

# 400W Transient Voltage Suppressor



SMD Diodes Specialist

## P4KE-G Series

Stand-off Voltage: 6.8 ~ 440V

Power Dissipation: 440 Watts

RoHS Device

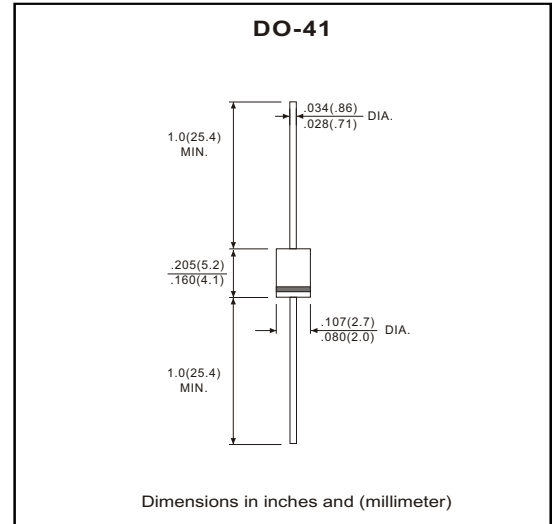


### Features

- Glass passivated chip
- Low leakage
- Uni and Bidirection unit
- Excellent clamping capability
- The plastic material has UL recognition 94V-0
- Fast response time: typically less than 1.0pS from 0 volts to BV min

### Mechanical Data

- Case: Molded plastic DO-41
- Polarity: By cathode band denotes unidirectional device none cathode band denoted bi-directional device
- Weight: 0.34 gram



### Maximum Ratings and Electrical Characteristics

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

Parameter	Symbol	Value	Unit
Peak power dissipation at TL=25°C TP=1mS (Note 1,2)	PPK	Minimum 400	W
Peak forward surge current, 8.3mS single half sine-wave super imposed on rated load (Note 3) (JEDEC method)	IFSM	40	A
Steady state power dissipation at TL=75°C	PM(AV)	1.0	W
Maximum instantaneous forward voltage at 35A for unidirectional devices only (Note 3)	VF	3.5	V
Operating junction and storage temperature range	TJ, TSTG	-55 to +150	°C

#### NTOES:

- (1) Non-repetitive current pulse, per fig.3 and derated above TA=25°C per fig. 1.
- (2) Thermal resistance junction to ambient.
- (3) 8.3mS single half-sine wave duty cycle=4 pulses maximum per minute (unidirectional units only).

