

# Silicon Avalanche Diodes

400W Axial Leaded Transient Voltage Suppressors

**NEW** **RoHS** **P4KE Series**



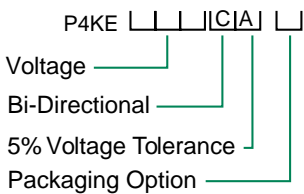
### FEATURES

- RoHS compliant
- Plastic package
- Glass passivated chip junction in DO-41 Package
- 400W surge capability at 10/1000  $\mu$ s wave form
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1.0ps from 0 Volts to BV min.
- Typical IR less than 1 $\mu$ A above 10V
- (9.5mm) lead length, 5lbs., (2.3kg) tension

**Agency Approvals:** Recognized under the Components Program of Underwriters Laboratories.

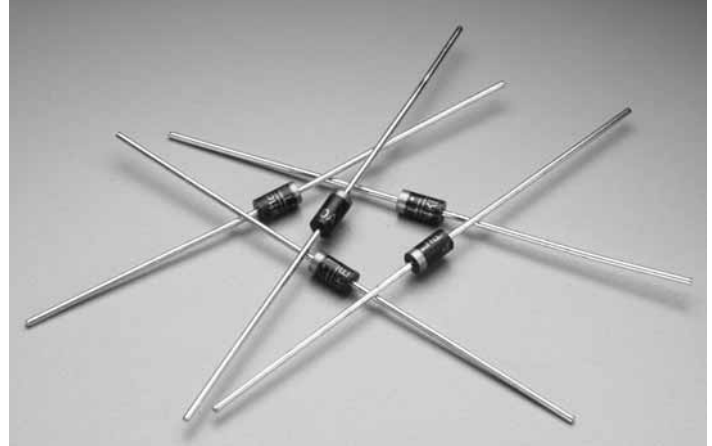
**Agency File Number:** E128662

### ORDERING INFORMATION



B= Bulk (500 pcs)

T= Tape and reeled (5000 pcs)



### MAXIMUM RATINGS AND CHARACTERISTICS

@25°C AMBIENT TEMPERATURE (unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Peak Pulse Power Dissipation at $T_A=25^\circ\text{C}$ , $T_P=1\text{ms}$ (note 1)	$P_{PPM}$	Min 400	Watts
Steady State Power Dissipation at $T_L=75^\circ\text{C}$ , Lead lengths .375" , (9.5mm)(note2)	$P_{M(AV)}$	1	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load, (JEDEC Method) (note 3)	$I_{FSM}$	40	Amps
Operating junction and Storage Temperature Range	$T_j, T_{sTG}$	-55 to +175	$^\circ\text{C}$

Notes:

1. Non-repetitive current pulse , per Fig. 3 and derated above  $T_A=25^\circ\text{C}$  per Fig 2.
2. 8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

#### Mechanical Specifications:

- Weight:** 0.012ounce, 0.3 gram
- Case:** JEDEC DO-41 Molded Plastic over passivated junction
- Mounting Position:** Any
- Polarity:** Color band denotes cathode except Bipolar
- Terminal:** Plated Axial leads, solderable per MIL-STD-750, Method 2026

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## 400W Axial Leaded Transient Voltage Suppressors

