

P6KE6.8-600A

VBR : 6.8 - 600 Volts

PPK : 600 Watts

Features

- Glass passivated junction chip
- 600W surge capability at 1ms
- Excellent clamping capability
- Low zener impedance
- Fast response time : typically less than 1.0 ps from 0 volt to VBR(min.)
- Typical IR less than 1μA above 10V
- RoHS compliant package

Applications

- For Bi-directional use C or CA Suffix
- Electrical characteristics apply in both directions

Mechanical Data

- Case : DO-15 Molded plastic
- Epoxy : UL94V-0 rate flame retardant
- Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
- Polarity : Color band denotes cathode end
- Mounting position : Any
- Weight : 0.4 gram

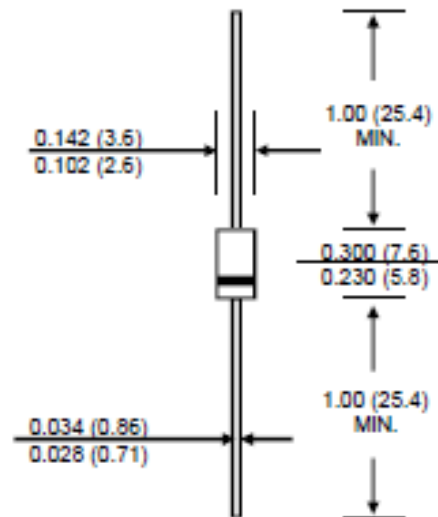
Packing & Order Information

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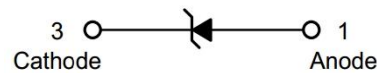


RoHS
COMPLIANT

DO-15



Graphic symbol



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified.

Symbol	Parameter	Value	Unit
PPK	Peak Power Dissipation at Ta = 25°C, Tp=1ms (Note 1)	Minimum 600	W
PD	Steady State Power Dissipation at TL = 75 °C	5.0	W
IFSM	Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3) IFSM 100 Amps.	100	A
TJ, TSTG	Operating and Storage Temperature Range	-65 to + 175	°C

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Notes :

(1) Non-repetitive Current pulse, per Fig. 5 and derated above Ta = 25 °C per Fig. 1

(2) Mounted on copper Lead area at 1.57 in² (40 mm²).

(3) 8.3 ms single half sine-wave, duty cycle = 4 pulses per Minutes maximum.

ELECTRICAL CHARACTERISTICS (Rating at 25°C ambient temperature unless otherwise specified)

Type No.	Breakdown Voltage @ It (Note 1)		Working Peak Reverse Voltage VRWM	Maximum Reverse Leakage @ VRWM IR (μ A)	Maximum Reverse Current IRSM (A)	Maximum Clamping Voltage @ IRSM VRSM (V)	Maximum Temperature Co-efficient of VBR (% / °C)	
	VBR (V)							It
	Min	Max	(mA)	(V)				
P6KE6.8	6.12	7.48	10	5.50	1000	38.0	10.8	0.057
P6KE6.8A	6.45	7.14	10	5.80	1000	40.0	10.5	0.057
P6KE7.5	6.75	8.25	10	6.05	500	36.0	11.7	0.061
P6KE7.5A	7.13	7.88	10	6.40	500	37.0	11.3	0.061
P6KE8.2	7.38	9.02	10	6.63	200	33.0	12.5	0.065
P6KE8.2A	7.79	8.61	10	7.02	200	35.0	12.1	0.065
P6KE9.1	8.19	10.0	1.0	7.37	50	30.0	13.8	0.068
P6KE9.1A	8.65	9.55	1.0	7.78	50	31.0	13.4	0.068
P6KE10	9.00	11.0	1.0	8.10	10	28.0	15.0	0.073
P6KE10A	9.50	10.5	1.0	8.55	10	29.0	14.5	0.073
P6KE11	9.90	12.1	1.0	8.92	5.0	26.0	16.2	0.075
P6KE11A	10.5	11.6	1.0	9.40	5.0	27.0	15.6	0.075
P6KE12	10.8	13.2	1.0	9.72	5.0	24.0	17.3	0.078
P6KE12A	11.4	12.6	1.0	10.2	5.0	25.0	16.7	0.078
P6KE13	11.7	14.3	1.0	10.5	5.0	22.0	19.0	0.081
P6KE13A	12.4	13.7	1.0	11.1	5.0	23.0	18.2	0.081
P6KE15	13.5	16.5	1.0	12.1	5.0	19.0	22.0	0.084
P6KE15A	14.3	15.8	1.0	12.8	5.0	20.0	21.2	0.084
P6KE16	14.4	17.6	1.0	12.9	5.0	18.0	23.5	0.086
P6KE16A	15.2	16.8	1.0	13.6	5.0	19.0	22.5	0.086
P6KE17	15.3	18.7	1.0	13.7	5.0	17.0	25.0	0.087
P6KE17A	16.2	17.9	1.0	14.5	5.0	18.0	24.0	0.087
P6KE18	16.2	19.8	1.0	14.5	5.0	16.0	26.5	0.088
P6KE18A	17.1	18.9	1.0	15.3	5.0	17.0	25.5	0.088
P6KE20	18.0	22.0	1.0	16.2	5.0	14.0	29.1	0.090
P6KE20A	19.0	21.0	1.0	17.1	5.0	15.0	27.7	0.090