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Part No.	Absolute Maximum Rating (T <sub>A</sub> =25°C)					Electrical Characteristics(T <sub>A</sub> =25°C)			
	V <sub>WM</sub> (V)	V <sub>BR</sub> Min. (V)	M <sub>BR</sub> Max. (V)	I <sub>T</sub> (mA)	I <sub>FSM</sub> (A)@8.3mS	Max. V <sub>C</sub> @I <sub>PPM</sub>		Max. I <sub>D</sub> (μA)@V <sub>WM</sub>	
						(V)	I <sub>PPM</sub> (A)	UNI	BI
P4KE6.8(c)-G	5.50	6.12	7.48	10	40	10.8	38.0	1000	2000
P4KE6.8(c)A-G	5.80	6.45	7.14	10	40	10.5	40.0	1000	2000
P4KE7.5(c)-G	6.05	6.75	8.25	10	40	11.7	36.0	500	1000
P4KE7.5(c)A-G	6.40	7.13	7.88	10	40	11.3	37.0	500	1000
P4KE8.2(c)-G	6.63	7.38	9.02	10	40	12.5	33.0	200	400
P4KE8.2(c)A-G	7.02	7.79	8.61	10	40	12.1	35.0	200	400
P4KE9.1(c)-G	7.37	8.19	10.0	1	40	13.8	30.0	50	100
P4KE9.1(c)A-G	7.78	8.65	9.55	1	40	13.4	31.0	50	100
P4KE10(c)-G	8.10	9.00	11.0	1	40	15.0	28.0	10	20
P4KE10(c)A-G	8.55	9.50	10.5	1	40	14.5	29.0	10	20
P4KE11(c)-G	8.92	9.90	12.1	1	40	16.2	26.0	5	10
P4KE11(c)A-G	9.40	10.5	11.6	1	40	15.6	27.0	5	10
P4KE12(c)-G	9.72	10.8	13.2	1	40	17.3	24.0	5	5
P4KE12(c)A-G	10.2	11.4	12.6	1	40	16.7	25.0	5	5
P4KE13(c)-G	10.5	11.7	14.3	1	40	19.0	22.0	5	5
P4KE13(c)A-G	11.1	12.4	13.7	1	40	18.2	23.0	5	5
P4KE15(c)-G	12.1	13.5	16.5	1	40	22.0	19.0	5	5
P4KE15(c)A-G	12.8	14.3	15.8	1	40	21.2	20.0	5	5
P4KE16(c)-G	12.9	14.4	17.6	1	40	23.5	18.0	5	5
P4KE16(c)A-G	13.6	15.2	16.8	1	40	22.5	19.0	5	5
P4KE18(c)-G	14.5	16.2	19.8	1	40	26.5	16.0	5	5
P4KE18(c)A-G	15.3	17.1	18.9	1	40	25.5	17.0	5	5
P4KE20(c)-G	16.2	18.0	22.0	1	40	29.1	14.0	5	5
P4KE20(c)A-G	17.1	19.0	21.0	1	40	27.7	15.0	5	5
P4KE22(c)-G	17.8	19.8	24.2	1	40	31.9	13.0	5	5
P4KE22(c)A-G	18.8	20.9	23.1	1	40	30.6	14.0	5	5
P4KE24(c)-G	19.4	21.6	26.4	1	40	34.7	12.0	5	5
P4KE24(c)A-G	20.5	22.8	25.2	1	40	33.2	13.0	5	5
P4KE27(c)-G	21.8	24.3	29.7	1	40	39.1	11.0	5	5
P4KE27(c)A-G	23.1	25.7	28.4	1	40	37.5	11.2	5	5
P4KE30(c)-G	24.3	27.0	33.0	1	40	43.5	10.0	5	5
P4KE30(c)A-G	25.6	28.5	31.5	1	40	41.4	10.0	5	5
P4KE33(c)-G	26.8	29.7	36.3	1	40	47.4	9.0	5	5
P4KE33(c)A-G	28.2	31.4	34.7	1	40	45.7	9.0	5	5
P4KE36(c)-G	29.1	32.4	39.6	1	40	52.0	8.0	5	5
P4KE36(c)A-G	30.8	34.2	37.8	1	40	49.9	8.4	5	5
P4KE39(c)-G	31.6	35.1	42.9	1	40	56.4	7.4	5	5
P4KE39(c)A-G	33.3	37.1	41.0	1	40	53.9	7.8	5	5
P4KE43(c)-G	34.8	38.7	47.3	1	40	61.9	6.8	5	5
P4KE43(c)A-G	36.8	10.9	45.2	1	40	59.3	7.1	5	5
P4KE47(c)-G	38.1	12.3	51.7	1	40	67.8	6.2	5	5
P4KE47(c)A-G	40.2	44.7	49.4	1	40	64.8	6.5	5	5
P4KE51(c)-G	41.3	45.9	56.1	1	40	73.5	5.7	5	5
P4KE51(c)A-G	43.6	48.5	53.6	1	40	70.1	6.0	5	5

