

P4KE SERIES

TRANSIENT VOLTAGE SUPPRESSOR DIODES

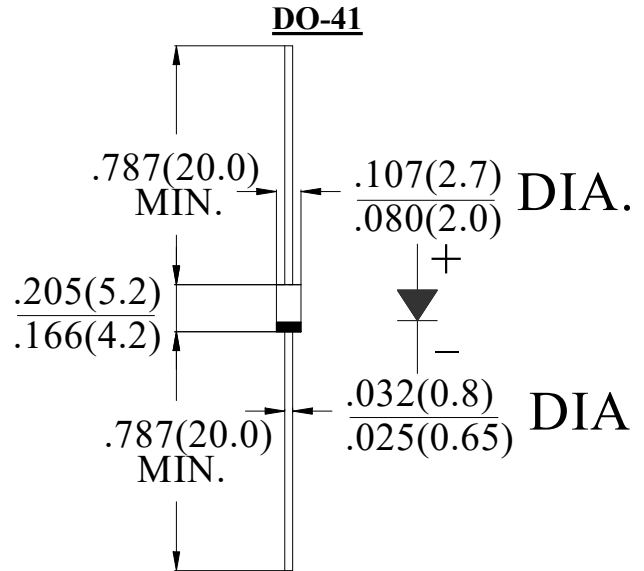
FEATURE

- . Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- . 400W surge capability at 10×100us 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 IR less than 1 μA above 10V
- . High temperature soldering guaranteed: 260°C/10 seconds / .375" lead length / 5lbs tension

MECHANICAL DATA

- . Terminal: Plated axial leads solderable per MIL-STD 202E, method 208C
- . Case: Molded with UL-94 Class V-0 recognized Flame Retardant Epoxy
- . Polarity: color band denotes cathode except bipolar

Voltage Range
6.8 to 400 Vots
400 Watts Peak Power



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

Type Number	SYM BOL	Value	units
Peak Power Dissipation at Ta=25°C, Tp=1ms (note 1)	P_{PPM}	400	Watts
Steady State Power Dissipation .375" lead length at TL=75°C (note 2)	P_D	1.0	Watts
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (note 3)	I_{FSM}	40	Amps
Storage Temperature	T_{STG}	-55 to +150	°C
Operating Junction Temperature	T_J	-55 to +150	°C

Note:

1. Non-repetitive Current Pulse Per Fig.3 and Derated above Ta=25°C Per Fig.2 .
2. Mounted on Copper Pad Area of 1.6×1.6" (40×40mm) Per Fig.5 .
3. 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minutes Maximum.

Devices for Bipolar Applications

1. For Bidirectional Use C Suffix for Types P4KE6.8A thru Types P4KE400A.
2. Electrical Characteristics Apply in Both Directions.

ELECTRICAL CHARACTERISTICS(TA=25°C unless otherwise noted)