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Type No.	Breakdown Voltage @ It (Note 1)		Working Peak Reverse Voltage VRWM (V)	Maximum Reverse Leakage @ VRWM (μ A)	Maximum Reverse Current IRSM (A)	Maximum Clamping Voltage @ IRSM VRSM (V)	Maximum Temperature Co-efficient of VBR (% / °C)	
	VBR (V)							It (mA)
	Min	Max						
P6KE22	19.8	24.2	1.0	17.8	5.0	13.0	31.9	0.092
P6KE22A	20.9	23.1	1.0	18.8	5.0	14.0	30.6	0.092
P6KE24	21.6	26.4	1.0	19.4	5.0	12.0	34.7	0.094
P6KE24A	22.8	25.2	1.0	20.5	5.0	13.0	33.2	0.094
P6KE27	24.3	29.7	1.0	21.8	5.0	11.0	39.1	0.096
P6KE27A	25.7	28.4	1.0	23.1	5.0	11.2	37.5	0.096
P6KE30	27.0	33.0	1.0	24.3	5.0	10.0	43.5	0.097
P6KE30A	28.5	31.5	1.0	25.6	5.0	10.0	41.4	0.097
P6KE33	29.7	36.6	1.0	26.8	5.0	9.0	47.7	0.098
P6KE33A	31.4	34.7	1.0	28.2	5.0	9.0	45.7	0.098
P6KE36	32.4	39.6	1.0	29.1	5.0	8.0	52.0	0.099
P6KE36A	34.2	37.8	1.0	30.8	5.0	8.4	49.9	0.099
P6KE39	35.1	42.9	1.0	31.6	5.0	7.4	56.4	0.100
P6KE39A	37.1	41.0	1.0	33.3	5.0	7.8	53.9	0.100
P6KE43	38.7	47.3	1.0	34.8	5.0	6.8	61.9	0.101
P6KE43A	40.9	45.2	1.0	36.8	5.0	7.1	59.3	0.101
P6KE47	42.3	51.7	1.0	38.1	5.0	6.2	67.8	0.101
P6KE47A	44.7	49.4	1.0	40.2	5.0	6.5	64.8	0.101
P6KE51	45.9	56.1	1.0	41.3	5.0	5.7	73.5	0.102
P6KE51A	48.5	53.6	1.0	43.6	5.0	6.0	70.1	0.102
P6KE56	50.4	61.6	1.0	45.4	5.0	5.2	80.5	0.103
P6KE56A	53.2	58.8	1.0	47.8	5.0	5.5	77.0	0.103
P6KE62	55.8	68.2	1.0	50.2	5.0	4.7	89.0	0.104
P6KE62A	58.9	65.1	1.0	53.0	5.0	5.0	85.0	0.104
P6KE68	61.2	74.8	1.0	55.1	5.0	4.3	98.0	0.104
P6KE68A	64.6	71.4	1.0	58.1	5.0	4.6	92.0	0.104
P6KE75	67.5	82.5	1.0	60.7	5.0	3.9	108	0.105
P6KE75A	71.3	78.8	1.0	64.1	5.0	4.1	103	0.105
P6KE82	73.8	90.2	1.0	66.4	5.0	3.6	118	0.105