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	V <sub>WM</sub> (V)	V <sub>BR</sub> Min. (V)	M <sub>BR</sub> Max. (V)	I <sub>T</sub> (mA)	I <sub>FSM</sub> (A)@8.3mS	Max. V <sub>C</sub> @I <sub>PPM</sub>		Max. I <sub>D</sub> (μA)@V <sub>WM</sub>	
						(V)	I <sub>PPM</sub> (A)	UNI	BI
P4KE56(c)-G	45.4	50.4	61.6	1	40	80.5	5.2	5	5
P4KE56(c)A-G	47.8	53.2	58.8	1	40	77.0	5.5	5	5
P4KE62(c)-G	50.2	55.8	68.2	1	40	89.0	4.7	5	5
P4KE62(c)A-G	53.0	58.9	65.1	1	40	85.0	5.0	5	5
P4KE68(c)-G	55.1	61.2	74.8	1	40	98.0	4.3	5	5
P4KE68(c)A-G	58.1	61.6	71.4	1	40	92.0	4.6	5	5
P4KE75(c)-G	60.7	67.5	82.5	1	40	108.0	3.9	5	5
P4KE75(c)A-G	64.1	71.3	78.8	1	40	103.0	4.1	5	5
P4KE82(c)-G	66.4	73.8	90.2	1	40	118.0	3.6	5	5
P4KE82(c)A-G	70.1	77.9	86.1	1	40	113.0	3.7	5	5
P4KE91(c)-G	73.7	81.9	100.0	1	40	131.8	3.2	5	5
P4KE91(c)A-G	77.8	86.5	95.5	1	40	125.0	3.4	5	5
P4KE100(c)-G	81.0	90.0	110.0	1	40	144.0	2.9	5	5
P4KE100(c)A-G	85.5	95.0	105.0	1	40	137.0	3.1	5	5
P4KE110(c)-G	89.2	99.0	121.0	1	40	158.0	2.7	5	5
P4KE110(c)A-G	94.0	105.0	116.0	1	40	152.0	2.8	5	5
P4KE120(c)-G	97.2	108.0	132.0	1	40	173.0	2.4	5	5
P4KE120(c)A-G	102.0	114.0	126.0	1	40	165.0	2.5	5	5
P4KE130(c)-G	105.0	117.0	143.0	1	40	187.0	2.2	5	5
P4KE130(c)A-G	111.0	124.0	137.0	1	40	179.0	2.3	5	5
P4KE150(c)-G	121.0	135.0	165.0	1	40	215.0	2.0	5	5
P4KE150(c)A-G	128.0	143.0	158.0	1	40	207.0	2.0	5	5
P4KE160(c)-G	130.0	144.0	176.0	1	40	230.0	1.8	5	5
P4KE160(c)A-G	136.0	152.0	168.0	1	40	219.0	1.9	5	5
P4KE170(c)-G	138.0	153.0	187.0	1	40	244.0	1.7	5	5
P4KE170(c)A-G	145.0	162.0	179.0	1	40	234.0	1.8	5	5
P4KE180(c)-G	146.0	162.0	198.0	1	40	258.0	1.6	5	5
P4KE180(c)A-G	154.0	171.0	189.0	1	40	246.0	1.7	5	5
P4KE200(c)-G	162.0	180.0	220.0	1	40	287.0	1.5	5	5
P4KE200(c)A-G	171.0	190.0	210.0	1	40	274.0	1.53	5	5
P4KE220(c)-G	175.0	198.0	242.0	1	40	344.0	1.16	5	5
P4KE220(c)A-G	185.0	209.0	231.0	1	40	328.0	1.22	5	5
P4KE250(c)-G	202.0	225.0	275.0	1	40	360.0	1.11	5	5
P4KE250(c)A-G	214.0	237.0	263.0	1	40	344.0	1.16	5	5
P4KE300(c)-G	243.0	270.0	330.0	1	40	430.0	0.93	5	5
P4KE300(c)A-G	256.0	285.0	315.0	1	40	414.0	0.97	5	5
P4KE350(c)-G	284.0	315.0	385.0	1	40	504.0	0.79	5	5
P4KE350(c)A-G	300.0	332.0	368.0	1	40	482.0	0.83	5	5
P4KE400(c)-G	324.0	360.0	440.0	1	40	574.0	0.70	5	5
P4KE400(c)A-G	342.0	380.0	420.0	1	40	548.0	0.73	5	5
P4KE440(c)-G	356.0	396.0	484.0	1	40	630.0	0.64	5	5
P4KE440(c)A-G	378.0	418.0	462.0	1	40	600.0	0.67	5	5

