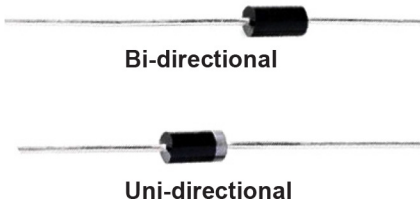


Transient Voltage Suppression Diodes P6KE Series, 600W

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**RoHS
Compliant**

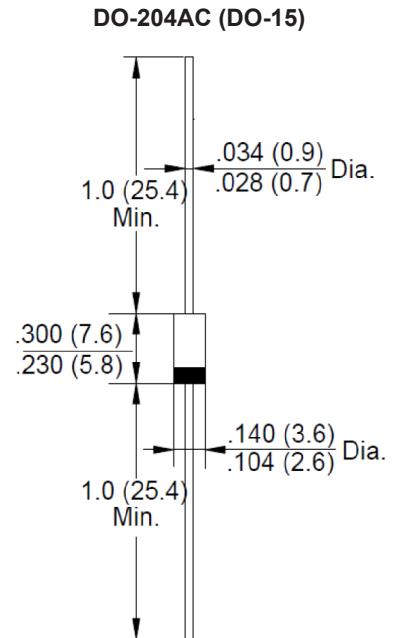


Features

- Exceeds environmental standards of MIL-STD-19500
- 600W surge capability at $10 \times 1,000\mu\text{s}$ waveform, duty cycle: 0.01%
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1ps from 0V to VBR for unidirectional and 5ns for bidirectional
- Typical IR less than 1 μA above 10 V
- High temperature soldering guaranteed: 260°C / 10 seconds / 0.375 Inched (9.5mm) lead length/5lbs. (2.3kg) tension
- Case style: DO-204AC (DO-15) molded plastic

Mechanical Data

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



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%.

Characteristics	Symbol	Values	Unit
Peak Power Dissipation at $T_A = 25^\circ\text{C}$, $T_P = 1\text{ms}$ (Note 1)	P_{PK}	Min. 600	Watts
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$ Lead Lengths 0.375 Inch 9.5 mm (Note 2)	P_D	5	
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 50A for Unidirectional Only (Note 4)	V_F	3.5 / 5	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +175	°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 × 1.6 inches (40mm × 40mm) per
 3. 8.3 ms 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 $V_F = 5\text{V}$ maximum for devices of $V_{BR} > 200\text{V}$