Device		Nominal Voltage (volts)	Breakdown Voltage		Test Current @IT (mA)	Stand-Off Voltage VWM (volts)	Maximum Reverse Leakage At VWM ID(μA)	Maximum Peak Pulse Current PPM (note2)(Amps)	Maximum Clamping Voltage at IPPM VC(Volts)
			Voltage						
			VBR(volts)(note1)						
UNI	BI		Min	Max					
P4KE6.8A	P4KE6.8CA	6.8	6.45	7.14	10	5.80	1000	40	10.5
P4KE7.5A	P4KE7.5CA	7.5	7.13	7.88	10	6.4	500	37	11.3
P4KE8.2A	P4KE8.2CA	8.2	7.79	8.61	10	7.02	200	34	12.1
P4KE9.1A	P4KE9.1CA	9.1	8.65	9.55	1.0	7.78	50	31	13.4
P4KE10A	P4KE10CA	10	9.50	10.5	1.0	8.55	10	29	14.5
P4KE11A	P4KE11CA	11	10.5	11.6	1.0	9.40	5.0	27	15.6
P4KE12A	P4KE12CA	12	11.4	12.6	1.0	10.2	5.0	25	16.7
P4KE13A	P4KE13CA	13	12.4	13.7	1.0	11.1	1.0	23	18.2
P4KE15A	P4KE15CA	15	14.3	15.8	1.0	12.8	1.0	20	21.2
P4KE16A	P4KE16CA	16	15.2	16.8	1.0	13.6	1.0	18.6	22.5
P4KE18A	P4KE18CA	18	17.1	18.9	1.0	15.3	1.0	16.5	25.2
P4KE20A	P4KE20CA	20	19.0	21.0	1.0	17.1	1.0	15	27.7
P4KE22A	P4KE22CA	22	20.9	23.1	1.0	18.8	1.0	13.7	30.6
P4KE24A	P4KE24CA	24	22.8	25.2	1.0	20.5	1.0	12.6	33.2
P4KE27A	P4KE27CA	27	25.7	28.4	1.0	23.1	1.0	11.0	37.5
P4KE30A	P4KE30CA	30	28.5	31.5	1.0	25.6	1.0	10	41.4
P4KE33A	P4KE33CA	33	31.4	34.7	1.0	28.2	1.0	9.0	45.7
P4KE36A	P4KE36CA	36	34.2	37.8	1.0	30.8	1.0	8.4	49.9
P4KE39A	P4KE39CA	39	37.1	41.0	1.0	33.3	1.0	7.7	53.9
P4KE43A	P4KE43CA	43	40.9	45.2	1.0	36.8	1.0	7.0	59.3
P4KE47A	P4KE47CA	47	44.7	49.4	1.0	40.2	1.0	6.4	64.8
P4KE51A	P4KE51CA	51	48.5	53.6	1.0	43.6	1.0	6.0	70.1
P4KE56A	P4KE56CA	56	53.2	58.8	1.0	47.8	1.0	5.4	77
P4KE62A	P4KE62CA	62	58.9	65.1	1.0	53.0	1.0	5.0	85
P4KE68A	P4KE68CA	68	64.6	71.4	1.0	58.1	1.0	4.5	92
P4KE75A	P4KE75CA	75	71.3	78.8	1.0	64.1	1.0	4.0	103
P4KE82A	P4KE82CA	82	77.9	86.1	1.0	70.1	1.0	3.7	113
P4KE91A	P4KE91CA	91	86.5	95.5	1.0	77.8	1.0	3.3	125
P4KE100A	P4KE100CA	100	95.0	105.0	1.0	85.5	1.0	3.0	137
P4KE110A	P4KE110CA	110	105.0	116.0	1.0	94.0	1.0	2.7	152
P4KE120A	P4KE120CA	120	114.0	126.0	1.0	102.0	1.0	2.5	165
P4KE130A	P4KE130CA	130	124.0	137.0	1.0	111.0	1.0	2.3	179
P4KE150A	P4KE150CA	150	143.0	158.0	1.0	128.0	1.0	2.0	207
P4KE160A	P4KE160CA	160	152.0	168.0	1.0	136.0	1.0	1.9	219
P4KE170A	P4KE170CA	170	162.0	179.0	1.0	145.0	1.0	1.8	234
P4KE180A	P4KE180CA	180	171.0	189.0	1.0	154.0	1.0	1.7	246
P4KE200A	P4KE200CA	200	190.0	210.0	1.0	171.0	1.0	1.51	274
P4KE220A	P4KE220CA	220	209.0	231.0	1.0	185.0	1.0	1.3	328
P4KE250A	P4KE250CA	250	237.0	263.0	1.0	214.0	1.0	1.2	344
P4KE300A	P4KE300CA	300	285.0	315.0	1.0	256.0	1.0	1.0	414
P4KE350A	P4KE350CA	350	332.0	368.0	1.0	300.0	1.0	0.85	482
P4KE400A	P4KE400CA	400	380.0	420.0	1.0	342.0	1.0	0.75	548

Note:

1. VBR measured after IT applied for 300us, IT=square wave pulse or equivalent.
2. Surge current waveform per Figure 3 and derate per Figure 2.
3. All terms and symbols are consistent with ANSI/IEEE C62.35.