### RoHS P4KE Series



#### ELECTRICAL SPECIFICATION @ Tamb 25°C

Part Number (Uni)	Part Number (Bi)	Reverse Stand off Voltage Vrwm (Volts)	Breakdown Voltage VBR (Volts)		Test Current It (mA)	Maximum Clamping Voltage Vc @ Ipp (Volts)	Maximum Peak Pulse Current Ipp (A)	Maximum Reverse Leakage IR @ Vrwm (µA)
			MIN	MAX				
P4KE6.8A	P4KE6.8CA	5.80	6.45	7.14	10	10.5	39.00	1000
P4KE7.5A	P4KE7.5CA	6.40	7.13	7.88	10	11.3	36.30	500
P4KE8.2A	P4KE8.2CA	7.02	7.79	8.61	10	12.1	33.90	200
P4KE9.1A	P4KE9.1CA	7.78	8.65	9.55	1	13.4	30.60	50
P4KE10A	P4KE10CA	8.55	9.50	10.50	1	14.5	28.30	10
P4KE11A	P4KE11CA	9.40	10.50	11.60	1	15.6	26.30	5
P4KE12A	P4KE12CA	10.20	11.40	12.60	1	16.7	24.60	5
P4KE13A	P4KE13CA	11.10	12.40	13.70	1	18.2	22.50	5
P4KE15A	P4KE15CA	12.80	14.30	15.80	1	21.2	19.30	5
P4KE16A	P4KE16CA	13.60	15.20	16.80	1	22.5	18.20	5
P4KE18A	P4KE18CA	15.30	17.10	18.90	1	25.5	16.10	5
P4KE20A	P4KE20CA	17.10	19.00	21.00	1	27.7	14.80	5
P4KE22A	P4KE22CA	18.80	20.90	23.10	1	30.6	13.40	5
P4KE24A	P4KE24CA	20.50	22.80	25.20	1	33.2	12.30	5
P4KE27A	P4KE27CA	23.10	25.70	28.40	1	37.5	10.90	5
P4KE30A	P4KE30CA	25.60	28.50	31.50	1	41.4	9.90	5
P4KE33A	P4KE33CA	28.20	31.40	34.70	1	45.7	9.00	5
P4KE36A	P4KE36CA	30.80	34.20	37.80	1	49.9	8.20	5
P4KE39A	P4KE39CA	33.30	37.10	41.00	1	53.9	7.60	5
P4KE43A	P4KE43CA	36.80	40.90	45.20	1	59.3	6.90	5
P4KE47A	P4KE47CA	40.20	44.70	49.40	1	64.8	6.30	5
P4KE51A	P4KE51CA	43.60	48.50	53.60	1	70.1	5.80	5
P4KE56A	P4KE56CA	47.80	53.20	58.80	1	77.0	5.30	5
P4KE62A	P4KE62CA	53.00	58.90	65.10	1	85.0	4.80	5
P4KE68A	P4KE68CA	58.10	64.60	71.40	1	92.0	4.50	5
P4KE75A	P4KE75CA	64.10	71.30	78.80	1	103.0	4.00	5
P4KE82A	P4KE82CA	70.10	77.90	86.10	1	113.0	3.60	5
P4KE91A	P4KE91CA	77.80	86.50	95.50	1	125.0	3.30	5
P4KE100A	P4KE100CA	85.50	95.00	105.00	1	137.0	3.00	5
P4KE110A	P4KE110CA	94.00	105.00	116.00	1	152.0	2.70	5
P4KE120A	P4KE120CA	102.00	114.00	126.00	1	165.0	2.50	5
P4KE130A	P4KE130CA	111.00	124.00	137.00	1	179.0	2.30	5
P4KE150A	P4KE150CA	128.00	143.00	158.00	1	207.0	2.00	5
P4KE160A	P4KE160CA	136.00	152.00	168.00	1	219.0	1.90	5
P4KE170A	P4KE170CA	145.00	162.00	179.00	1	234.0	1.80	5
P4KE180A	P4KE180CA	154.00	171.00	189.00	1	246.0	1.70	5
P4KE200A	P4KE200CA	171.00	190.00	210.00	1	274.0	1.50	5
P4KE220A	P4KE220CA	185.00	209.00	231.00	1	328.0	1.30	5
P4KE250A	P4KE250CA	214.00	237.00	263.00	1	344.0	1.20	5
P4KE300A	P4KE300CA	256.00	285.00	315.00	1	414.0	1.00	5
P4KE350A	P4KE350CA	300.00	332.00	368.00	1	482.0	0.85	5
P4KE400A	P4KE400CA	342.00	380.00	420.00	1	548.0	0.75	5
P4KE440A	P4KE440CA	376.00	418.00	462.00	1	602.0	0.68	5
P4KE480A	P4KE480CA	408.00	456.00	504.00	1	658.0	0.61	5
P4KE510A	P4KE510CA	434.00	485.00	535.00	1	698.0	0.57	5
P4KE530A	P4KE530CA	450.00	503.50	556.50	1	725.0	0.55	5
P4KE540A	P4KE540CA	459.00	513.00	567.00	1	740.0	0.54	5
P4KE550A	P4KE550CA	467.00	522.50	577.50	1	760.0	0.52	5

For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.  
 For parts without A , the VBR is ± 10%

6 SILICON DIODE ARRAYS

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Ratings and Characteristic Curves  $T_A=25^\circ\text{C}$  unless otherwise noted