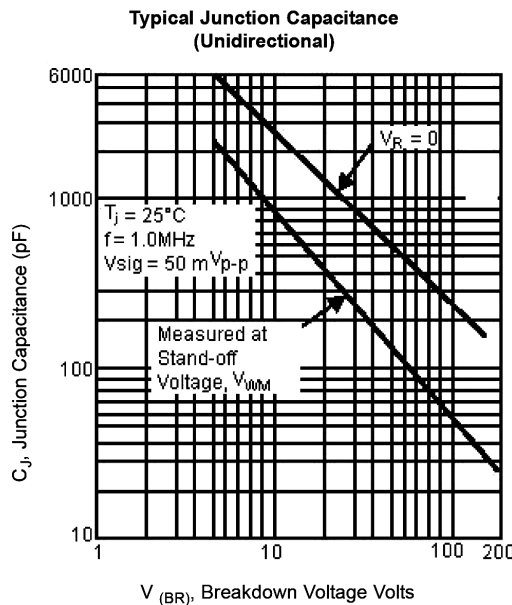
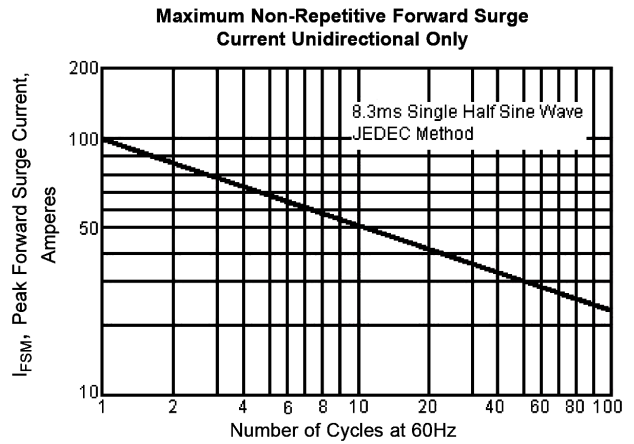
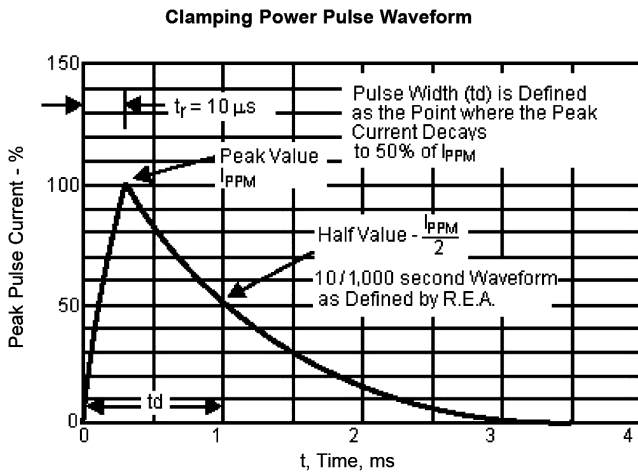
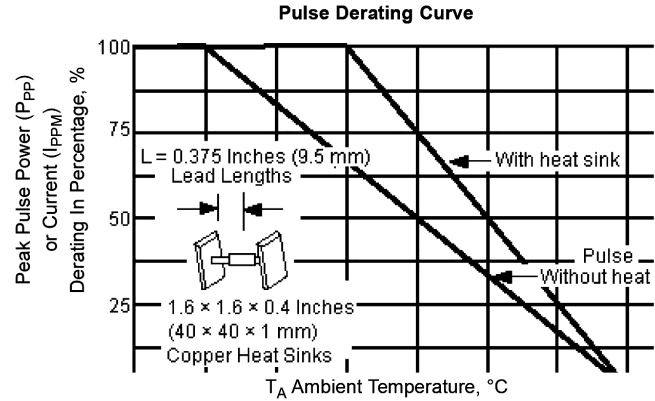
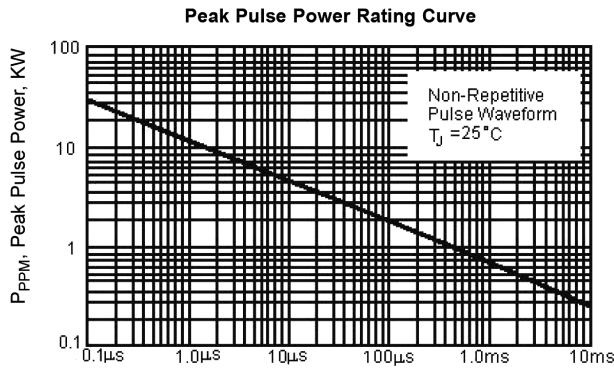
Devices for bipolar applications

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

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Ratings and Characteristic Curves



Transient Voltage Suppression Diodes

P6KE Series, 600W



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

Part Number		Nominal Voltage (Volts)	Breakdown Voltage		Test Current at I _T (mA)	Stand-Off Voltage V _{WM} (Volts)	Maximum Reverse Leakage at V _{WM} ID (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							
P6KE100A	P6KE100CA	100	95	105	1	85.5	5	4.5	137	0.106	
P6KE10A	P6KE10CA	10	9.5	10.5		8.55	10	43	14.5	0.073	
P6KE110A	P6KE110CA	110	105	116		94	5	4.1	152	0.107	
P6KE120A	P6KE120CA	120	114	126		102		3.8	165		
P6KE12A	P6KE12CA	12	11.4	12.6		10.2		37	16.7	0.078	
P6KE13A	P6KE13CA	13	12.4	13.7		11.1		34	18.2	0.081	
P6KE150A	P6KE150CA	150	143	158		128		3	207	0.108	
P6KE15A	P6KE15CA	15	14.3	15.8		12.8		29	21.2	0.084	
P6KE160A	P6KE160CA	160	152	168		136		2.8	219	0.108	
P6KE16A	P6KE16CA	16	15.2	16.8		13.6		28	22.5	0.086	
P6KE180A	P6KE180CA	180	171	189		154		2.5	246	0.108	
P6KE18A	P6KE18CA	18	17.1	18.9		15.3		25	25.2	0.088	
P6KE200A	P6KE200CA	200	190	210		171		2.2	274	0.108	
P6KE20A	P6KE20CA	20	19	21		17.1		22	27.7	0.09	
P6KE22A	P6KE22CA	22	20.9	23.1		18.8		20	30.6	0.092	
P6KE24A	P6KE24CA	24	22.8	25.2		20.5		19	33.2	0.094	
P6KE27A	P6KE27CA	27	25.7	28.4		23.1		16.8	37.5	0.096	
P6KE300A	P6KE300CA	300	285	315		256		1.5	414	0.11	
P6KE30A	P6KE30CA	30	28.5	31.5		25.6		15	41.4	0.097	
P6KE33A	P6KE33CA	33	31.4	34.7		28.2		13.8	45.7	0.098	
P6KE36A	P6KE36CA	36	34.2	37.8		30.8		12.6	49.9	0.099	
P6KE39A	P6KE39CA	39	37.1	41		33.3		11.6	53.9	0.1	
P6KE400A	P6KE400CA	400	380	420		342		1.1	548	0.11	
P6KE440A	P6KE440CA	440	418	462		376		1.04	600		
P6KE47A	P6KE47CA	47	44.7	49.4		40.2		9.7	64.8	0.101	
P6KE62A	P6KE62CA	62	58.9	65.1		53		7.4	85	0.104	
P6KE68A	P6KE68CA	68	64.6	71.4		58.1		6.8	92		
P6KE7.5A	P6KE7.5CA	7.5	7.13	7.88		10		6.4	500	55	11.3
P6KE8.2A	P6KE8.2CA	8.2	7.79	8.61	1	7.02		200	52	12.1	0.064
P6KE9.1A	P6KE9.1CA	9.1	8.65	9.55		7.78		50	47	13.4	0.068
P6KE91A	P6KE91CA	91	86.5	95.5		77.8	5	5	125	0.106	

