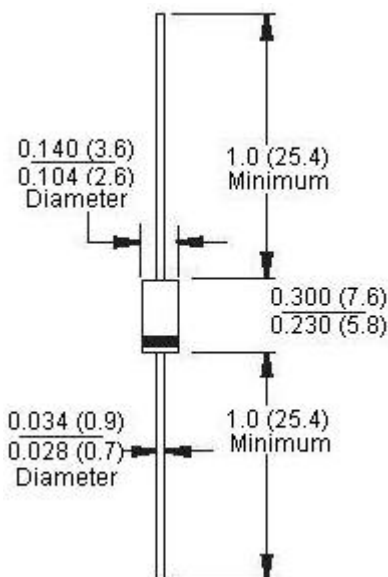




Features:

- Plastic package.
- Exceeds environmental standards of MIL-STD-19500.
- 600W surge capability at 10 x 1000 μ s waveform, duty cycle: 0.01%.
- Excellent clamping capability.
- Low zener impedance.
- Fast response time: typically less than 1.0ps from 0 volts to VBR for unidirectional and 5.0ns for bidirectional.
- Typical I_R less than 1 μ A above 10V.
- High temperature soldering guaranteed: 260°C/10 seconds/0.375 Inch (9.5mm) lead length/5lbs. (2.3kg) tension.

DO-15



Dimensions : Inches (Millimetres)

Mechanical Data

Case : Molded plastic
Lead : Pure tin plated lead free, solderable per MIL-STD-202, Method 208.
Polarity : Color band denotes cathode except bipolar.
Weight : 0.42 gram.

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Type Number	Symbol	Value	Units
Peak Power Dissipation at $T_A = 25^\circ\text{C}$, $T_p = 1\text{ms}$ (Note 1)	P_{PK}	Minimum 600	Watts
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$ Lead Lengths 0.375 Inch 9.5mm (Note 2)	P_D	5.0	
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 3)	I_{FSM}	100	Amps
Maximum Instantaneous Forward Voltage at 50.0A for Unidirectional Only (Note 4)	V_F	3.5/5.0	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 175	$^\circ\text{C}$

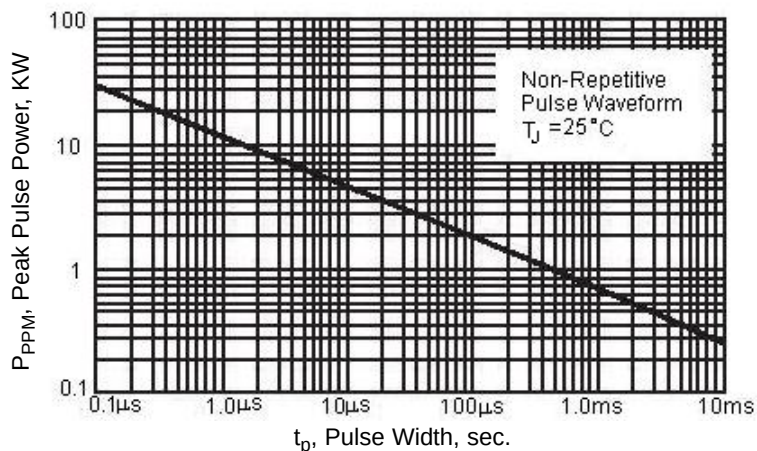
Notes: 1. Non-repetitive current pulse and derated above $T_A = 25^\circ\text{C}$.
 2. Mounted on copper pad area of 1.6 x 1.6 inch (40 x 40mm) per.
 3. 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum.
 4. $V_F = 3.5\text{V}$ for devices of $V_{BR} \leq 200\text{V}$ and $V_F = 5.0\text{V}$ maximum for devices of $V_{BR} > 200\text{V}$.

Devices for bipolar applications

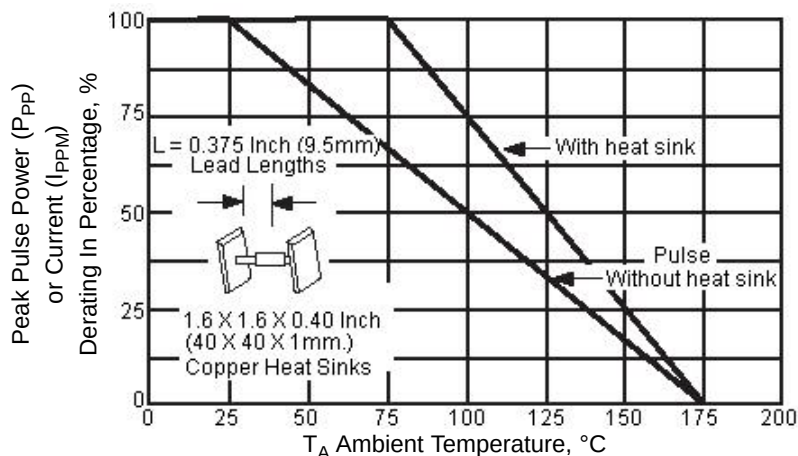
- For bidirectional use C or CA suffix for types P6KE6.8 through types P6KE400.
- Electrical characteristics apply in both directions.

