

# P4KE SERIES

**V<sub>BR</sub> : 6.8 - 550 Volts**  
**PPK : 400 Watts**

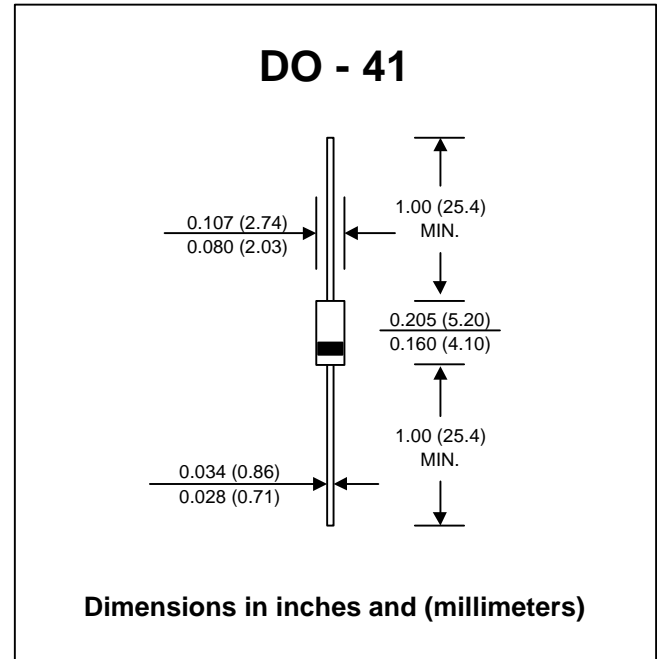
## FEATURES :

- \* 400W surge capability at 1ms
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time : typically less than 1.0 ps from 0 volt to V<sub>BR(min.)</sub>
- \* Typical I<sub>R</sub> less than 1μA above 10V

## MECHANICAL DATA

- \* Case : DO-41 Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity : Color band denotes cathode end except Bipolar.
- \* Mounting position : Any
- \* Weight : 0.339 gram

# TRANSIENT VOLTAGE SUPPRESSOR



## MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Power Dissipation at Ta = 25 °C, Tp=1ms (Note1)	PPK	Minimum 400	W
Steady State Power Dissipation at TL = 75 °C Lead Lengths 0.375", (9.5mm) (Note 2)	P <sub>D</sub>	1.0	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I <sub>FSM</sub>	40	A
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to + 175	°C

## Notes :

- (1) Non-repetitive Current pulse, per Fig. 5 and derated above Ta = 25 °C per Fig. 1
- (2) Mounted on Copper Leaf area of 1.57 in<sup>2</sup> (40mm<sup>2</sup>).
- (3) 8.3 ms single half sine-wave, duty cycle = 4 pulses per minutes maximum.



