

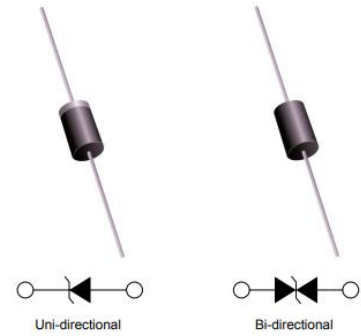
TVS Diode: P6KE Series

Axial Leaded Type 600 W



■ Features

1. Glass passivated chip
2. Excellent clamping capability
3. Low clamping voltage
4. Low leakage current
5. Very fast response time
6. RoHS compliant
7. 600W peak pulse power capability at 10/1000µs waveform, repetition rate (duty cycle): 0.01%



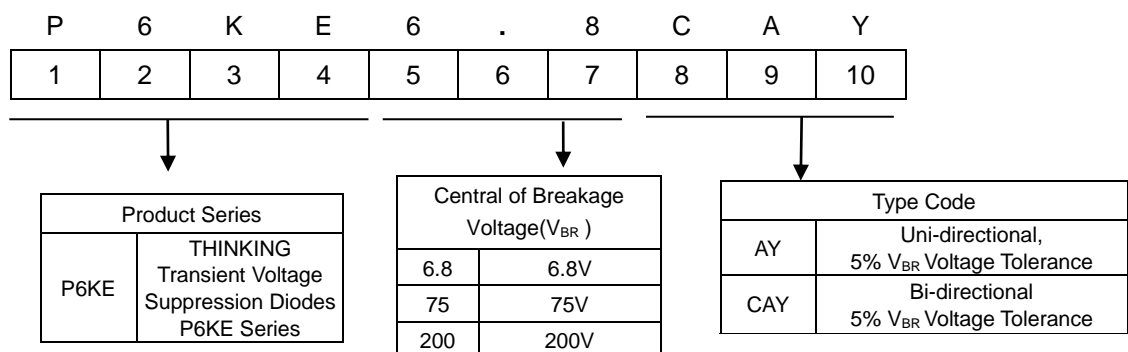
■ Recommended Applications

1. Computers
2. Telecom system
3. Industrial equipment
4. Consumer electronic applications
5. Other VCC bus and I/O interfaces

■ Mechanical Data

1. Case: Molded plastic, DO-15
2. Epoxy: UL 94V-0 rate flame retardant
3. Terminals: Solderable per MIL-STD-750, method 2026
4. Polarity: Color band denotes cathode end
5. Mounting Position: Any

■ Part Number Code

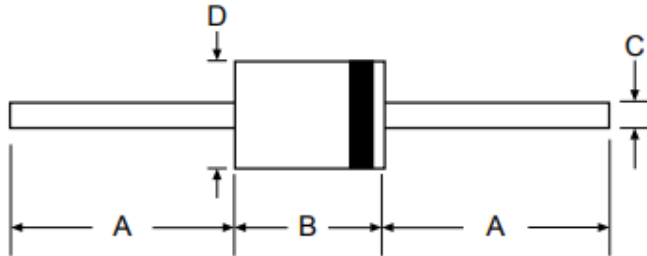


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Structures and Dimensions



Symbol	Dimensions in millimeters	
	Min	Max
A	25.0	-
B	5.8	7.6
C	0.7	0.9
D	2.6	3.6

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

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 μs waveform (Note 1)	P_{PPM}	600	W
Peak pulse current with 10/1000 μs waveform (Note 1)	I_{PPM}	See next table	A
Peak forward surge current, 8.3 ms single half sine-wave (Note 2)	I_{FSM}	100	A
Power dissipation on infinite heatsink at $T_L=75^\circ\text{C}$	P_D	5	W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	75	$^\circ\text{C/W}$
Typical thermal resistance junction to lead	$R_{\theta JL}$	20	$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Note:

1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2.
2. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

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■ Electrical Characteristics (T_A=25°C unless otherwise noted)