RATING AND CHARACTERISTIC CURVES

FIG.1-PEAK PULSE POWER RATING CURVE

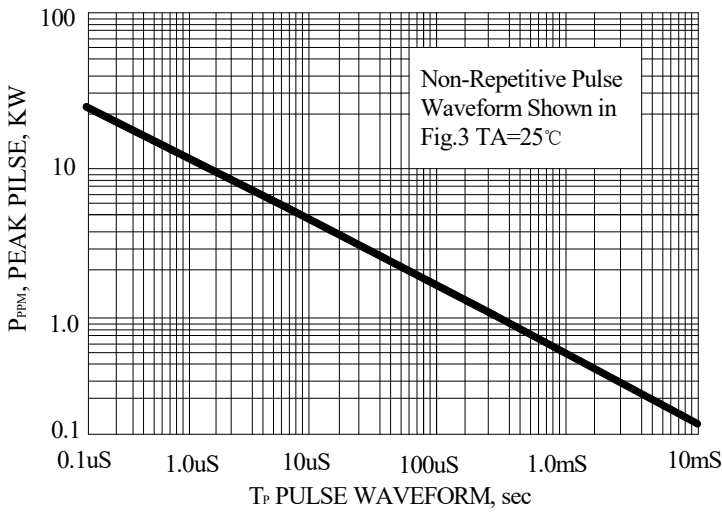


FIG.2-PULSE DERATING CURVE

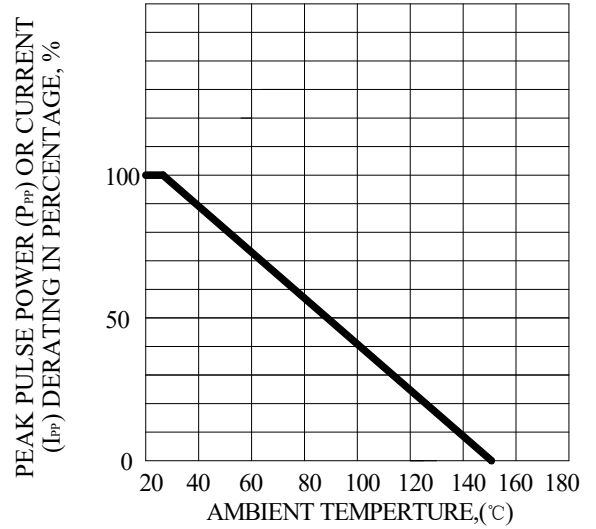


FIG.3-PULSE WAVEFORM

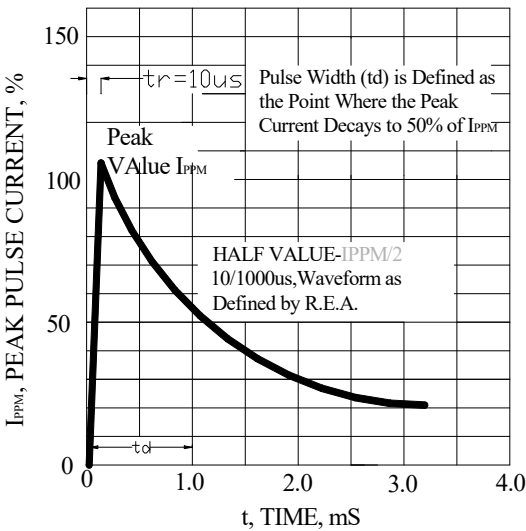


FIG.4- TYPICAL JUNCTION CAPACITANCE

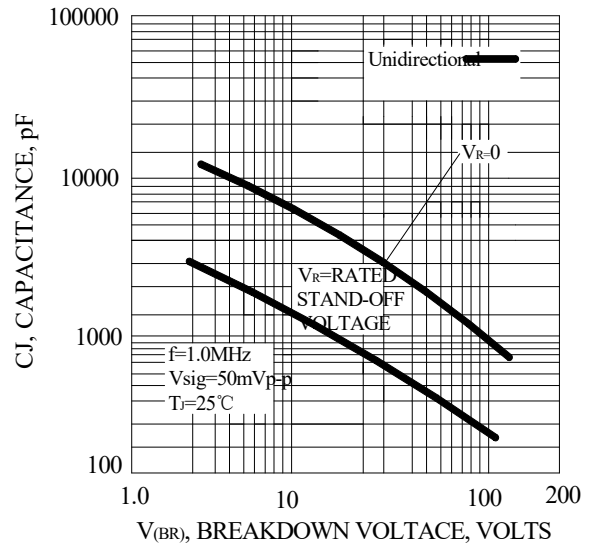


FIG.5- STEADY STATE POWER DERATING CURVE

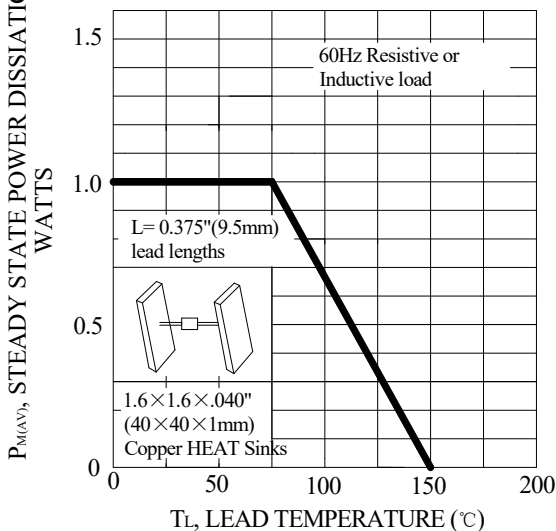
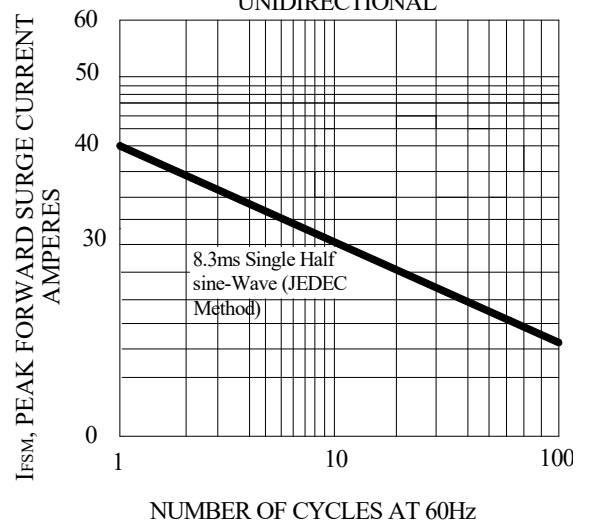
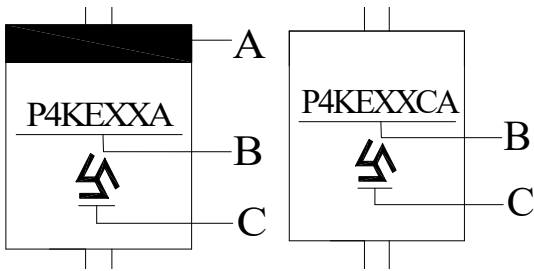


FIG.6- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL



