

**Maximum Ratings** (@T<sub>A</sub> = +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	V <sub>RRM</sub>	45	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	32	V
Average Rectified Output Current	I <sub>O</sub>	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	90	A
Repetitive Peak Avalanche Power (1μs, +25°C)	P <sub>ARM</sub>	5000	W
Non-Repetitive Avalanche Energy (T <sub>J</sub> = +25°C, I <sub>AS</sub> = 12A, L = 10mH)	E <sub>AS</sub>	200	mJ

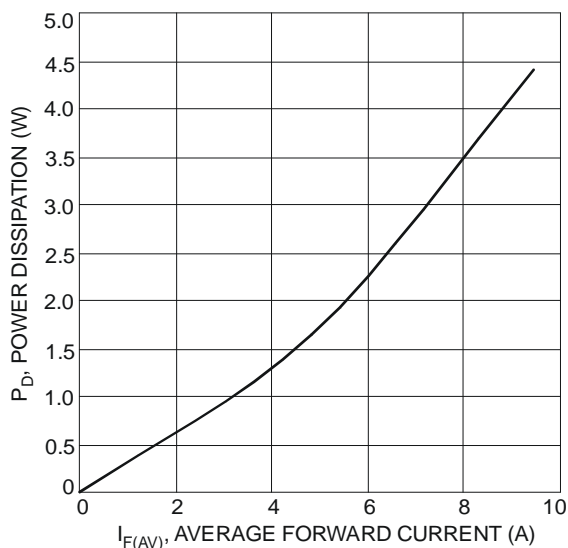
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance	R <sub>θJA</sub> R <sub>θJC</sub>	29	°C/W
Thermal Resistance Junction to Ambient (Note 5)		3	
Thermal Resistance Junction to Case (Note 5)			
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

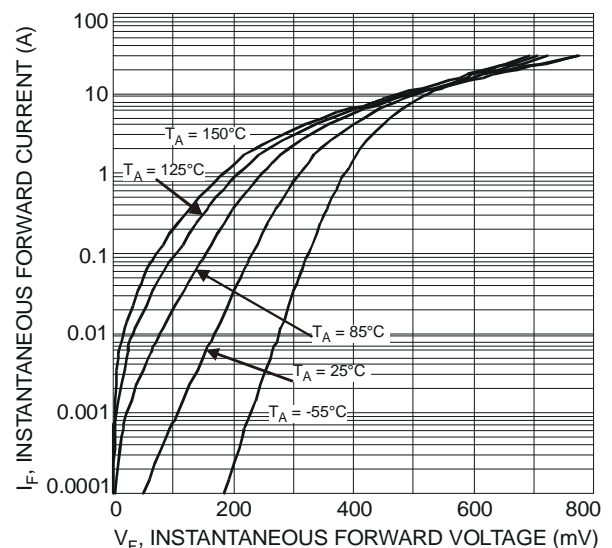
**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	45	—	—	V	I <sub>R</sub> = 0.5mA
Forward Voltage Drop	V <sub>F</sub>	—	0.42	—	V	I <sub>F</sub> = 5A, T <sub>J</sub> = +25°C
		—	0.37	—		I <sub>F</sub> = 5A, T <sub>J</sub> = +125°C
		—	0.53	0.58		I <sub>F</sub> = 10A, T <sub>J</sub> = +25°C
		—	0.50	—		I <sub>F</sub> = 10A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	150	300	μA	V <sub>R</sub> = 45V, T <sub>J</sub> = +25°C
		—	50	—	mA	V <sub>R</sub> = 45V, T <sub>J</sub> = +125°C
Total Capacitance	C <sub>T</sub>	—	400	—	pF	V <sub>R</sub> = 5V, f = 1MHz T <sub>J</sub> = +25°C

Notes: 5. Device mounted on polyimide substrate, 240mm<sup>2</sup> Copper pad, double-sided PC Board.  
 6. Short duration pulse test used to minimize self-heating effect.



Notes: 7. Polyimide, 2oz. Copper 16x minimum recommended pad layout per <http://www.diodes.com>



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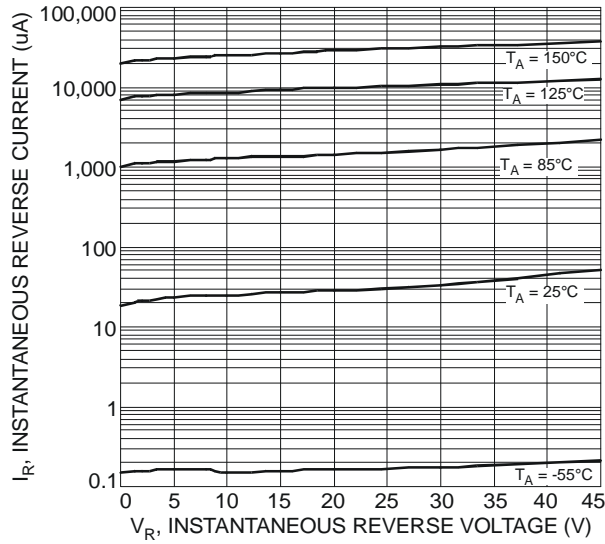