Ratings and Characteristic Curves

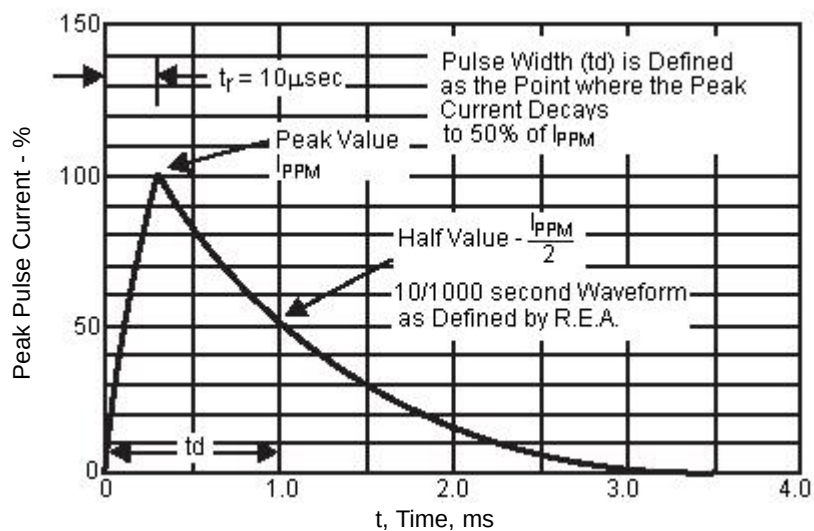
Peak Pulse Power Rating Curve



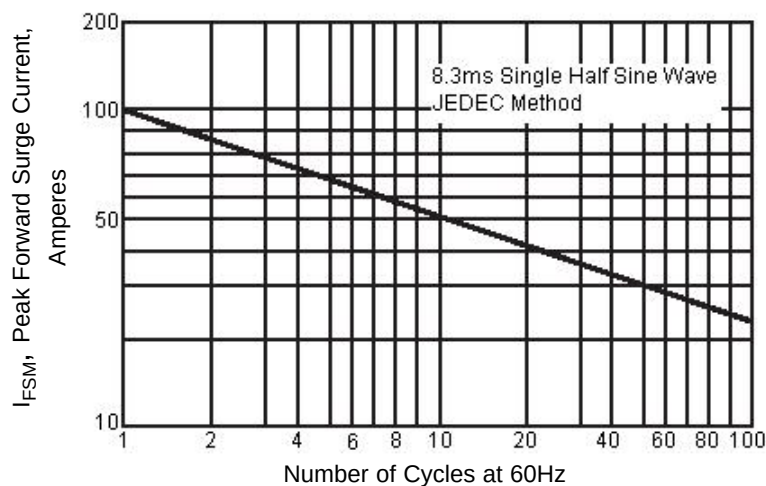
Pulse Derating Curve



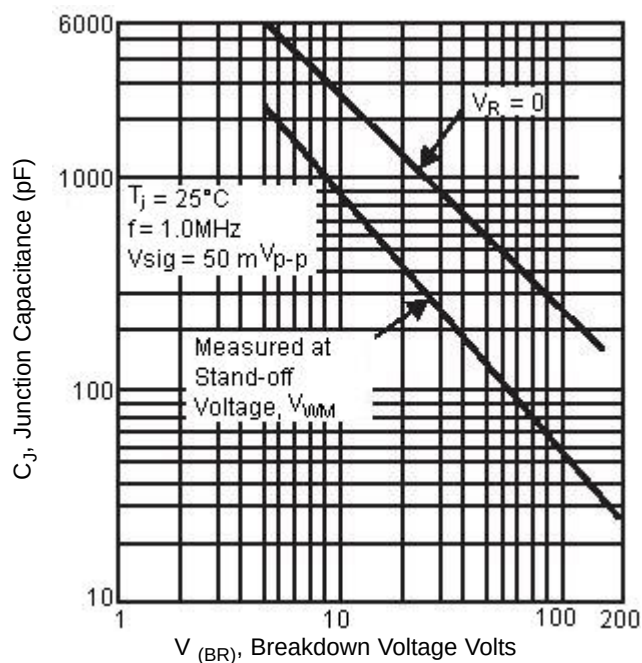
Clamping Power Pulse Waveform



Maximum Non-Repetitive Forward Surge Current Unidirectional Only



Typical Junction Capacitance (Unidirectional)



Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Device		Nominal Voltage (Volts)	Breakdown Voltage		Test Current at I _T (mA)	Stand-Off Voltage V _{WM} (Volts)	Maximum Reverse Leakage at V _{WM} I _D (μA)	Maximum Peak Pulse Current I _{RSM} (Note 2) (Amps)	Maximum Clamping Voltage at I _{PPM} V _C (Volts)	Maximum Temperature Coefficient of V _{BR} (%/°C)
			V _{BR} (Volts) (Note 1)							
			Minimum	Maximum						
Unidirectional	Bidirectional									
P6KE100A	P6KE100CA	100.0	95.0	105.0	1.0	85.5	5.0	4.5	137.0	0.106
P6KE10A	P6KE10CA	10.0	9.50	10.5		8.55	10.0	43.0	14.5	0.073
P6KE110A	P6KE110CA	110.0	105.0	116.0		94.0	5.0	4.1	152.0	0.107
P6KE120A	P6KE120CA	120.0	114.0	126.0		102.0		3.8	165.0	
P6KE12A	P6KE12CA	12.0	11.4	12.6		10.2		37.0	16.7	0.078
P6KE13A	P6KE13CA	13.0	12.4	13.7		11.1		34.0	18.2	0.081
P6KE150A	P6KE150CA	150.0	143.0	158.0		128.0		3.0	207.0	0.108
P6KE15A	P6KE15CA	15.0	14.3	15.8		12.8		29.0	21.2	0.084
P6KE160A	P6KE160CA	160.0	152.0	168.0		136.0		2.8	219.0	0.108
P6KE16A	P6KE16CA	16.0	15.2	16.8		13.6		28.0	22.5	0.086
P6KE180A	P6KE180CA	180.0	171.0	189.0		154.0		2.5	246.0	0.108
P6KE18A	P6KE18CA	18.0	17.1	18.9		15.3		25.0	25.2	0.088
P6KE200A	P6KE200CA	200.0	190.0	210.0		171.0		2.2	274.0	0.108
P6KE20A	P6KE20CA	20.0	19.0	21.0		17.1		22.0	27.7	0.090
P6KE22A	P6KE22CA	22.0	20.9	23.1		18.8		20.0	30.6	0.092
P6KE24A	P6KE24CA	24.0	22.8	25.2		20.5		19.0	33.2	0.094
P6KE27A	P6KE27CA	27.0	25.7	28.4		23.1		16.8	37.5	0.096
P6KE300A	P6KE300CA	300.0	285.0	315.0		256.0		1.5	414.0	0.110
P6KE30A	P6KE30CA	30.0	28.5	31.5		25.6		15.0	41.4	0.097
P6KE33A	P6KE33CA	33.0	31.4	34.7		28.2		13.8	45.7	0.098
P6KE36A	P6KE36CA	36.0	34.2	37.8		30.8		12.6	49.9	0.099
P6KE39A	P6KE39CA	39.0	37.1	41.0		33.3		11.6	53.9	0.100
P6KE400A	P6KE400CA	400.0	380.0	420.0		342.0		1.1	548.0	0.110
P6KE440A	P6KE440CA	440.0	418.0	462.0		376.0		1.04	600.0	
P6KE47A	P6KE47CA	47.0	44.7	49.4		40.2		9.7	64.8	0.101
P6KE62A	P6KE62CA	62.0	58.9	65.1		53.0		7.4	85.0	0.104
P6KE68A	P6KE68CA	68.0	64.6	71.4		58.1		6.8	92.0	
P6KE7.5A	P6KE7.5CA	7.5	7.13	7.88	10.0	6.40	500.0	55.0	11.3	0.061

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Device		Nominal Voltage (Volts)	Breakdown Voltage		Test Current at I _T (mA)	Stand-Off Voltage V _{WM} (Volts)	Maximum Reverse Leakage at V _{WM} I _D (μA)	Maximum Peak Pulse Current I _{RSM} (Note 2) (Amps)	Maximum Clamping Voltage at I _{PPM} V _C (Volts)	Maximum Temperature Coefficient of V _{BR} (%/°C)
			V _{BR} (Volts) (Note 1)							
Unidirectional	Bidirectional		Minimum	Maximum						
P6KE8.2A	P6KE8.2CA	8.2	7.79	8.61	1.0	7.02	200.0	52.0	12.1	0.064
P6KE9.1A	P6KE9.1CA	9.1	8.65	9.55		7.78	50.0	47.0	13.4	0.068
P6KE91A	P6KE91CA	91.0	86.5	95.5		77.8	5.0	5.0	125.0	0.106

Notes:

1. V_{BR} measured after I_T applied for 300 μs , I_T = square wave pulse or equivalent.
2. Surge current waveform per Figure 3 and derate.
3. For bipolar types having V_{WM} of 10 volts and under, the I_D limit is doubled.
4. All terms and symbols are consistent with ANSI/IEEE C62.35.