SYNSEMI SEMICONDUCTOR

## ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified

Type No.		Breakdown Voltage @ It ( Note 1 )			Working Peak Reverse Voltage	Maximum Reverse Leakage @ VRWM	Maximum Reverse Current	Maximum Clamping Voltage @ IRSM	Maximum Temperature Co-efficient of VBR
Uni-directional	Bi-directional	VBR (V)		It	VRWM	IR	IRSM	VRSM	of VBR (% /°C)
		Min.	Max.	(mA)	(V)	(µA)	(A)	(V)	
P4KE6.8A	P4KE6.8CA	6.45	7.14	10	5.80	1000	40.0	10.5	0.057
P4KE7.5A	P4KE7.5CA	7.13	7.88	10	6.40	500	37.0	11.3	0.061
P4KE8.2A	P4KE8.2CA	7.79	8.61	10	7.02	200	35.0	12.1	0.065
P4KE9.1A	P4KE9.1CA	8.65	9.55	1.0	7.78	50	31.0	13.4	0.068
P4KE10A	P4KE10CA	9.50	10.5	1.0	8.55	10	29.0	14.5	0.073
P4KE11A	P4KE11CA	10.5	11.6	1.0	9.40	5.0	27.0	15.6	0.075
P4KE12A	P4KE12CA	11.4	12.6	1.0	10.2	5.0	25.0	16.7	0.078
P4KE13A	P4KE13CA	12.4	13.7	1.0	11.1	5.0	23.0	18.2	0.081
P4KE15A	P4KE15CA	14.3	15.8	1.0	12.8	5.0	20.0	21.2	0.084
P4KE16A	P4KE16CA	15.2	16.8	1.0	13.6	5.0	19.0	22.5	0.086
P4KE17A	P4KE17CA	16.2	17.9	1.0	14.5	5.0	18.0	24.0	0.087
P4KE18A	P4KE18CA	17.1	18.9	1.0	15.3	5.0	17.0	25.5	0.088
P4KE20A	P4KE20CA	19.0	21.0	1.0	17.1	5.0	15.0	27.7	0.090
P4KE22A	P4KE22CA	20.9	23.1	1.0	18.8	5.0	14.0	30.6	0.092
P4KE24A	P4KE24CA	22.8	25.2	1.0	20.5	5.0	13.0	33.2	0.094
P4KE27A	P4KE27CA	25.7	28.4	1.0	23.1	5.0	11.2	37.5	0.096
P4KE30A	P4KE30CA	28.5	31.5	1.0	25.6	5.0	10.0	41.4	0.097
P4KE33A	P4KE33CA	31.4	34.7	1.0	28.2	5.0	9.0	45.7	0.098
P4KE36A	P4KE36CA	34.2	37.8	1.0	30.8	5.0	8.4	49.9	0.099
P4KE39A	P4KE39CA	37.1	41.0	1.0	33.3	5.0	7.8	53.9	0.100
P4KE43A	P4KE43CA	40.9	45.2	1.0	36.8	5.0	7.1	59.3	0.101
P4KE47A	P4KE47CA	44.7	49.4	1.0	40.2	5.0	6.5	64.8	0.101
P4KE51A	P4KE51CA	48.5	53.6	1.0	43.6	5.0	6.0	70.1	0.102
P4KE56A	P4KE56CA	53.2	58.8	1.0	47.8	5.0	5.5	77.0	0.103
P4KE62A	P4KE62CA	58.9	65.1	1.0	53.0	5.0	5.0	85.0	0.104
P4KE68A	P4KE68CA	64.6	71.4	1.0	58.1	5.0	4.6	92.0	0.104
P4KE75A	P4KE75CA	71.3	78.8	1.0	64.1	5.0	4.1	103	0.105
P4KE82A	P4KE82CA	77.9	86.1	1.0	70.1	5.0	3.7	113	0.105
P4KE91A	P4KE91CA	86.5	95.5	1.0	77.8	5.0	3.4	125	0.106
P4KE100A	P4KE100CA	95.0	105	1.0	85.5	5.0	3.1	137	0.106
P4KE110A	P4KE110CA	105	116	1.0	94.0	5.0	2.8	152	0.107
P4KE120A	P4KE120CA	114	126	1.0	102	5.0	2.5	165	0.107
P4KE130A	P4KE130CA	124	137	1.0	111	5.0	2.3	179	0.107
P4KE150A	P4KE150CA	143	158	1.0	128	5.0	2.0	207	0.108
P4KE160A	P4KE160CA	152	168	1.0	136	5.0	1.9	219	0.108
P4KE170A	P4KE170CA	162	179	1.0	145	5.0	1.8	234	0.108
P4KE180A	P4KE180CA	171	189	1.0	154	5.0	1.7	246	0.108
P4KE200A	P4KE200CA	190	210	1.0	171	5.0	1.53	274	0.108
P4KE220A	P4KE220CA	209	231	1.0	185	5.0	1.22	328	0.108
P4KE250A	P4KE250CA	237	263	1.0	214	5.0	1.16	344	0.110
P4KE300A	P4KE300CA	285	315	1.0	256	5.0	0.97	414	0.110
P4KE350A	P4KE350CA	332	368	1.0	300	5.0	0.83	482	0.110
P4KE400A	P4KE400CA	380	420	1.0	342	5.0	0.73	548	0.110
P4KE440A	P4KE440CA	418	462	1.0	376	5.0	1.00	602	0.110
P4KE550A	P4KE550CA	522	577	1.0	470	5.0	0.53	754	0.110

**Notes:**

- (1) VBR measured after It applied for 300 µs., It = square wave pulse or equivalent.
- (2) VF = 3.5 Vmax., IF = 25 Amps. ( 6.8 Volts thru 91Volts )  
VF = 5.0 Vmax., IF = 25 Amps. ( 100 Volts thru 550 Volts ) per 1/2 square or equivalent sine wave.  
PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.
- (3) For Bipolar types having Vr of 10 Volts and under, the Ir limit is doubled.
- (4) "4KE" will be omitted in marking on the diode.

