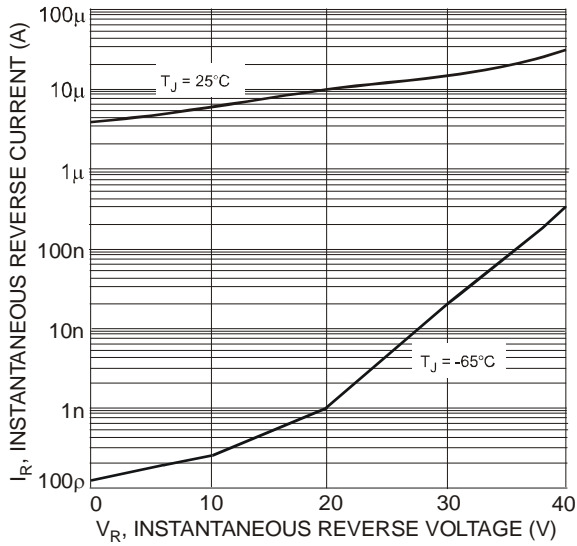


Fig. 3 Typical Reverse Characteristics

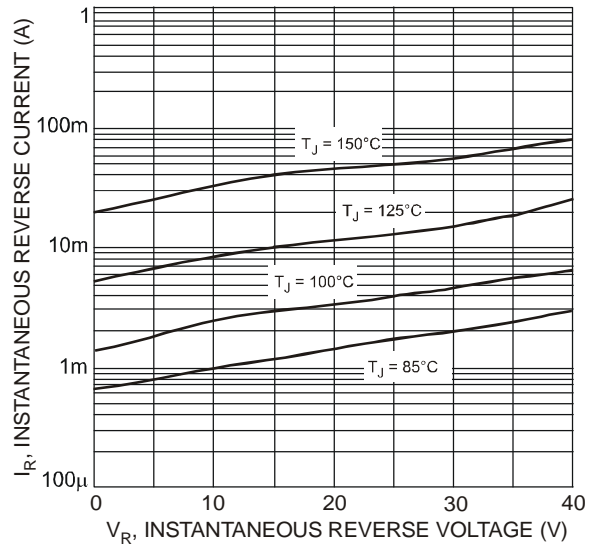


Fig. 4 Typical Reverse Characteristics

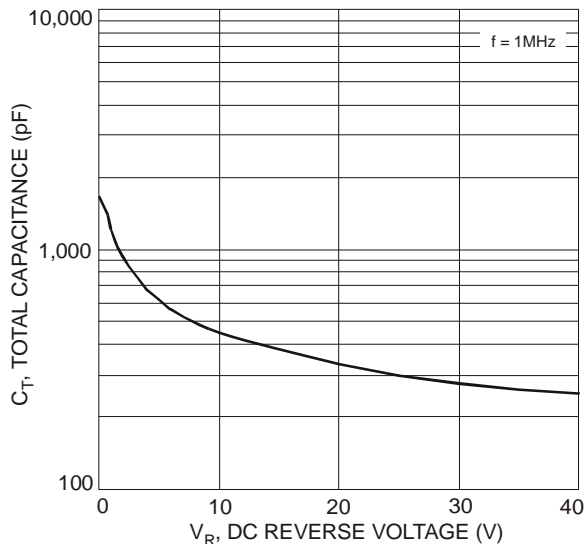


Fig. 5 Total Capacitance vs. Reverse Voltage

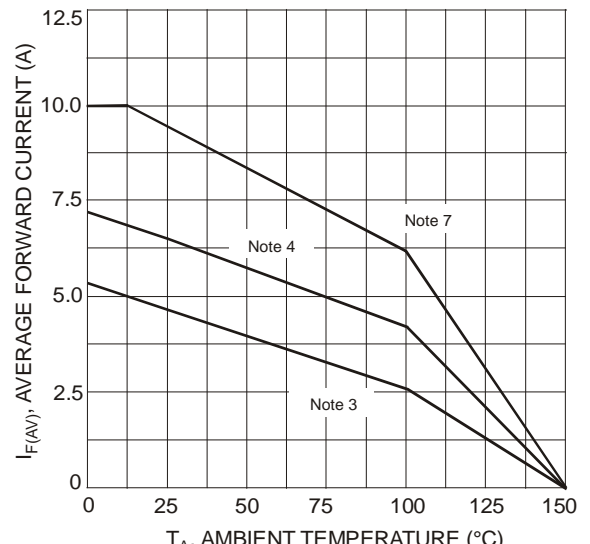


Fig. 6 Forward Current Derating Curve

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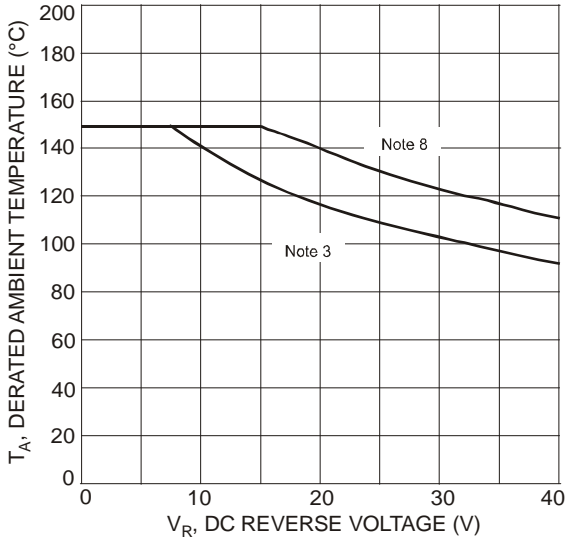
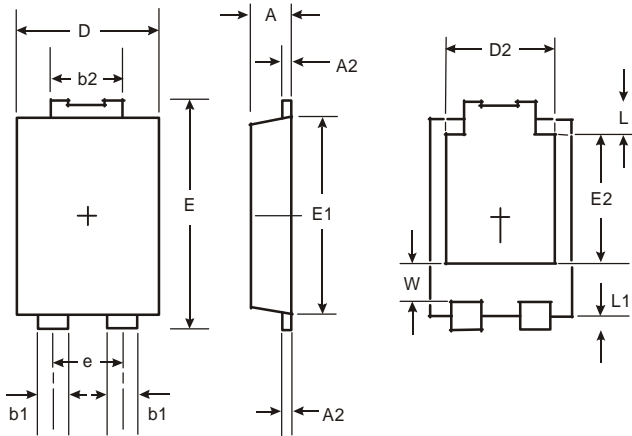


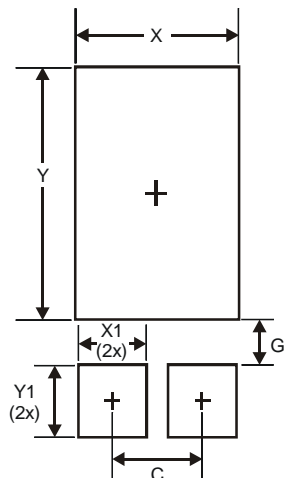
Fig. 7 Operating Temperature Derating

Package Outline Dimensions



PowerDI [®] 5		
Dim	Min	Max
A	1.05	1.15
A2	0.33	0.43
b1	0.80	0.99
b2	1.70	1.88
D	3.90	4.05
D2	3.054 Typ	
E	6.40	6.60
e	1.84 Typ	
E1	5.30	5.45
E2	3.549 Typ	
L	0.75	0.95
L1	0.50	0.65
W	1.10	1.41
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
C	1.840
G	0.852
X	3.360
X1	1.390
Y	4.860
Y1	1.400

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