Notes:

International Sales Offices:

	AUSTRALIA - Farnell Tel No: ++61 1300 361 005 Fax No: ++61 1300 361 225		FINLAND - Farnell Tel No: ++ 358 9 560 7780 Fax No: ++ 358 9 345 5411		ITALY - Farnell Tel No: ++ 39 02 93 995 200 Fax No: ++ 39 02 93 995 300		SPAIN - Farnell Tel No: 901 20 20 80 Fax No: 901 20 20 90
	AUSTRIA - Farnell Tel No: ++ 43 662 2180 680 Fax No: ++ 43 662 2180 670		FRANCE - Farnell Tel No: ++ 33 474 68 99 99 Fax No: ++ 33 474 68 99 90		MALAYSIA - Farnell-Newark Tel No: ++ 60 3 7873 8000 Fax No: ++ 60 3 7873 7000		SWEDEN - Farnell Tel No: ++ 46 8 730 50 00 Fax No: ++ 46 8 83 52 62
	BELGIUM - Farnell Tel No: ++ 32 3 475 2810 Fax No: ++ 32 3 227 3648		GERMANY - Farnell Tel No: ++ 49 89 61 39 39 39 Fax No: ++ 49 89 613 59 01		NETHERLANDS - Farnell Tel No: ++ 31 30 241 7373 Fax No: ++ 31 30 241 7333		SWITZERLAND - Farnell Tel No: ++ 44 204 64 64 Fax No: ++ 44 204 64 54
	BRAZIL - Farnell-Newark Tel No: ++ 55 11 4066 9400 Fax No: ++ 55 11 4066 9410		HONG KONG - Farnell-Newark Tel No: ++ 852 2268 9888 Fax No: ++ 852 2268 9899		NEW ZEALAND - Farnell Tel No: 0800 90 80 80 Fax No: 0800 90 80 81		UK - Farnell Tel No: ++ 44 8701 200 200 Fax No: ++ 44 8701 200 201
	CHINA - Farnell-Newark Tel No: ++86 10 6238 5152 Fax No: ++86 10 6238 5022		HUNGARY - Farnell Tel No: ++ 44 870 1200 208 Fax No: ++ 44 870 1200 209		NORWAY - Farnell Tel No: 800 146 70 Fax No: 800 146 76		UK - CPC ++ 44 8701 202 530 ++ 44 8701 202 531
	CZECH REPUBLIC - Farnell Tel No: ++ 44 870 1200 208 Fax No: ++ 44 870 1200 209		INDIA - Farnell Tel No: ++ 44 870 1200 208 Fax No: ++ 44 870 1200 209		PORTUGAL - Farnell Tel No: ++ 34 93 475 8804 Fax No: ++ 34 93 474 5288		USA - Newark Tel No: 800 463 9275
	DENMARK - Farnell Tel No: ++ 45 44 53 66 44 Fax No: ++ 45 44 53 66 06		IRELAND - Farnell Tel No: ++ 353 1 830 9277 Fax No: ++ 353 1 830 9016		RUSSIA - Farnell Tel No: ++ 44 870 1200 208 Fax No: ++ 44 870 1200 209	 EXPORT - Farnell Tel No: ++ 44 8701 200 208 Fax No: ++ 44 8701 200 209 For enquiries from all other markets	
	ESTONIA - Farnell Tel No: ++ 358 9 560 7780 Fax No: ++ 358 9 345 5411		ISRAEL - Farnell Tel No: ++ 180 937 0015 Fax No: ++ 180 937 0014		SINGAPORE - Farnell-Newark Tel No: ++ 65 6788 0200 Fax No: ++ 65 6788 0300		

<http://www.farnell.com>
<http://www.newark.com>
<http://www.cpc.co.uk>

Disclaimer This data sheet and its contents (the "Information") belong to the Premier Farnell Group (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. SPC Multicomp is the registered trademark of the Group. © Premier Farnell plc 2008.