

P6KE SERIES

Features

- P_{PP} 600W
- V_{BR} 6.8V-550V
- Glass passivated chip

Applications

- Clamping Voltage

DO-15



Bi-directional

Uni-direction

Marking:

P6KEXX(A/CA)

XX : 6.8 To 550

Limiting values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak power dissipation	PPPM	W	with a 10/1000us waveform	600
Peak pulse current	IPPM	A	with a 10/1000us waveform	See Next Table
Power dissipation	PD	W	on infinite heat sink at $T_L=75^{\circ}\text{C}$	5
Peak forward surge current	IFSM	A	8.3 ms single half sine-wave unidirectional only	100
Operation Junction and Storage Temperature Range	T_J, T_{STG}	$^{\circ}\text{C}$		-55 ~ +150

Electrical Characteristics ($T=25^{\circ}\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage (1)	VF	V	at 25A for unidirectional only	3.5/5.0
Thermal resistance	$R_{\theta JL}$	$^{\circ}\text{C/W}$	junction to lead	20
	$R_{\theta JA}$	$^{\circ}\text{C/W}$	junction to ambient, $L_{Lead} = 10 \text{ mm}$	75

Notes:

(1) $V_F = 3.5 \text{ V}$ for P6KE220(A) and below; $V_F = 5.0 \text{ V}$ for P6KE250(A) and above

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

Number	Number	Breakdown Voltage $V_{BR}@I_T$			Reverse Leakage I_R @ V_{WM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Reverse Surge Current IPP (A)	Clamping Voltage V_c @ I_{PP} (V)	Temperature Coefficient of V_{BR} ($\%/^{\circ}\text{C}$)
		Min(V)	Max (V)	IT(mA)					
P6KE6.8A	P6KE6.8CA	6.45	7.14	10	1000	5.80	57.1	10.5	0.057
P6KE7.5A	P6KE7.5CA	7.13	7.88	10	500	6.40	53.1	11.3	0.061
P6KE8.2A	P6KE8.2CA	7.79	8.61	10	200	7.02	49.6	12.1	0.065
P6KE9.1A	P6KE9.1CA	8.65	9.55	1.0	50	7.78	44.8	13.4	0.068
P6KE10A	P6KE10CA	9.50	10.5	1.0	10	8.55	41.4	14.5	0.073
P6KE11A	P6KE11CA	10.5	11.6	1.0	5.0	9.40	38.5	15.6	0.075
P6KE12A	P6KE12CA	11.4	12.6	1.0	5.0	10.2	35.9	16.7	0.078
P6KE13A	P6KE13CA	12.4	13.7	1.0	5.0	11.1	33.0	18.2	0.081
P6KE15A	P6KE15CA	14.3	15.8	1.0	1.0	12.8	28.3	21.2	0.084
P6KE16A	P6KE16CA	15.2	16.8	1.0	1.0	13.6	26.7	22.5	0.086
P6KE18A	P6KE18CA	17.1	18.9	1.0	1.0	15.3	23.8	25.2	0.088
P6KE20A	P6KE20CA	19.0	21.0	1.0	1.0	17.1	21.7	27.7	0.090
P6KE22A	P6KE22CA	20.9	23.1	1.0	1.0	18.8	19.6	30.6	0.092
P6KE24A	P6KE24CA	22.8	25.2	1.0	1.0	20.5	18.1	33.2	0.094
P6KE27A	P6KE27CA	25.7	28.4	1.0	1.0	23.1	16.0	37.5	0.096
P6KE30A	P6KE30CA	28.5	31.5	1.0	1.0	25.6	14.5	41.4	0.097
P6KE33A	P6KE33CA	31.4	34.7	1.0	1.0	28.2	13.1	45.7	0.098
P6KE36A	P6KE36CA	34.2	37.8	1.0	1.0	30.8	12.0	49.9	0.099
P6KE39A	P6KE39CA	37.1	41.0	1.0	1.0	33.3	11.1	53.9	0.100
P6KE43A	P6KE43CA	40.9	45.2	1.0	1.0	36.8	10.1	59.3	0.101
P6KE47A	P6KE47CA	44.7	49.4	1.0	1.0	40.2	9.3	64.8	0.101
P6KE51A	P6KE51CA	48.5	53.6	1.0	1.0	43.6	8.6	70.1	0.102
P6KE56A	P6KE56CA	53.2	58.8	1.0	1.0	47.8	7.8	77.0	0.103
P6KE62A	P6KE62CA	58.9	65.1	1.0	1.0	53.0	7.1	85.0	0.104
P6KE68A	P6KE68CA	64.6	71.4	1.0	1.0	58.1	6.5	92.0	0.104
P6KE75A	P6KE75CA	71.3	78.8	1.0	1.0	64.1	5.8	103	0.105
P6KE82A	P6KE82CA	77.9	86.1	1.0	1.0	70.1	5.3	113	0.105
P6KE91A	P6KE91CA	86.5	95.5	1.0	1.0	77.8	4.8	125	0.106
P6KE100A	P6KE100CA	95.0	105	1.0	1.0	85.5	4.4	137	0.106
P6KE110A	P6KE110CA	105	116	1.0	1.0	94.0	3.9	152	0.107
P6KE120A	P6KE120CA	114	126	1.0	1.0	102	3.6	165	0.107
P6KE130A	P6KE130CA	124	137	1.0	1.0	111	3.4	179	0.107
P6KE150A	P6KE150CA	143	158	1.0	1.0	128	2.9	207	0.108
P6KE160A	P6KE160CA	152	168	1.0	1.0	136	2.7	219	0.108
P6KE170A	P6KE170CA	162	179	1.0	1.0	145	2.6	234	0.108
P6KE180A	P6KE180CA	171	189	1.0	1.0	154	2.4	246	0.108