Part No. (Uni)	Part No. (Bi)	Reverse Stand off Voltage	Breakage Voltage V _{BR} @ I _T		Test Current	Maximum Clamping Voltage V _C @ I _{pp}	Maximum Peak Pulse Current	Maximum Reverse Leakage I _R @V _{RWM}
		V _{RWM} (V)	Min(V)	Max(V)	I _T (mA)	V _C (V)	I _{pp} (A)	I _R (μA)
P6KE6.8AY	P6KE6.8CAY	5.8	6.45	7.14	10	10.5	57.1	1000
P6KE7.5AY	P6KE7.5CAY	6.4	7.13	7.88	10	11.3	53.1	500
P6KE8.2AY	P6KE8.2CAY	7.02	7.79	8.61	10	12.1	49.6	200
P6KE9.1AY	P6KE9.1CAY	7.78	8.65	9.55	1	13.4	44.8	50
P6KE10AY	P6KE10CAY	8.55	9.5	10.5	1	14.5	41.4	10
P6KE11AY	P6KE11CAY	9.4	10.5	11.6	1	15.6	38.5	5
P6KE12AY	P6KE12CAY	10.2	11.4	12.6	1	16.7	35.9	5
P6KE13AY	P6KE13CAY	11.1	12.4	13.7	1	18.2	33	5
P6KE15AY	P6KE15CAY	12.8	14.3	15.8	1	21.2	28.3	1
P6KE16AY	P6KE16CAY	13.6	15.2	16.8	1	22.5	26.7	1
P6KE18AY	P6KE18CAY	15.3	17.1	18.9	1	25.2	23.8	1
P6KE20AY	P6KE20CAY	17.1	19	21	1	27.7	21.7	1
P6KE22AY	P6KE22CAY	18.8	20.9	23.1	1	30.6	19.6	1
P6KE24AY	P6KE24CAY	20.5	22.8	25.2	1	33.2	18.1	1
P6KE27AY	P6KE27CAY	23.1	25.7	28.4	1	37.5	16	1
P6KE30AY	P6KE30CAY	25.6	28.5	31.5	1	41.4	14.5	1
P6KE33AY	P6KE33CAY	28.2	31.4	34.7	1	45.7	13.1	1
P6KE36AY	P6KE36CAY	30.8	34.2	37.8	1	49.9	12	1
P6KE39AY	P6KE39CAY	33.3	37.1	41	1	53.9	11.1	1
P6KE43AY	P6KE43CAY	36.8	40.9	45.2	1	59.3	10.1	1
P6KE47AY	P6KE47CAY	40.2	44.7	49.4	1	64.8	9.3	1
P6KE51AY	P6KE51CAY	43.6	48.5	53.6	1	70.1	8.6	1
P6KE56AY	P6KE56CAY	47.8	53.2	58.8	1	77	7.8	1
P6KE62AY	P6KE62CAY	53	58.9	65.1	1	85	7.1	1
P6KE68AY	P6KE68CAY	58.1	64.6	71.4	1	92	6.5	1
P6KE75AY	P6KE75CAY	64.1	71.3	78.8	1	103	5.8	1
P6KE82AY	P6KE82CAY	70.1	77.9	86.1	1	113	5.3	1
P6KE91AY	P6KE91CAY	77.8	86.5	95.5	1	125	4.8	1
P6KE100AY	P6KE100CAY	85.5	95	105	1	137	4.4	1

