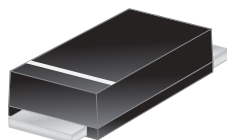




Features

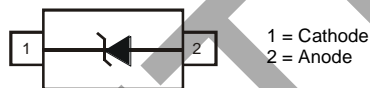
- Packaged in the Low Profile D-FLAT Package to Optimize Board Space
- Glass Passivated Die Construction
- Excellent Clamping Capability
- Fast Response Time
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**



Top View

Mechanical Data

- Case: D-FLAT
- Case Material: Molded Plastic.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe.
Solderable per MIL-STD-202, Method 208 (E3)
- Polarity Indicator: Cathode Band
- Weight: 0.035 grams (Approximate)



Device Schematic

Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
P4SMAJXXADF-13	Commercial	D-FLAT	10,000/Tape & Reel

*x = Device Voltage, for example: P4SMAJ17ADF-13.

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



- xx = Product Type Marking Code
(See Electrical Characteristics Table)
- JII = Manufacturers' Code Marking
- YWW = Date Code Marking
- Y = Last Two Digits of Year (ex: 6 for 2016)
- WW = Week Code (01 to 53)

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

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non Repetitive Current Pulse Derated Above T _A = +25°C) (Note 5)	P _{PK}	400	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (Notes 5 & 6)	I _{FSM}	40	A
Steady State Power Dissipation @ T _L = +75°C	PM(AV)	1.0	W
Instantaneous Forward Voltage @ I _{PP} = 35A (Notes 5 & 6)	V _F	3.5	V

Notes: 5. Valid provided that terminals are kept at ambient temperature.
6. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Terminal (Note 7)	R _{θJT}	32	°C/W
Typical Thermal Resistance, Junction to Terminal (Note 8)	R _{θJT}	40	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 7)	R _{θJA}	112	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 8)	R _{θJA}	91	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Notes: 7. Device mounted on FR-4 substrate, 1"×1", 2oz, single-sided, PC boards with 0.06"×0.09" copper pad.
8. Device mounted on FR-4 substrate, 0.4"×0.5", 2oz, single-sided, PC boards with 0.2"×0.25" copper pad.

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

Part Number	Reverse Standoff Voltage	Breakdown Voltage		Test Current	Max. Reverse Leakage @	Max. Clamping Voltage @ I _{PP}	Max. Peak Pulse Current	Marking Code
	V _{RWM} (V)	V _{BR} @ I _T (Note 9)	Min (V)		Max (V)	V _{RWM} (Note 9)	(Note 10)	
				I _T (mA)	I _R (μA)	V _C (V)	(A)	
P4SMAJ5.0ADF	5.0	6.40	7.25	10	400	9.2	43.5	HE
P4SMAJ6.0ADF	6.0	6.67	7.37	10	400	10.3	38.8	HG
P4SMAJ6.5ADF	6.5	7.22	7.98	10	250	11.2	35.7	HK
P4SMAJ7.0ADF	7.0	7.78	8.60	10	100	12.0	33.3	HM
P4SMAJ7.5ADF	7.5	8.33	9.21	1.0	50	12.9	31.0	HP
P4SMAJ8.0ADF	8.0	8.89	9.83	1.0	25	13.6	29.4	HR
P4SMAJ8.5ADF	8.5	9.44	10.82	1.0	10	14.4	27.7	HT
P4SMAJ9.0ADF	9.0	10.0	11.5	1.0	5.0	15.4	26.0	HV
P4SMAJ10ADF	10	11.1	12.3	1.0	1.0	17.0	23.5	HX
P4SMAJ11ADF	11	12.2	13.5	1.0	1.0	18.2	22.0	HZ
P4SMAJ12ADF	12	13.3	14.7	1.0	1.0	19.9	20.1	IE
P4SMAJ13ADF	13	14.4	15.9	1.0	1.0	21.5	18.6	IG
P4SMAJ14ADF	14	15.6	17.2	1.0	1.0	23.2	17.2	IK
P4SMAJ15ADF	15	16.7	18.5	1.0	1.0	24.4	16.4	IM
P4SMAJ16ADF	16	17.8	19.7	1.0	1.0	26.0	15.3	IP
P4SMAJ17ADF	17	18.9	20.9	1.0	1.0	27.6	14.5	IR
P4SMAJ18ADF	18	20.0	22.1	1.0	1.0	29.2	13.7	IT
P4SMAJ20ADF	20	22.2	24.5	1.0	1.0	32.4	12.3	IV
P4SMAJ22ADF	22	24.4	26.9	1.0	1.0	35.5	11.2	IX
P4SMAJ24ADF	24	26.7	29.5	1.0	1.0	38.9	10.3	IZ
P4SMAJ26ADF	26	28.9	31.9	1.0	1.0	42.1	9.5	JE
P4SMAJ28ADF	28	31.1	34.4	1.0	1.0	45.4	8.8	JG
P4SMAJ30ADF	30	33.3	36.8	1.0	1.0	48.4	8.3	JK
P4SMAJ33ADF	33	36.7	40.6	1.0	1.0	53.3	7.5	JM
P4SMAJ36ADF	36	40.0	44.2	1.0	1.0	58.1	6.9	JP

Notes: 9. V_{BR} measured with I_T current pulse = 10 ~ 15ms.
10. Per 10 x 1000μs waveform. See Figure 4.