Fig. 3 Typical Reverse Characteristics

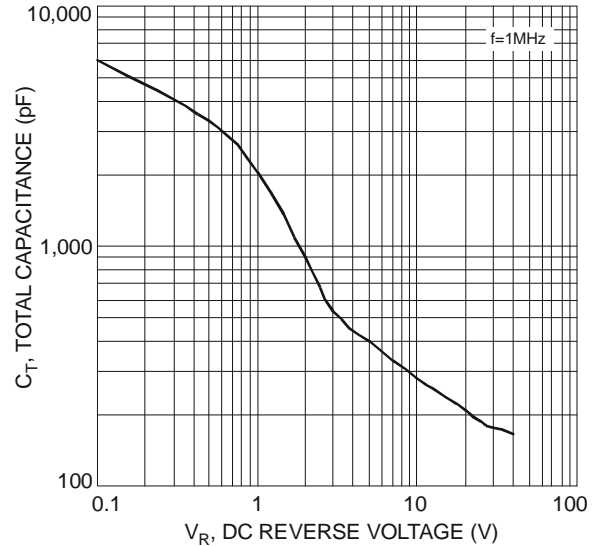


Fig. 4 Total Capacitance vs. Reverse Voltage

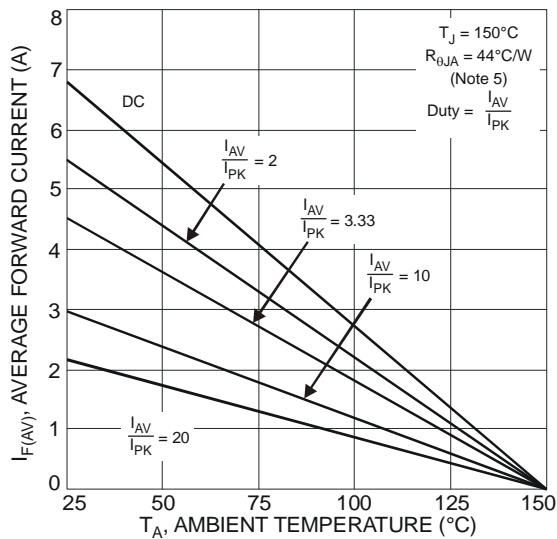


Fig. 5 Forward Current Derating Curve

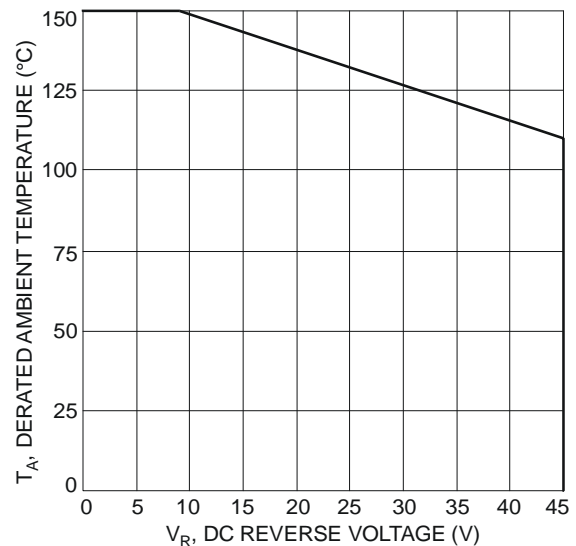


Fig. 6 Operating Temperature Derating

Notes: 8. Polyimide, 2oz. Copper 16x minimum recommended pad layout per <http://www.diodes.com>