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Type No.	Breakdown Voltage @ It (Note 1)		Working Peak Reverse Voltage VRWM (V)	Maximum Reverse Leakage @ VRWM (µA)	Maximum Reverse Current (A)	Maximum Clamping Voltage @ IRSM (V)	Maximum Temperature Co-efficient of VBR (% / °C)	
	VBR (V)							It (mA)
	Min	Max						
P6KE82A	77.9	86.1	1.0	70.1	5.0	3.7	113	0.105
P6KE91	81.9	100	1.0	73.7	5.0	3.2	131	0.106
P6KE91A	86.5	95.5	1.0	77.8	5.0	3.4	125	0.106
P6KE100	90.0	110	1.0	81.0	5.0	2.9	144	0.106
P6KE100A	95.0	105	1.0	85.5	5.0	3.1	137	0.106
P6KE110	99.0	121	1.0	89.2	5.0	2.7	158	0.107
P6KE110A	105	116	1.0	91.0	5.0	2.8	152	0.107
P6KE120	108	132	1.0	97.2	5.0	2.4	173	0.107
P6KE120A	114	126	1.0	102	5.0	2.5	165	0.107
P6KE130	117	143	1.0	105	5.0	2.2	187	0.107
P6KE130A	124	137	1.0	111	5.0	2.3	179	0.107
P6KE150	135	165	1.0	121	5.0	2.0	215	0.108
P6KE150A	143	158	1.0	128	5.0	2.0	207	0.108
P6KE160	144	176	1.0	130	5.0	1.8	230	0.108
P6KE160A	152	168	1.0	136	5.0	1.9	219	0.108
P6KE170	153	187	1.0	138	5.0	1.7	244	0.108
P6KE170A	162	179	1.0	145	5.0	1.8	234	0.108
P6KE180	162	198	1.0	146	5.0	1.6	258	0.108
P6KE180A	171	189	1.0	154	5.0	1.7	246	0.108
P6KE200	180	220	1.0	162	5.0	1.5	287	0.108
P6KE200A	190	210	1.0	171	5.0	1.53	274	0.108
P6KE220	198	242	1.0	175	5.0	1.16	344	0.108
P6KE220A	209	231	1.0	185	5.0	1.22	328	0.108
P6KE250	225	275	1.0	202	5.0	1.11	360	0.110
P6KE250A	237	263	1.0	214	5.0	1.16	344	0.110
P6KE300	270	330	1.0	243	5.0	0.93	430	0.110
P6KE300A	285	315	1.0	256	5.0	0.97	414	0.110
P6KE350	315	385	1.0	284	5.0	0.79	504	0.110
P6KE350A	332	368	1.0	300	5.0	0.83	482	0.110

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Type No.	Breakdown Voltage @ It (Note 1)		Working Peak Reverse Voltage	Maximum Reverse Leakage @ VRWM	Maximum Reverse Current	Maximum Clamping Voltage @ IRSM	Maximum Temperature Co-efficient of VBR	
	VBR (V)							VRWM
	Min	Max	(mA)	(V)	(μ A)	(A)	(V)	(% / °C)
P6KE400	360	440	1.0	324	5.0	0.70	574	0.110
P6KE400A	380	420	1.0	342	5.0	0.73	548	0.110
P6KE440	396	484	1.0	356	5.0	0.95	631	0.110
P6KE440A	418	462	1.0	376	5.0	1.00	602	0.110
P6KE480	432	528	1.0	389	5.0	0.88	686	0.110
P6KE480A	456	504	1.0	408	5.0	0.90	658	0.110
P6KE510	459	561	1.0	413	5.0	0.82	729	0.110
P6KE510A	485	535	1.0	434	5.0	0.86	698	0.110
P6KE530	477	583	1.0	457	5.0	0.76	798	0.110
P6KE530A	503	556.5	1.0	477	5.0	0.80	725	0.110
P6KE540	486	594	1.0	437	5.0	0.78	772	0.110
P6KE540A	513	567	1.0	459	5.0	0.81	740	0.110
P6KE550	495	605	1.0	470	5.0	0.76	836	0.110
P6KE550A	522.5	577.5	1.0	495	5.0	0.80	760	0.110
P6KE600	540	660	1.0	490	5.0	0.71	911	0.110
P6KE600A	570	630	1.0	512	5.0	0.75	828	0.110

Note:

(1) VBR measured after It applied for 300 μ s., It = square wave pulse or equivalent.

(2) VF = 3.5 Vmax., IF = 50 Amps. (6.8 Volts thru 91 Volts); VF = 5.0 Vmax., IF = 50 Amps. (100 Volts thru 440 Volts)

add VF = 6.5 Vmax. IF = 50 Amps (480 Volts thru 600 Volts). PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.