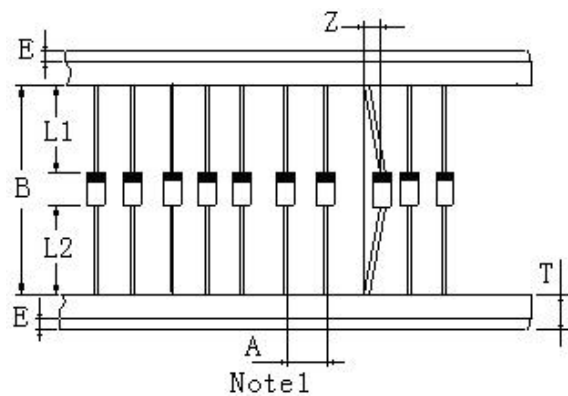
Marking and packaging illustration

1、Marking



SYMBOL	Explanation
A	Color Band Denotes Cathode
B	Product Name
C	Trademark

2、Packaging



ITEM	SYMBOL	SPECIFICATIONS	
		(mm)	(inch)
Component alignment	Z	1.2max	0.048max
Tape width	T	6.0±0.4	0.236±0.016
Exposed adhesive	E	0.8max	0.032max
Body eccentricity	L1-L2	1.0max	0.040max
Component	A	5.0±0.5	0.2±0.02
Inner tap	B	52.0~53.5	2.05~2.11
NOTE: Each component lead shall be sandwiched between tapes for a minimum of 2.5mm (0.1inch)			