



DATA SHEET

SEMICONDUCTOR

P4KE Series

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR 400 Watt Peak Power 1.0 Watt Steady State VOLTAGE- 6.8 to 540 Volts

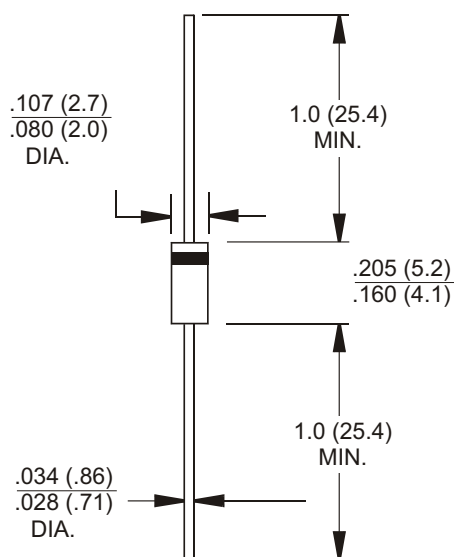


FEATURES

Plastic package has Underwriters Laboratory
Flammability Classification 94V-O
Glass passivated chip junction in DO-41 package
600W surge capability at 1ms
Excellent clamping capability
Low zener impedance
Fast response time: typically less than 1.0 ps from 0 volts to BV min
Typical IR less than 1μA above 10V
High temperature soldering guaranteed: 260°C/10 seconds/.375"(.95mm) lead
length/5lbs., (2.3kg) tension
High temperature soldering : 260°C / 10 seconds at terminals
Pb free product at available : 99% Sn above meet RoHS
environment substance directive request

DO-41

Unit:inch(mm)



MECHANICAL DATA

Case: JEDEC DO-41 Molded plastic
Terminals: Axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denoted cathode except Bipolar
Mounting Position: Any
Quantify Per Reel : 5000 pcs

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types
Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.

For Capacitive load derate current by 20%.

RATING	SYMBOL	VALUE	UNITS
Peak Power Dissipation on 10/1000us waveform (Note1.2 , Fig.1)	P _{pp}	400	Watts
Peak Forward Surge Current, 8.3ms single half sine - wave uni- directional only(JEDEC method) (Notes 2,3)	I _{FSM}	40	Amps
Peak Pulse Current on 10/1000s waveform(Note 1 , Fig.3)	I _{PP}	See Table 1	Amps
Operating and Storage Temperature Range	T _J , T _{STG}	-55 ~ +150	°C

NOTES:

- Non-repetitive current pulse, per Fig.3 and derated above TA = 25°C per Fig.2.
- Mounted on 5.0 mm²(0.13mm thick) land areas.
- Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

