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

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Note 5) 10/1000µs (Note 6) 8/20µs	P_{PK}	225 1125	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 7)	I_{FSM}	50	A
Instantaneous Forward Voltage @ I_{PP} = 12A (Note 8)	V_F	3.5	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
DC Steady-State Power Dissipation (Note 9)	P_D	1.0	W
Thermal Resistance, Junction to Ambient (Note 9)	$R_{\theta JA}$	125	°C/W
Thermal Resistance, Junction to Soldering Point (Note 10)	$R_{\theta JS}$	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.)

Part Number	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 11)		Test Current	Max. Reverse Leakage @ V_{RWM}	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current I_{pp}	Marking Code
	V_{RWM} (V)	Min (V)	Max (V)	I_T (mA)	I_R (µA)	V_C (V)	(A)	
DFLT5V0A	5.0	6.40	7.0	10	400	9.2	24.5	FAE
DFLT6V0A	6.0	6.67	7.37	10	400	10.3	21.8	FAG
DFLT6V5A	6.5	7.22	7.98	10	250	11.2	20.1	FAK
DFLT7V0A	7.0	7.78	8.60	10	100	12.0	18.8	FAM
DFLT7V5A	7.5	8.33	9.21	1.0	50	12.9	17.4	FAP
DFLT8V0A	8.0	8.89	9.83	1.0	25	13.6	16.5	FAR
DFLT8V5A	8.5	9.44	10.4	1.0	10	14.4	15.6	FAT
DFLT9V0A	9.0	10.0	11.1	1.0	5.0	15.4	14.6	FAV
DFLT10A	10	11.1	12.3	1.0	2.5	17.0	13.2	FAX
DFLT11A	11	12.2	13.5	1.0	2.5	18.2	12.4	FAZ
DFLT12A	12	13.3	14.7	1.0	2.5	19.9	11.3	FBE
DFLT13A	13	14.4	15.9	1.0	1.0	21.5	10.5	FBG
DFLT14A	14	15.6	17.2	1.0	1.0	23.2	9.7	FBK
DFLT15A	15	16.7	18.5	1.0	1.0	24.4	9.22	FBM
DFLT16A	16	17.8	19.7	1.0	1.0	26.0	8.65	FBP
DFLT17A	17	18.9	20.9	1.0	1.0	27.6	8.15	FBR
DFLT18A	18	20.0	22.1	1.0	1.0	29.2	7.71	FBT
DFLT20A	20	22.2	24.5	1.0	1.0	32.4	6.94	FBV
DFLT22A	22	24.4	26.9	1.0	1.0	35.5	6.34	FBX
DFLT24A	24	26.7	29.5	1.0	1.0	38.9	5.78	FBZ
DFLT26A	26	28.9	31.9	1.0	1.0	42.1	5.35	FCE
DFLT27A	27	30	33.15	1.0	1.0	43.7	5.15	FCF
DFLT28A	28	31.1	34.4	1.0	1.0	45.4	4.96	FCG
DFLT30A	30	33.3	36.8	1.0	1.0	48.4	4.65	FCK
DFLT33A	33	36.7	40.6	1.0	1.0	53.3	4.22	FCM
DFLT36A	36	40.0	44.2	1.0	1.0	58.1	3.87	FCP
DFLT40A	40	44.4	49.1	1.0	1.0	64.5	3.49	FCR
DFLT43A	43	47.8	52.8	1.0	1.0	69.4	3.24	FCT
DFLT45A	45	50.0	55.3	1.0	1.0	72.7	3.10	FCV
DFLT48A	48	53.3	58.9	1.0	1.0	77.4	2.91	FCX
DFLT51A	51	56.7	62.7	1.0	1.0	82.4	2.73	FCZ
DFLT170A	170	189	209	1.0	5.0	281	0.81	FDZ
DFLT220A	220	242	276	1.0	5.0	375	0.60	FEZ