Notes:

1. V_{BR} measured after I_T applied for 300µs, 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 ID limit is doubled.
4. All terms and symbols are consistent with ANSI/IEEE C62.35.



Transient Voltage Suppression Diodes

P6KE Series, 600W

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Part Number Table

Description	Part Number
TVS Diode, 600W, 100V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE100A
TVS Diode, 600W, 100V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE100CA
TVS Diode, 600W, 10V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE10A
TVS Diode, 600W, 10V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE10CA
TVS Diode, 600W, 110V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE110A
TVS Diode, 600W, 110V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE110CA
TVS Diode, 600W, 120V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE120A
TVS Diode, 600W, 120V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE120CA
TVS Diode, 600W, 12V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE12A
TVS Diode, 600W, 12V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE12CA
TVS Diode, 600W, 13V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE13A
TVS Diode, 600W, 13V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE13CA
TVS Diode, 600W, 150V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE150A
TVS Diode, 600W, 150V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE150CA
TVS Diode, 600W, 15V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE15A
TVS Diode, 600W, 15V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE15CA
TVS Diode, 600W, 160V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE160A
TVS Diode, 600W, 160V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE160CA
TVS Diode, 600W, 16V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE16A
TVS Diode, 600W, 16V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE16CA
TVS Diode, 600W, 180V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE180A
TVS Diode, 600W, 180V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE180CA
TVS Diode, 600W, 18V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE18A
TVS Diode, 600W, 18V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE18CA
TVS Diode, 600W, 200V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE200A
TVS Diode, 600W, 200V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE200CA
TVS Diode, 600W, 20V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE20A
TVS Diode, 600W, 20V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE20CA
TVS Diode, 600W, 22V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE22A
TVS Diode, 600W, 22V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE22CA
TVS Diode, 600W, 24V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE24A
TVS Diode, 600W, 24V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE24CA
TVS Diode, 600W, 27V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE27A
TVS Diode, 600W, 27V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE27CA
TVS Diode, 600W, 300V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE300A
TVS Diode, 600W, 300V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE300CA
TVS Diode, 600W, 30V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE30A

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Transient Voltage Suppression Diodes

P6KE Series, 600W

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Description	Part Number
TVS Diode, 600W, 30V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE30CA
TVS Diode, 600W, 33V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE33A
TVS Diode, 600W, 33V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE33CA
TVS Diode, 600W, 36V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE36A
TVS Diode, 600W, 36V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE36CA
TVS Diode, 600W, 39V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE39A
TVS Diode, 600W, 39V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE39CA
TVS Diode, 600W, 400V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE400A
TVS Diode, 600W, 400V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE400CA
TVS Diode, 600W, 440V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE440A
TVS Diode, 600W, 440V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE440CA
TVS Diode, 600W, 47V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE47A
TVS Diode, 600W, 47V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE47CA
TVS Diode, 600W, 62V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE62A
TVS Diode, 600W, 62V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE62CA
TVS Diode, 600W, 68V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE68A
TVS Diode, 600W, 68V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE68CA
TVS Diode, 600W, 7.5V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE7.5A
TVS Diode, 600W, 7.5V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE7.5CA
TVS Diode, 600W, 8.2V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE8.2A
TVS Diode, 600W, 8.2V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE8.2CA
TVS Diode, 600W, 9.1V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE9.1A
TVS Diode, 600W, 9.1V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE9.1CA
TVS Diode, 600W, 91V _{BR} Nom, Unidirectional, DO-204AC (DO-15)	P6KE91A
TVS Diode, 600W, 91V _{BR} Nom, Bidirectional, DO-204AC (DO-15)	P6KE91CA

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