P4KE Series

Part Number		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage	Peak Pulse Current	Package		
			VBR@ I T			I R@ VRWM					Vc@Ipp	Ipp
			VRWM	Min.		Max.	UNI					
UNI	BI	V	V	V	m A	µA	µA	V	A			
400W Transient Voltage Suppressor												
P4KE6.8	P4KE6.8C	5.5	6.12	7.48	10	1000.0	2000.0	10.8	37.0	DO-41		
P4KE6.8A	P4KE6.8CA	5.8	6.45	7.14	10	1000.0	2000.0	10.5	38.1	DO-41		
P4KE7.5	P4KE7.5C	6.1	6.75	8.25	10	500.0	1000.0	11.7	34.2	DO-41		
P4KE7.5A	P4KE7.5CA	6.4	7.13	7.88	10	500.0	1000.0	11.3	35.4	DO-41		
P4KE8.2	P4KE8.2C	6.6	7.38	9.02	10	200.0	400.0	12.5	32.0	DO-41		
P4KE8.2A	P4KE8.2CA	7.0	7.79	8.61	10	200.0	400.0	12.1	33.1	DO-41		
P4KE9.1	P4KE9.1C	7.4	8.19	10.00	1	50.0	100.0	13.8	29.0	DO-41		
P4KE9.1A	P4KE9.1CA	7.8	8.65	9.55	1	50.0	100.0	13.4	29.9	DO-41		
P4KE10	P4KE10C	8.1	9.00	11.00	1	10.0	20.0	15.0	26.7	DO-41		
P4KE10A	P4KE10CA	8.6	9.50	10.50	1	10.0	20.0	14.5	27.6	DO-41		
P4KE11	P4KE11C	8.9	9.90	12.10	1	5.0	10.0	16.2	24.7	DO-41		
P4KE11A	P4KE11CA	9.4	10.50	11.60	1	5.0	10.0	15.6	25.6	DO-41		
P4KE12	P4KE12C	9.7	10.80	13.20	1	5.0	10.0	17.3	23.1	DO-41		
P4KE12A	P4KE12CA	10.2	11.40	12.60	1	5.0	5.0	16.7	24.0	DO-41		
P4KE13	P4KE13C	10.5	11.70	14.30	1	5.0	5.0	19.0	21.1	DO-41		
P4KE13A	P4KE13CA	11.1	12.40	13.70	1	5.0	5.0	18.2	22.0	DO-41		
P4KE15	P4KE15C	12.1	13.50	16.50	1	5.0	5.0	22.0	18.2	DO-41		
P4KE15A	P4KE15CA	12.8	14.30	15.80	1	5.0	5.0	21.2	18.9	DO-41		
P4KE16	P4KE16C	12.9	14.40	17.60	1	5.0	5.0	23.5	17.0	DO-41		
P4KE16A	P4KE16CA	13.6	15.20	16.80	1	5.0	5.0	22.5	17.8	DO-41		
P4KE18	P4KE18C	14.5	16.20	19.80	1	5.0	5.0	26.5	15.1	DO-41		
P4KE18A	P4KE18CA	15.3	17.10	18.90	1	5.0	5.0	25.2	15.9	DO-41		
P4KE20	P4KE20C	16.2	18.00	22.00	1	5.0	5.0	29.1	13.7	DO-41		
P4KE20A	P4KE20CA	17.1	19.00	21.00	1	5.0	5.0	27.7	14.4	DO-41		
P4KE22	P4KE22C	17.8	19.80	24.20	1	5.0	5.0	31.9	12.5	DO-41		
P4KE22A	P4KE22CA	18.8	20.90	23.10	1	5.0	5.0	30.6	13.1	DO-41		
P4KE24	P4KE24C	19.4	21.60	26.40	1	5.0	5.0	34.7	11.5	DO-41		
P4KE24A	P4KE24CA	20.5	22.80	25.20	1	5.0	5.0	33.2	12.0	DO-41		
P4KE27	P4KE27C	21.8	24.30	29.70	1	5.0	5.0	39.1	10.2	DO-41		
P4KE27A	P4KE27CA	23.1	25.70	28.40	1	5.0	5.0	37.5	10.7	DO-41		
P4KE30	P4KE30C	24.3	27.00	33.00	1	5.0	5.0	43.5	9.2	DO-41		
P4KE30A	P4KE30CA	25.6	28.50	31.50	1	5.0	5.0	41.4	9.7	DO-41		
P4KE33	P4KE33C	26.8	29.70	36.30	1	5.0	5.0	47.7	8.4	DO-41		
P4KE33A	P4KE33CA	28.2	31.40	34.70	1	5.0	5.0	45.7	8.8	DO-41		
P4KE36	P4KE36C	29.1	32.40	39.60	1	5.0	5.0	52.0	7.7	DO-41		
P4KE36A	P4KE36CA	30.8	34.20	37.80	1	5.0	5.0	49.9	8.0	DO-41		
P4KE39	P4KE39C	31.6	35.10	42.90	1	5.0	5.0	56.4	7.1	DO-41		
P4KE39A	P4KE39CA	33.3	37.10	41.00	1	5.0	5.0	53.9	7.4	DO-41		
P4KE43	P4KE43C	34.8	38.70	47.30	1	5.0	5.0	61.9	6.5	DO-41		
P4KE43A	P4KE43CA	36.8	40.90	45.20	1	5.0	5.0	59.3	6.7	DO-41		
P4KE47	P4KE47C	38.1	42.30	51.70	1	5.0	5.0	67.8	5.9	DO-41		
P4KE47A	P4KE47CA	40.2	44.70	49.40	1	5.0	5.0	64.8	6.2	DO-41		
P4KE51	P4KE51C	41.3	45.90	56.10	1	5.0	5.0	73.5	5.4	DO-41		
P4KE51A	P4KE51CA	43.6	48.50	53.60	1	5.0	5.0	70.1	5.7	DO-41		