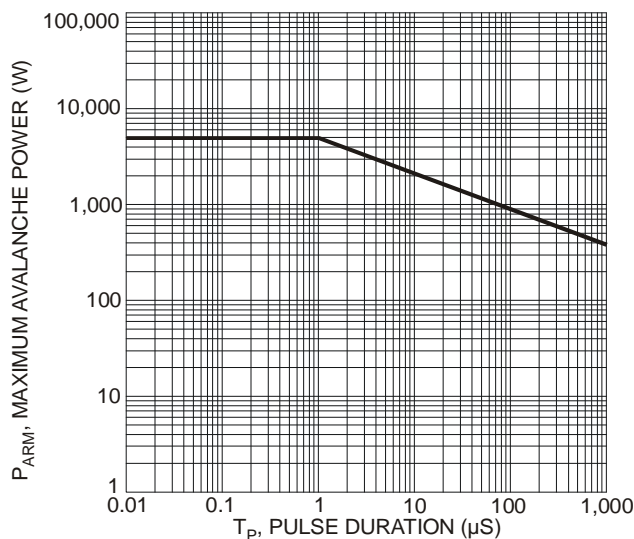


Fig. 7 Maximum Avalanche Power Curve

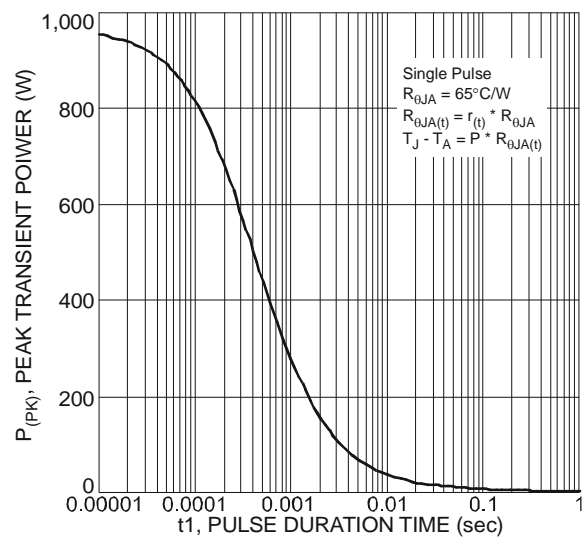
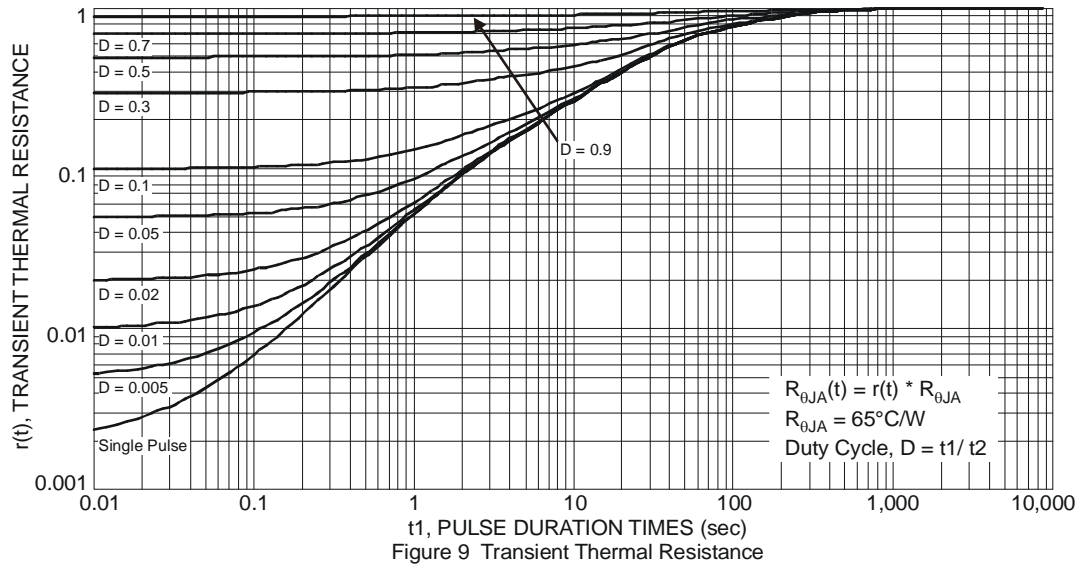
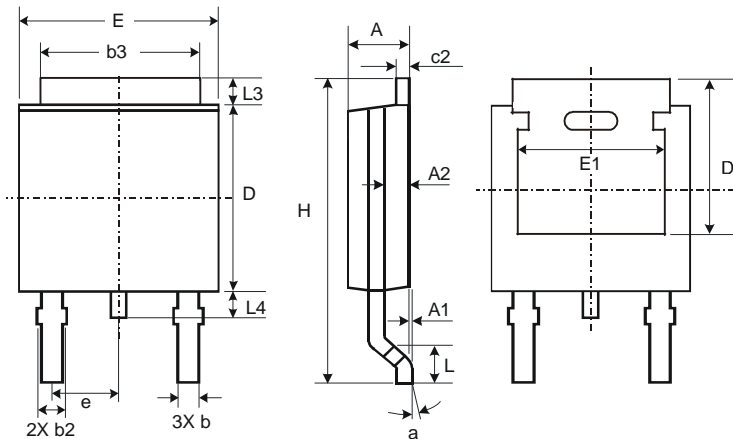


Figure 8 Single Pulse Maximum Power Dissipation



## Package Outline Dimensions

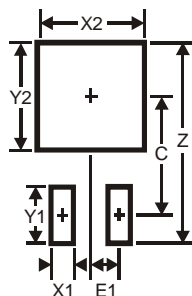
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



TO252			
Dim	Min	Max	Typ
A	2.19	2.39	2.29
A1	0.00	0.13	0.08
A2	0.97	1.17	1.07
b	0.64	0.88	0.783
b2	0.76	1.14	0.95
b3	5.21	5.46	5.33
c2	0.45	0.58	0.531
D	6.00	6.20	6.10
D1	5.21	—	—
e	—	—	2.286
E	6.45	6.70	6.58
E1	4.32	—	—
H	9.40	10.41	9.91
L	1.40	1.78	1.59
L3	0.88	1.27	1.08
L4	0.64	1.02	0.83
a	0°	10°	—
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)
Z	11.6
X1	1.5
X2	7.0
Y1	2.5
Y2	7.0
C	6.9
E1	2.3

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