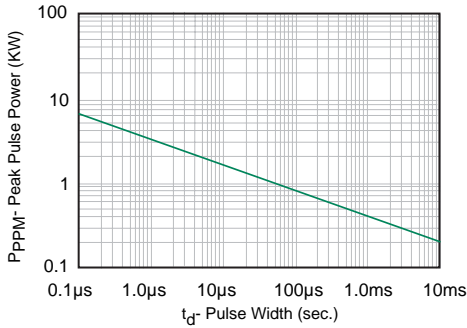


Fig. 1 Peak Pulse Power Rating

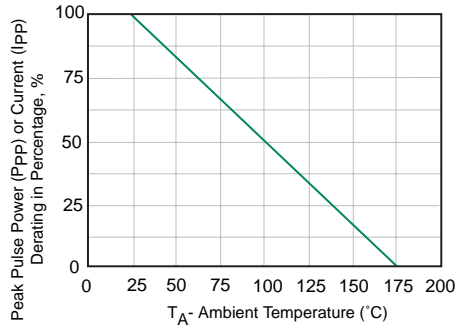


Fig. 2 Pulse Derating Curve

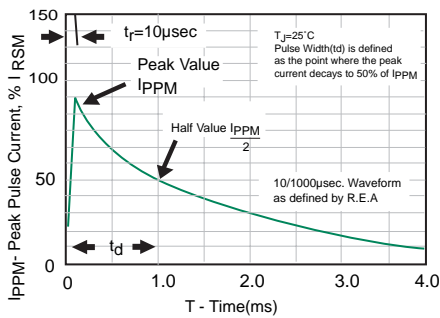


Fig. 3 Pulse Waveform

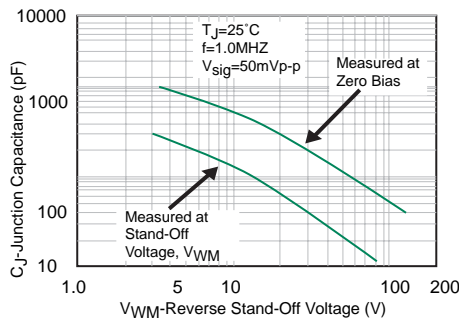


Fig. 4- Typ-Junction Capacitance Uni-Directional

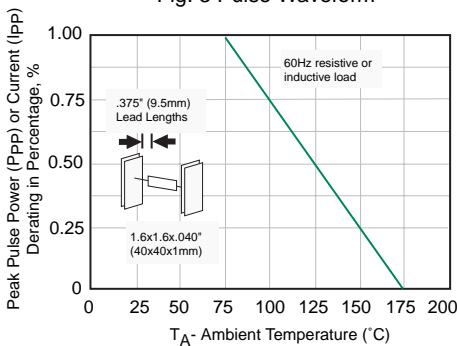


Fig. 5 steady Pulse Derating Curve

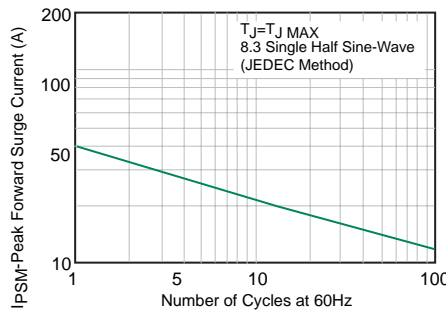


Fig. 6- Maximum Non-Repetitive Peak Forward Surge Uni-Directional Only

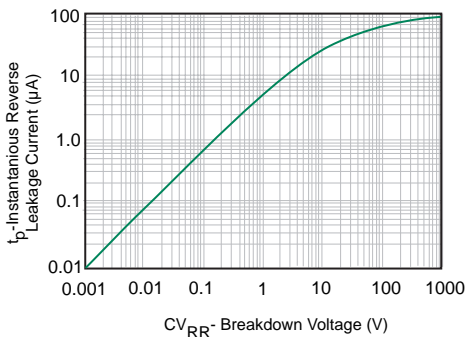


Fig. 7 - Typical Reverse Leakage Characteristics

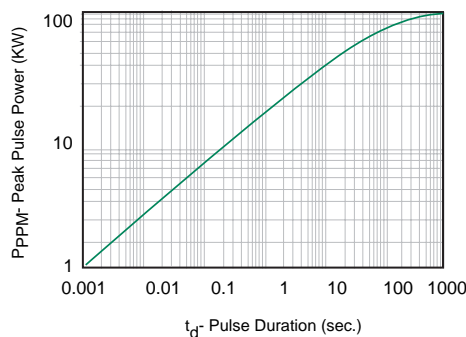


Fig. 8 Typ. Transient Thermal Impedance

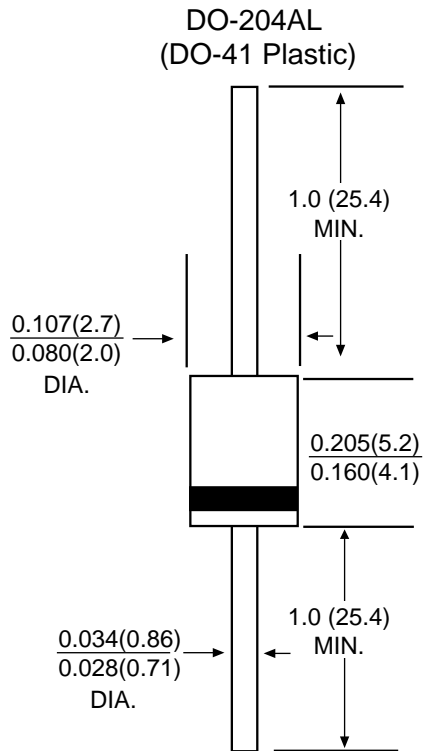
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**RoHS** P4KE Series



## Package Outline Dimensions



All dimensions in inches and (millimeters)

6  
SILICON DIODE  
ARRAYS