Notes:
5. Non-Repetitive current pulse as shown in figure 2 and derated above T_A = +25°C as per figure 1.
6. Non-Repetitive current pulse as shown in figure 3 and derated above T_A = +25°C as per figure 1.
7. I_{FSM} = 40A for DFLT170A and DFLT220A; I_{FSM} = 50A for all other voltages.
8. 1/2 sine wave (or equivalent square wave), pulse width = 8.3ms, duty cycle = 4 pulses/minute maximum.
9. Device mounted on FR-4 substrate printed circuit board with 1 inch square 2oz copper pad area.
10. Theoretical $R_{\theta JS}$ calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
11. V_{BR} measured at pulse test current I_T with tp ≤5.0ms at T_A = +25°C.

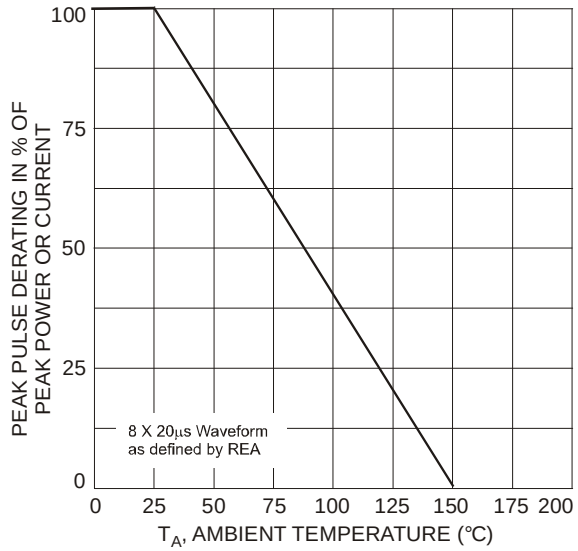


Fig. 1 Pulse Derating Curve

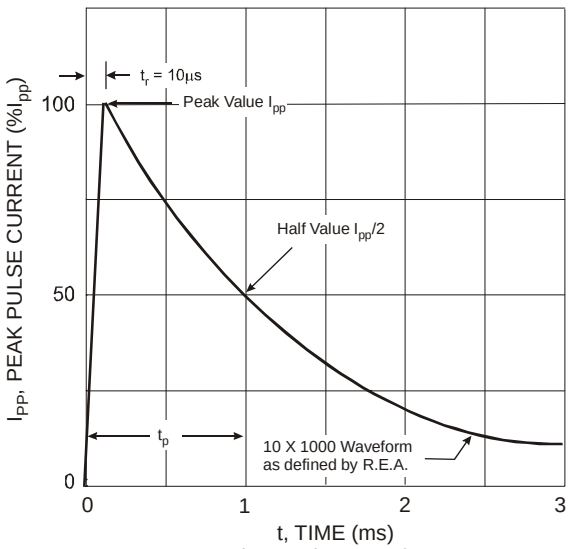


Fig. 2 Pulse Waveform

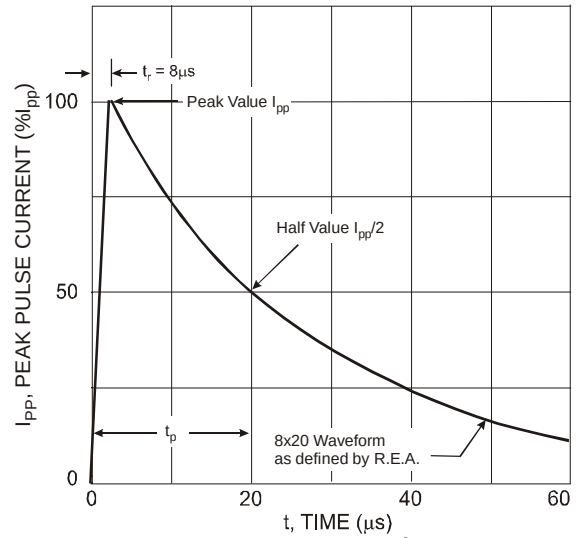


Fig. 3 Pulse Waveform

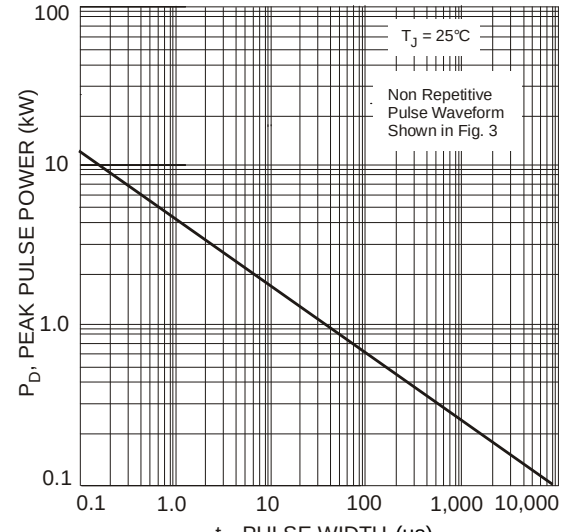


Fig. 4 Pulse Rating Curve

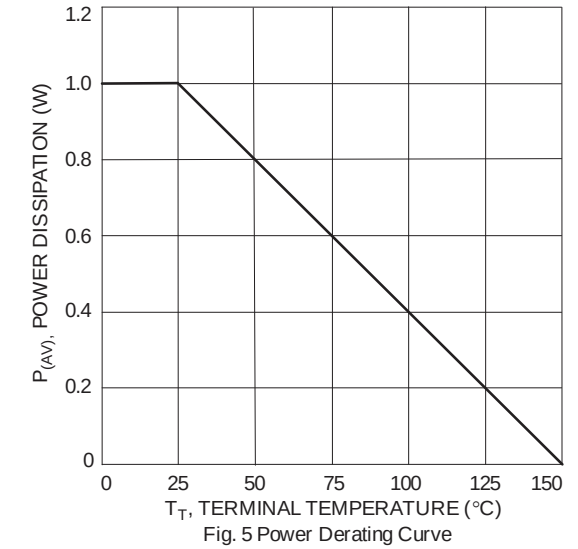


Fig. 5 Power Derating Curve

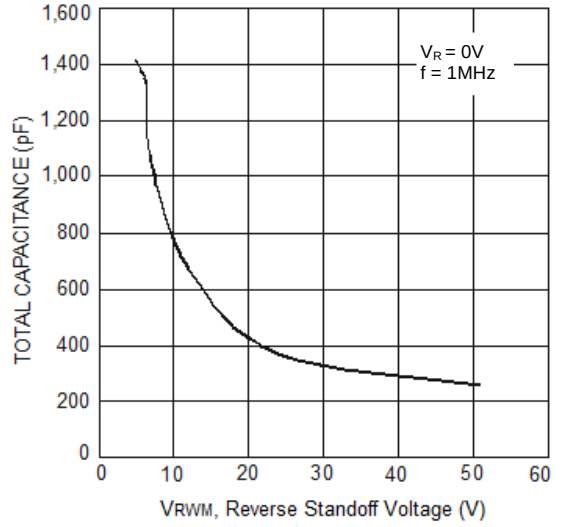


Fig.6 Total Capacitance vs Reverse Standoff Voltage

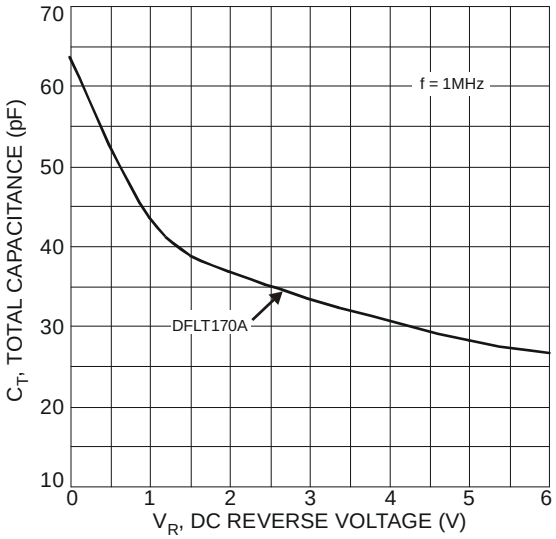


Fig. 7 Total Capacitance vs. Reverse Voltage

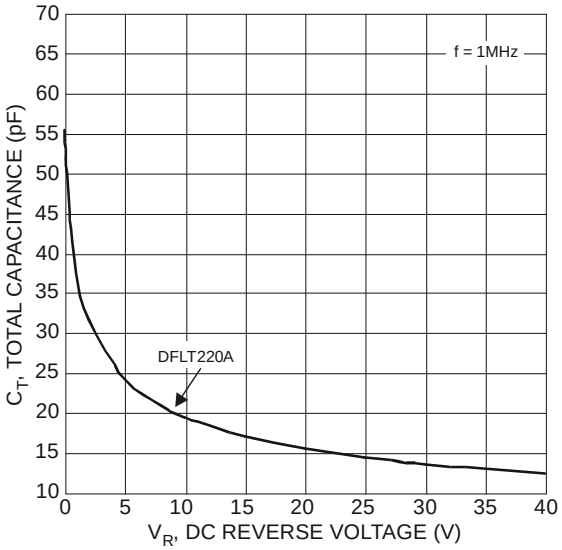