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

Number	Number	Breakdown Voltage $V_{BR}@I_T$			Reverse Leakage I_R @ V_{WM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Reverse Surge Current IPP (A)	Clamping Voltage V_C @ I_{CP} (V)	Temperature Coefficient of V_{BR} ($\%/^{\circ}\text{C}$)
		Min(V)	Max (V)	$I_T(\text{mA})$					
P6KE200A	P6KE200CA	190	210	1.0	1.0	171	2.2	274	0.108
P6KE220A	P6KE220CA	209	231	1.0	1.0	185	1.8	328	0.108
P6KE250A	P6KE250CA	237	263	1.0	1.0	214	1.7	344	0.110
P6KE300A	P6KE300CA	285	315	1.0	1.0	256	1.4	414	0.110
P6KE350A	P6KE350CA	333	368	1.0	1.0	300	1.2	482	0.110
P6KE400A	P6KE400CA	380	420	1.0	1.0	342	1.1	548	0.110
P6KE440A	P6KE440CA	418	462	1.0	1.0	376	1.00	602	0.110
P6KE480A	P6KE480CA	456	504	1.0	1.0	408	0.91	658	0.110
P6KE510A	P6KE510CA	485	535	1.0	1.0	434	0.86	698	0.110
P6KE540A	P6KE540CA	513	567	1.0	1.0	459	0.81	740	0.110
P6KE550A	P6KE550CA	522.5	577.5	1.0	1.0	467	0.79	760	0.110
P6KE600A	P6KE600CA	570	630	1.0	1.0	510	1.00	822	0.110