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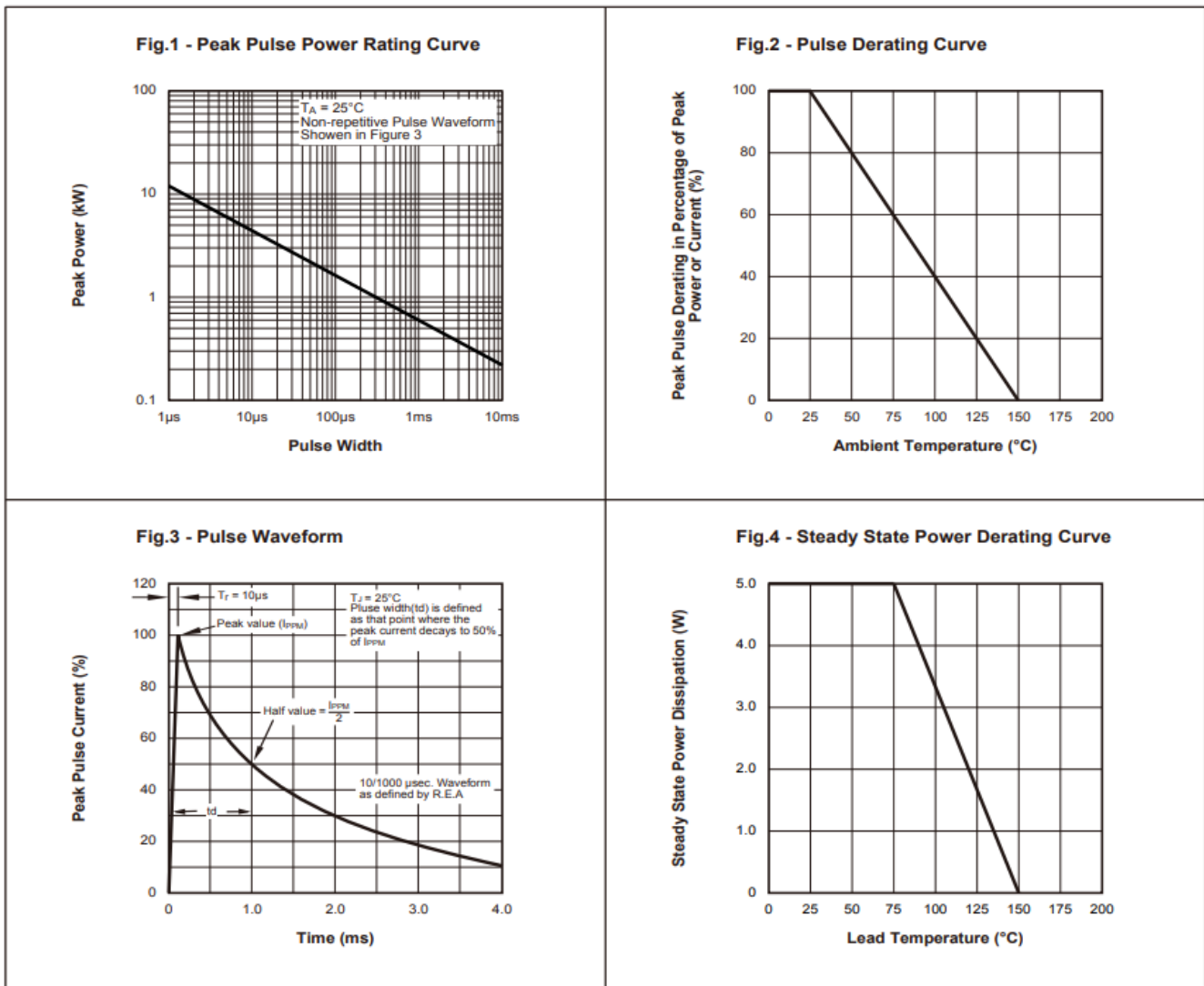
Part No. (Uni)	Part No. (Bi)	Reverse Stand off Voltage	Breakage Voltage V _{BR} @ I _T		Test Current I _T (mA)	Maximum Clamping Voltage V _C @ I _{pp}	Maximum Peak Pulse Current I _{pp} (A)	Maximum Reverse Leakage I _R @V _{RWM}
			V _{RWM} (V)	Min(V)		Max(V)	V _C (V)	I _{pp} (A)
P6KE110AY	P6KE110CAY	94	105	116	1	152	3.9	1
P6KE120AY	P6KE120CAY	102	114	126	1	165	3.6	1
P6KE130AY	P6KE130CAY	111	124	137	1	179	3.4	1
P6KE150AY	P6KE150CAY	128	143	158	1	207	2.9	1
P6KE160AY	P6KE160CAY	136	152	168	1	219	2.7	1
P6KE170AY	P6KE170CAY	145	162	179	1	234	2.6	1
P6KE180AY	P6KE180CAY	154	171	189	1	246	2.4	1
P6KE200AY	P6KE200CAY	171	190	210	1	274	2.2	1
P6KE220AY	P6KE220CAY	185	209	231	1	328	1.8	1
P6KE250AY	P6KE250CAY	214	237	263	1	344	1.7	1
P6KE300AY	P6KE300CAY	256	285	315	1	414	1.4	1
P6KE350AY	P6KE350CAY	300	333	368	1	482	1.2	1
P6KE400AY	P6KE400CAY	342	380	420	1	548	1.1	1
P6KE440AY	P6KE440CAY	376	418	462	1	602	1	1
P6KE480AY	P6KE480CAY	408	456	504	1	658	0.9	1
P6KE510AY	P6KE510CAY	434	485	535	1	698	0.9	1
P6KE530AY	P6KE530CAY	450	503.5	556.5	1	725	0.8	1
P6KE540AY	P6KE540CAY	459	513	567	1	740	0.8	1
P6KE550AY	P6KE550CAY	467	522.5	577.5	1	760	0.8	1