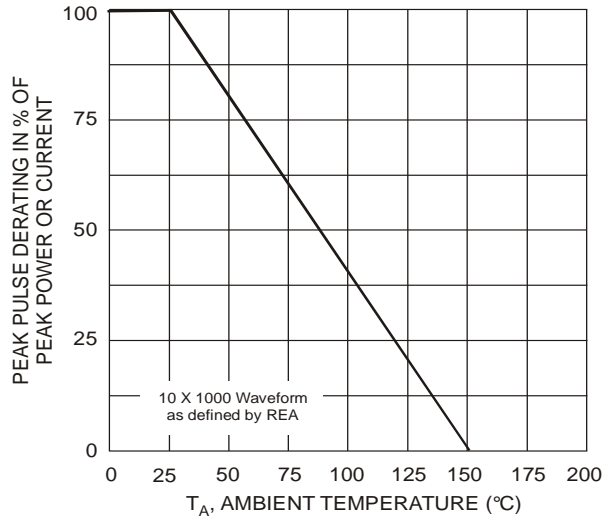


Fig. 1 Pulse Derating Curve

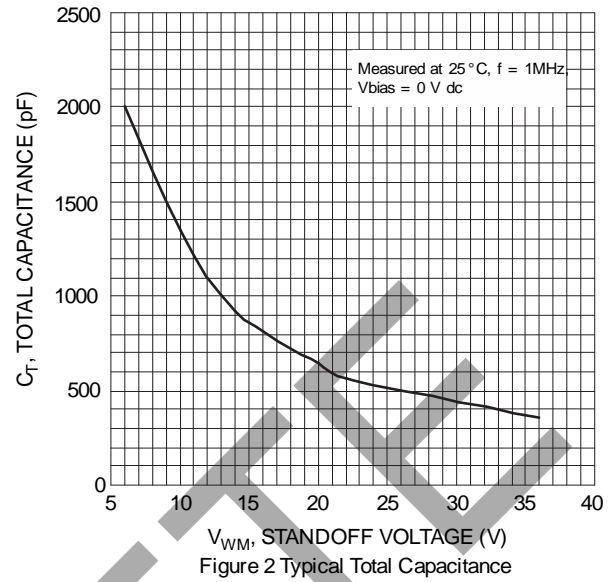


Figure 2 Typical Total Capacitance

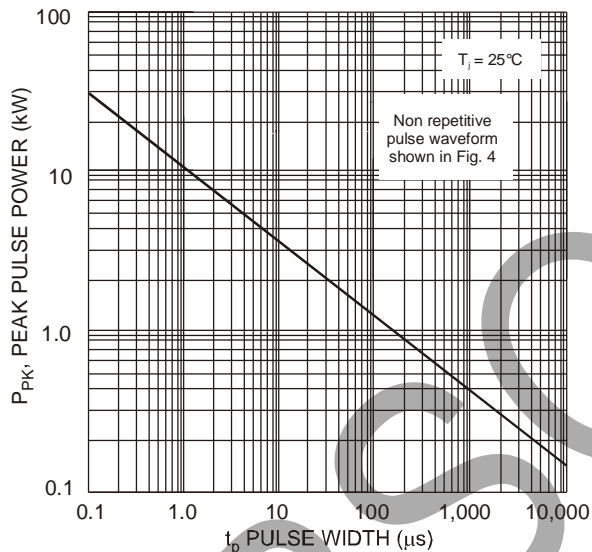


Fig. 3 Pulse Rating Curve

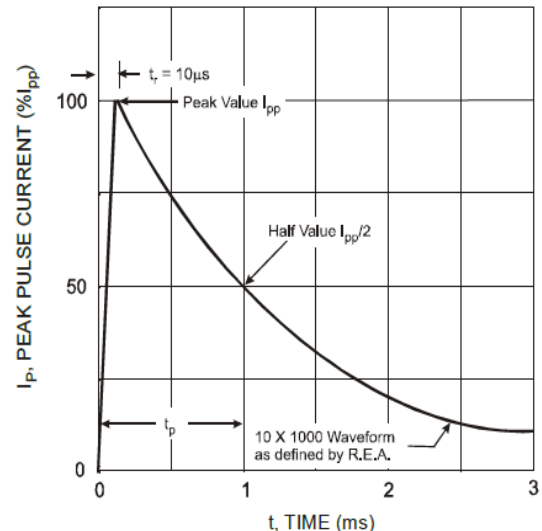


Fig. 4 Pulse Waveform

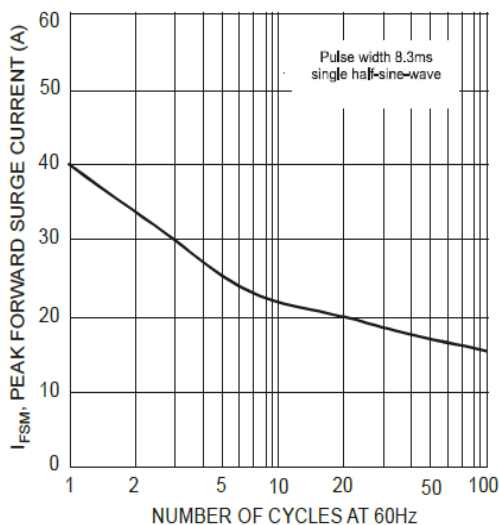


Fig. 5 Maximum Non-Repetitive Surge Current

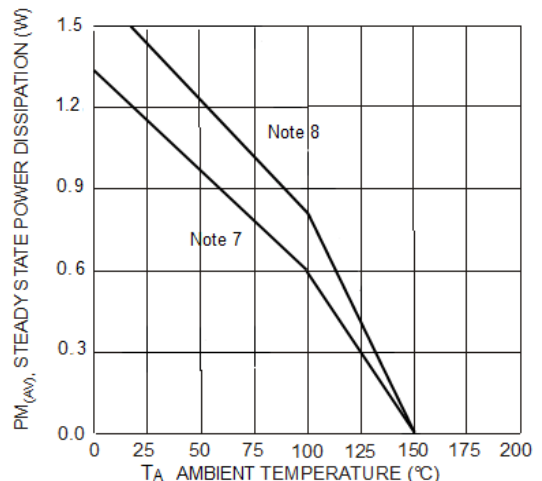


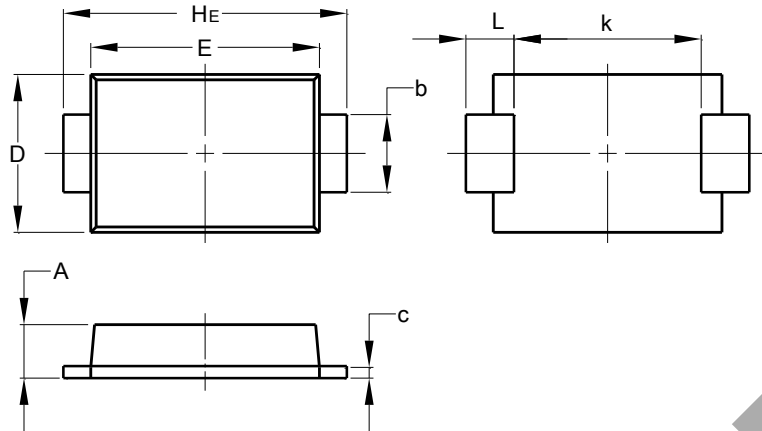
Fig. 6 Steady State Power Derating Curve

Notes: 7. Device mounted on FR-4 substrate, 1"×1", 2oz, single-sided, PC boards with 0.06"×0.09" copper pad.
8. Device mounted on FR-4 substrate, 0.4"×0.5", 2oz, single-sided, PC boards with 0.2"×0.25" copper pad.

Package Outline Dimensions

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

D-FLAT

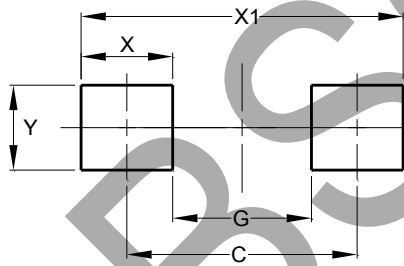


D-FLAT		
Dim	Min	Max
A	0.90	1.10
b	1.25	1.65
c	0.10	0.40
D	2.25	2.95
E	3.95	4.60
k	2.80	-
HE	5.00	5.60
L	0.50	1.30
All Dimensions in mm		

Suggested Pad Layout

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

D-FLAT



Dimensions	Value (in mm)
C	4.65
G	2.80
X	1.85
X1	6.50
Y	1.70

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