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			VBR@ I T			I T	I R@ VRWM				Vc@Ipp	Ipp	
			VRWM	Min.			Max.						UNI
UNI	BI	V	V	V	m A	μA	μA	V	A				
400W Transient Voltage Suppressor													
P4KE56	P4KE56C	45.4	50.40	61.60	1	5.0	5.0	80.5	5.0	DO-41			
P4KE56A	P4KE56CA	47.8	53.20	58.80	1	5.0	5.0	77.0	5.2	DO-41			
P4KE62	P4KE62C	50.2	55.80	68.20	1	5.0	5.0	89.0	4.5	DO-41			
P4KE62A	P4KE62CA	53.0	58.90	65.10	1	5.0	5.0	85.0	4.7	DO-41			
P4KE68	P4KE68C	55.1	61.20	74.80	1	5.0	5.0	98.0	4.1	DO-41			
P4KE68A	P4KE68CA	58.1	64.40	71.40	1	5.0	5.0	92.0	4.3	DO-41			
P4KE75	P4KE75C	60.7	67.50	82.50	1	5.0	5.0	108.0	3.7	DO-41			
P4KE75A	P4KE75CA	64.1	71.30	78.80	1	5.0	5.0	103.0	3.9	DO-41			
P4KE82	P4KE82C	66.4	73.80	90.20	1	5.0	5.0	118.0	3.4	DO-41			
P4KE82A	P4KE82CA	70.1	77.90	86.10	1	5.0	5.0	113.0	3.5	DO-41			
P4KE91	P4KE91C	73.7	81.90	100.00	1	5.0	5.0	131.0	3.1	DO-41			
P4KE91A	P4KE91CA	77.8	86.50	95.50	1	5.0	5.0	125.0	3.2	DO-41			
P4KE100	P4KE100C	81.0	90.00	110.00	1	5.0	5.0	144.0	2.8	DO-41			
P4KE100A	P4KE100CA	85.5	95.00	105.00	1	5.0	5.0	137.0	2.9	DO-41			
P4KE110	P4KE110C	89.2	99.00	121.00	1	5.0	5.0	158.0	2.5	DO-41			
P4KE110A	P4KE110CA	94.0	105.00	116.00	1	5.0	5.0	152.0	2.6	DO-41			
P4KE120	P4KE120C	97.2	108.00	132.00	1	5.0	5.0	173.0	2.3	DO-41			
P4KE120A	P4KE120CA	102.0	114.00	126.00	1	5.0	5.0	165.0	2.4	DO-41			
P4KE130	P4KE130C	105.0	117.00	143.00	1	5.0	5.0	187.0	2.1	DO-41			
P4KE130A	P4KE130CA	111.0	124.00	137.00	1	5.0	5.0	179.0	2.2	DO-41			
P4KE150	P4KE150C	121.0	135.00	165.00	1	5.0	5.0	215.0	1.9	DO-41			
P4KE150A	P4KE150CA	128.0	143.00	158.00	1	5.0	5.0	207.0	1.9	DO-41			
P4KE160	P4KE160C	130.0	144.00	176.00	1	5.0	5.0	230.0	1.7	DO-41			