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

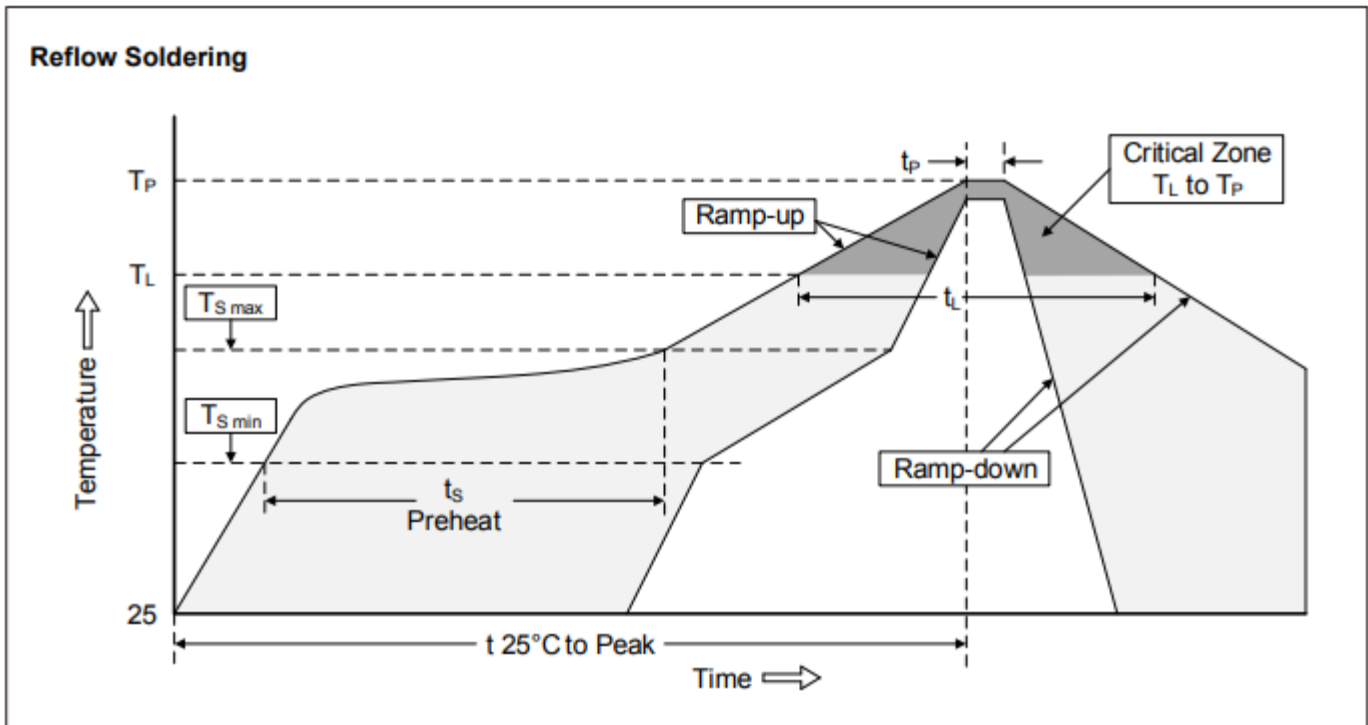


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■ Soldering Recommendation



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_s)	150°C 200°C 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	217°C 60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

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■ Quantity

Series Type	Packaging option	Base quantity	Packaging specification
P6KE	Tape and box	3000pcs / box	EIA STD RS-481

■ Warehouse Storage Conditions of product

- Storage Condition:
 1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
 2. Relative Humidity: $\cong 75\%RH$
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.