## RATING AND CHARACTERISTIC CURVES ( P4KE SERIES )

FIG.1 - PULSE DERATING CURVE

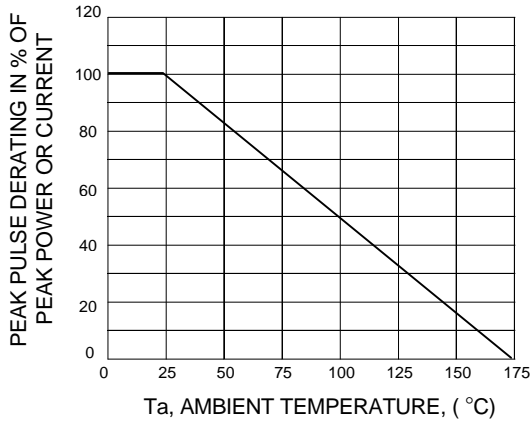


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

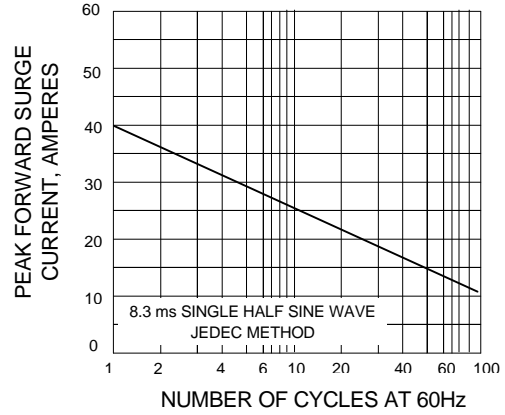


FIG.3 - STEADY STATE POWER DERATING

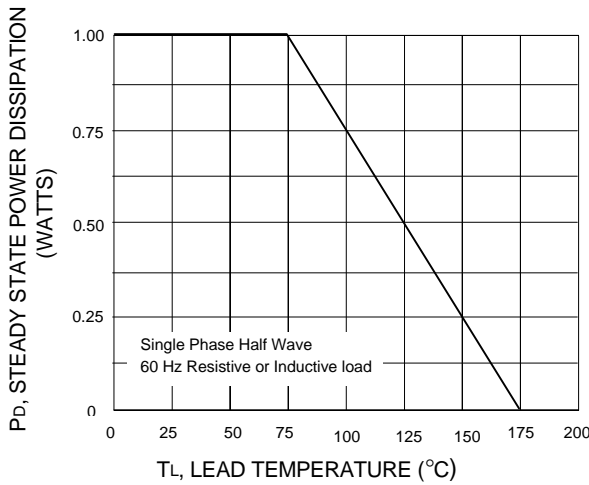


FIG.4 - PULSE RATING CURVE

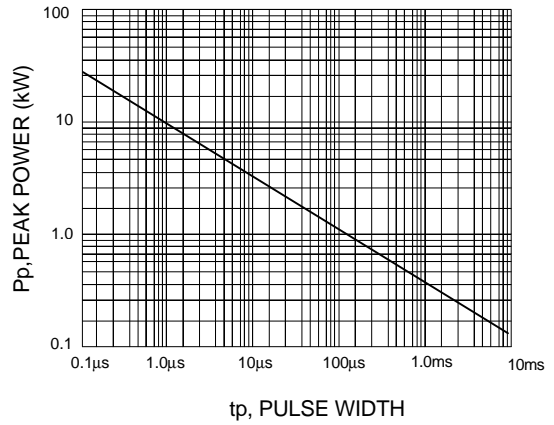


FIG.5 - PULSE WAVEFORM