(3) For Bipolar types moving VR of 10 Volts and under, the IR limit is doubled.

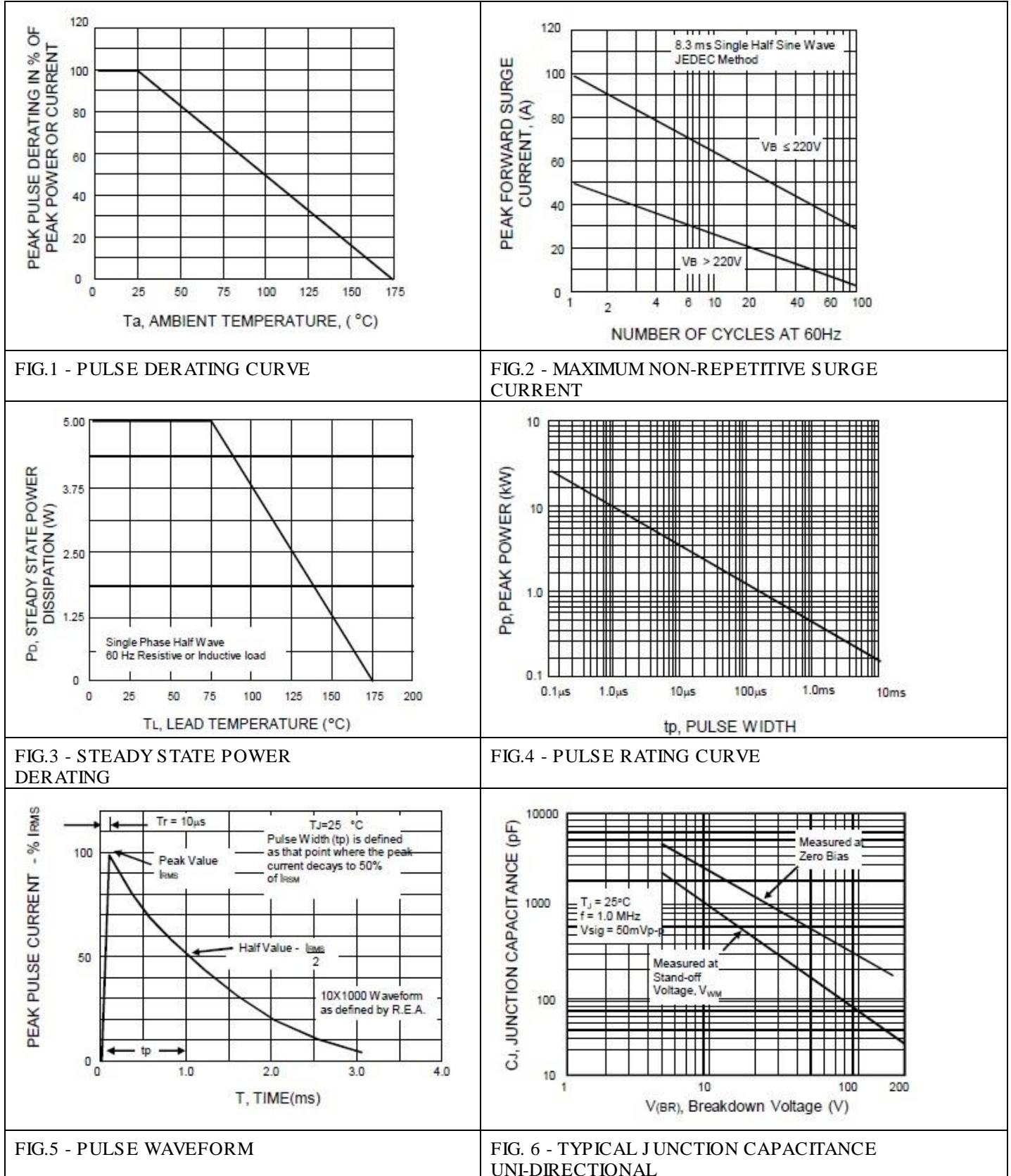
(4) "6KE" will be omitted in marking on the diode.

P6KE6.8-600A

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■ RATING AND CHARACTERISTIC CURVES (P6KE SERIES)



P6KE6.8-600A

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PPK : 600 Watts

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE

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