P4KE160A	P4KE160CA	136.0	152.00	168.00	1	5.0	5.0	219.0	1.8	DO-41			
P4KE170	P4KE170C	138.0	153.00	187.00	1	5.0	5.0	244.0	1.6	DO-41			
P4KE170A	P4KE170CA	145.0	162.00	179.00	1	5.0	5.0	234.0	1.7	DO-41			
P4KE180	P4KE180C	146.0	162.00	198.00	1	5.0	5.0	258.0	1.6	DO-41			
P4KE180A	P4KE180CA	154.0	171.00	189.00	1	5.0	5.0	246.0	1.6	DO-41			
P4KE200	P4KE200C	162.0	180.00	220.00	1	5.0	5.0	287.0	1.4	DO-41			
P4KE200A	P4KE200CA	171.0	190.00	210.00	1	5.0	5.0	274.0	1.5	DO-41			
P4KE220	P4KE220C	175.0	198.00	242.00	1	5.0	5.0	344.0	1.2	DO-41			
P4KE220A	P4KE220CA	185.0	209.00	231.00	1	5.0	5.0	328.0	1.2	DO-41			
P4KE250	P4KE250C	202.0	225.00	275.00	1	5.0	5.0	360.0	1.1	DO-41			
P4KE250A	P4KE250CA	214.0	237.00	263.00	1	5.0	5.0	344.0	1.2	DO-41			
P4KE300	P4KE300C	243.0	270.00	330.00	1	5.0	5.0	430.0	0.9	DO-41			
P4KE300A	P4KE300CA	256.0	285.00	315.00	1	5.0	5.0	414.0	1.0	DO-41			
P4KE350	P4KE350C	284.0	315.00	385.00	1	5.0	5.0	504.0	0.8	DO-41			
P4KE350A	P4KE350CA	300.0	333.00	368.00	1	5.0	5.0	482.0	0.8	DO-41			
P4KE400	P4KE400C	324.0	360.00	440.00	1	5.0	5.0	574.0	0.7	DO-41			
P4KE400A	P4KE400CA	342.0	380.00	420.00	1	5.0	5.0	548.0	0.7	DO-41			
P4KE440	P4KE440C	356.0	396.00	484.00	1	5.0	5.0	631.0	0.6	DO-41			
P4KE440A	P4KE440CA	376.0	418.00	462.00	1	5.0	5.0	602.0	0.7	DO-41			
P4KE480	P4KE480C	389.0	432.00	528.00	1	5.0	5.0	686.0	0.6	DO-41			
P4KE480A	P4KE480CA	408.0	456.00	504.00	1	5.0	5.0	658.0	0.6	DO-41			
P4KE510	P4KE510C	413.0	459.00	561.00	1	5.0	5.0	729.0	0.6	DO-41			
P4KE510A	P4KE510CA	434.0	485.00	535.00	1	5.0	5.0	698.0	0.6	DO-41			
P4KE540	P4KE540C	437.0	486.00	594.00	1	5.0	5.0	772.0	0.5	DO-41			
P4KE540A	P4KE540CA	459.0	513.00	567.00	1	5.0	5.0	740.0	0.5	DO-41			