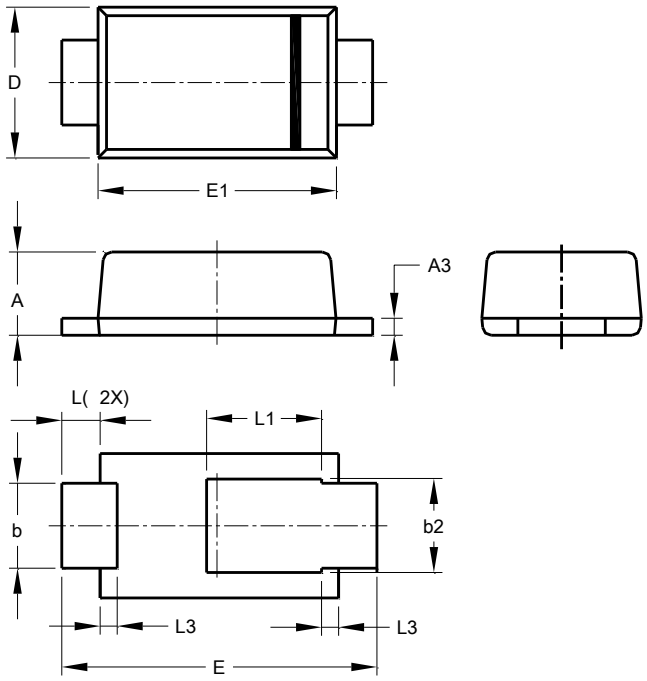


Fig. 8 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

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

PowerDI®123

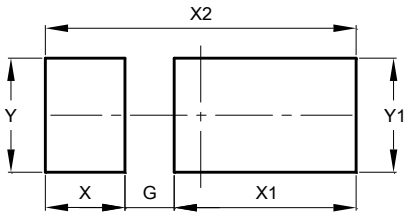


PowerDI®123			
Dim	**Min**	**Max**	**Typ**
A	0.93	1.00	0.98
A3	0.15	0.25	0.20
b	0.85	1.25	1.00
b2	1.025	1.125	1.10
D	1.63	1.93	1.78
E	3.50	3.90	3.70
E1	2.60	3.00	2.80
L	0.40	0.50	0.45
L1	1.25	1.40	1.35
L3	0.125	0.275	0.20
All Dimensions in mm			

Suggested Pad Layout

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

PowerDI®123



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