Typical Characteristics

FIG1: Peak Pulse Power Rating Curve

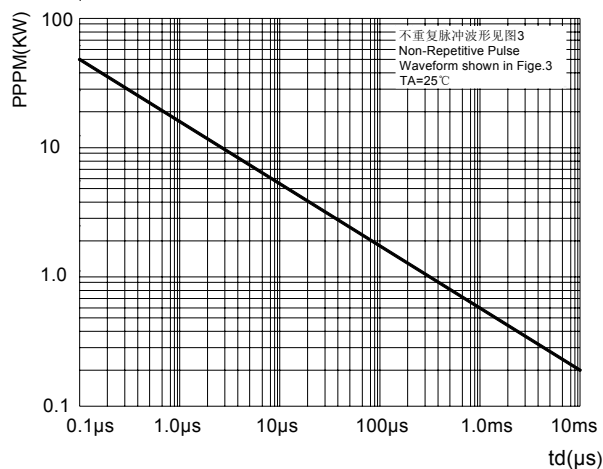


FIG2: Pulse Power or Current vs. Initial Junction Temperature

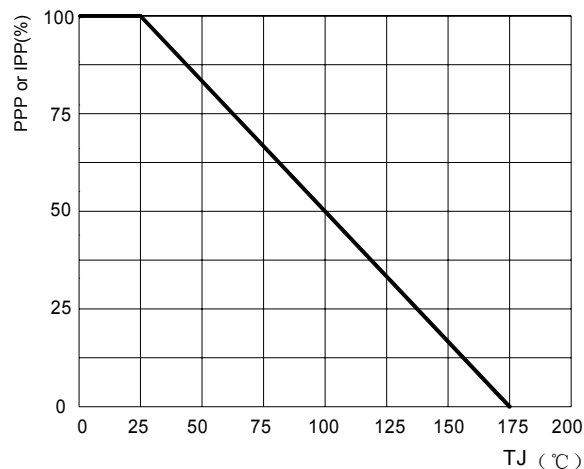


FIG3: Pulse Waveform

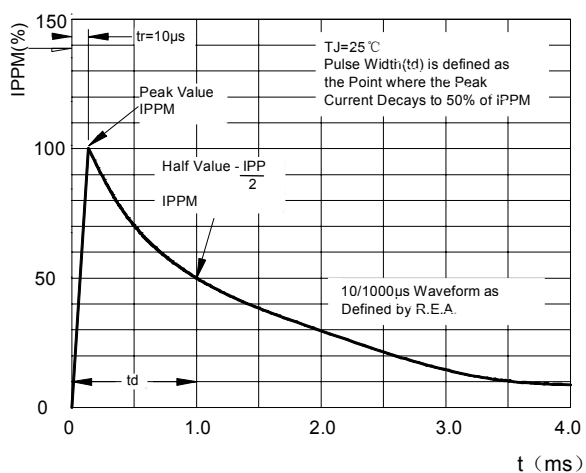


FIG4: Power Derating Curve

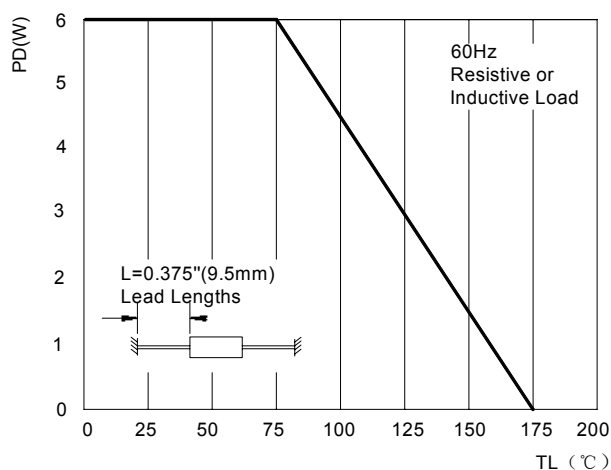


FIG5: Maximum Non-Repetitive Surge Current

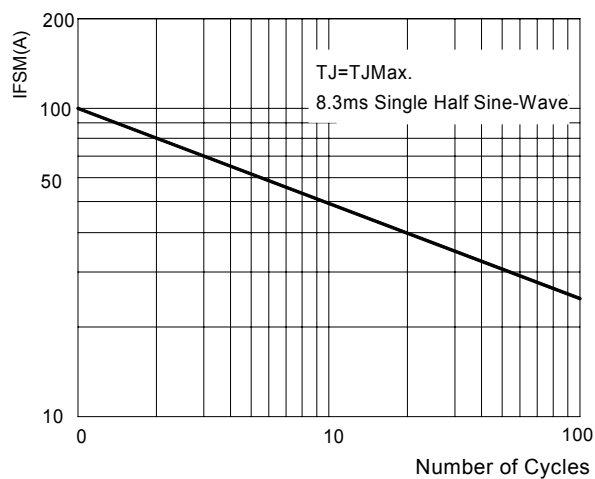
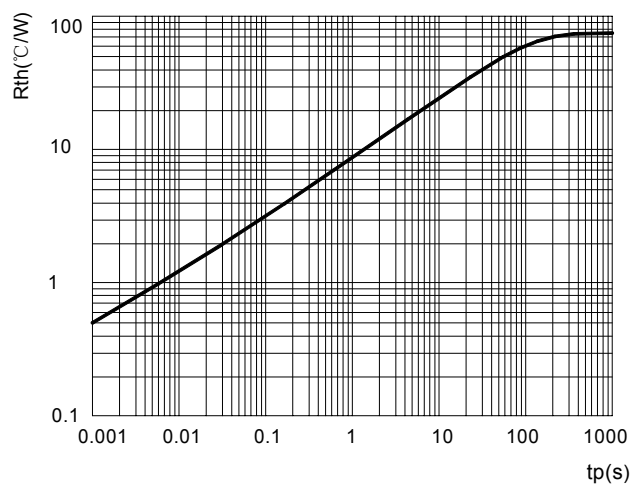
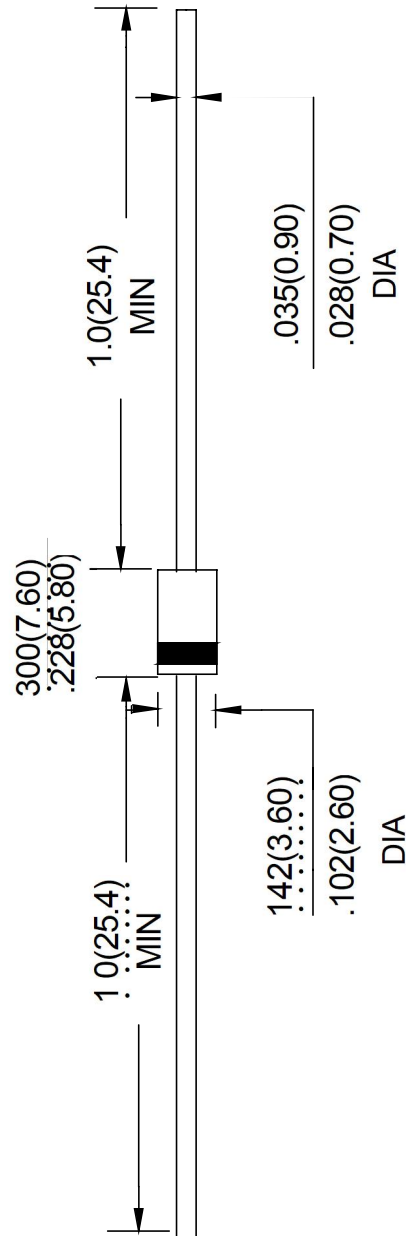


FIG6: Typical Transient Thermal Impedance



DO-15 package outline Dimensions



Unit: in inches (millimeters)