1. V<sub>F</sub><3.5V @ I<sub>F</sub>=25A for P4KE6.8 thru P4KE200A, V<sub>F</sub><6.5V @ I<sub>F</sub>=25A for P4KE220 thru P4KE440A.
2. "C" suffix for Bi-Directional devices.
3. For the bidirection type having I<sub>FRM</sub> of 10 volts and less, the I<sub>R</sub> limit is doubled.

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## RATING AND CHARACTERISTIC CURVES (P4KE-G Series)

Fig.1 Pulse Derating Curve

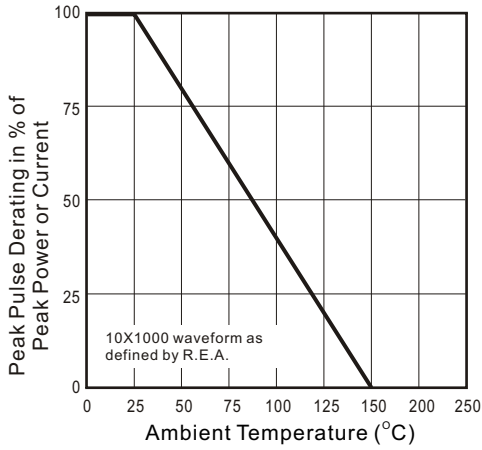


Fig.2 Typical Reverse Characteristics

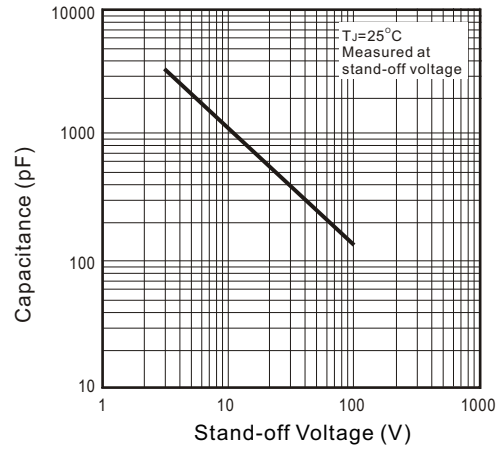


Fig.3 Pulse Rating Curve

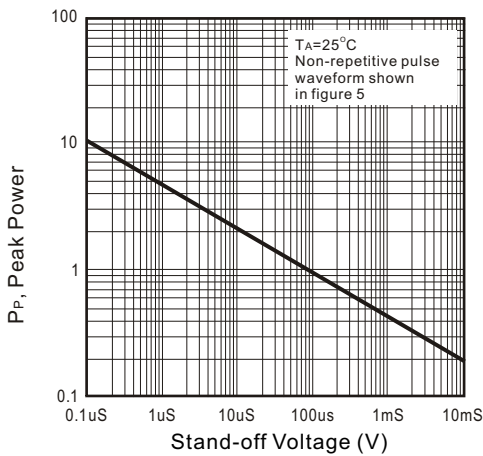


Fig.4 Steady State Power Derating Curve

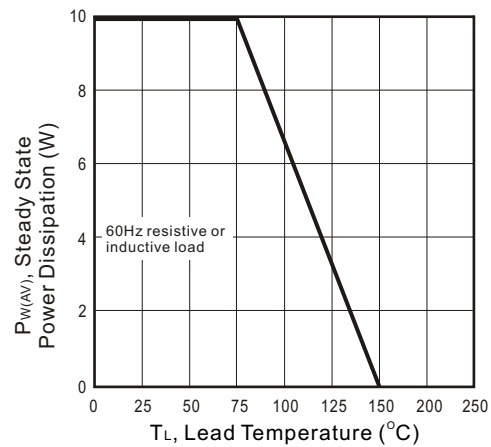


Fig.5 Pulse Waveform