DEVICE CHARACTERISTICS

P4KE Series

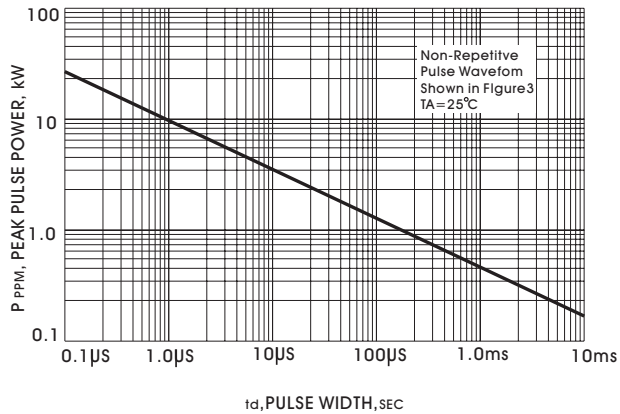


FIGURE 1-PEAK PULSE POWER RATING VERSUS PULSE TIME CURVE

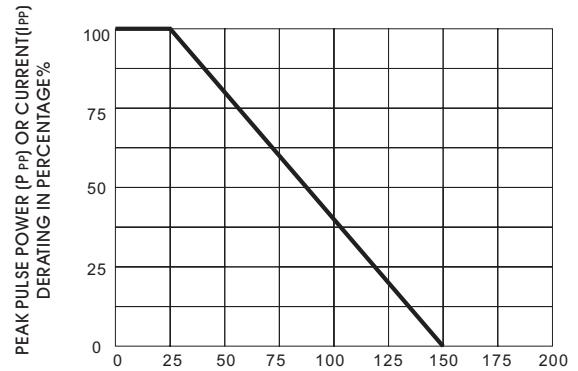


FIGURE 2-PULSE DERATING CURVE

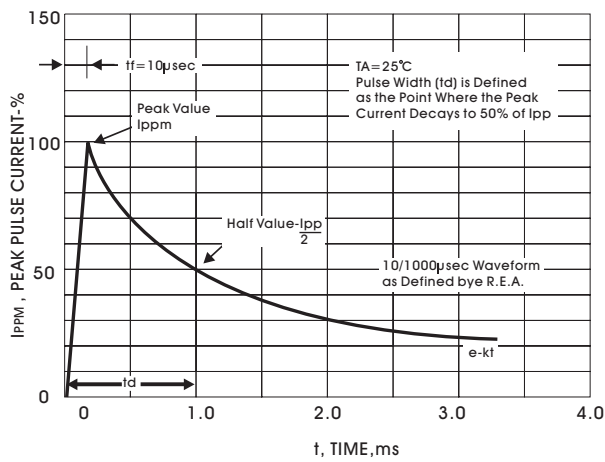


FIGURE 3-PULSE WAVEFORM

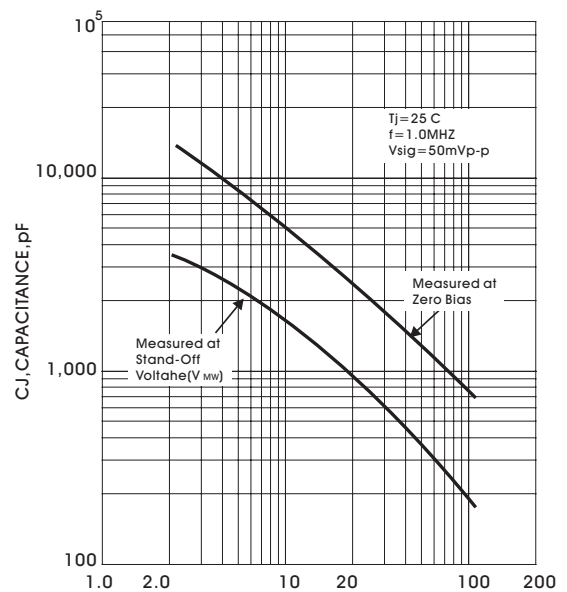


FIG. 4-TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL

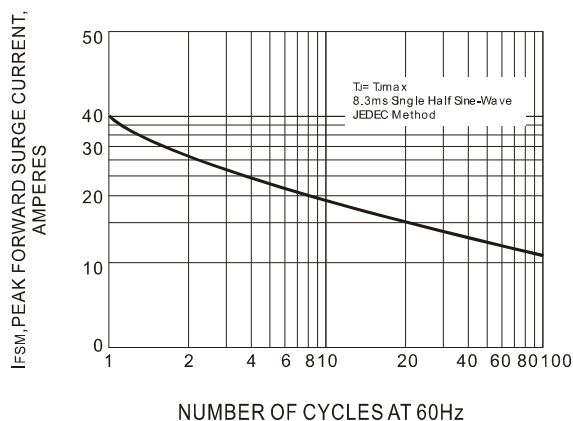


FIG. 5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL