

Transient Voltage Suppressors

TVS Diodes - 400W > P4KE Series

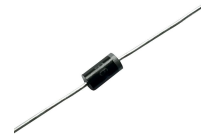


Description

The P4KE series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Features

- Low zener impedance
- Excellent clamping capability
- 400W peak pulse power capability at 10/1000 μ s waveform, repetition rate (duty cycle): 0.01%
- Fast response time
- Typical IR less than 1 μ A above 10V.
- Plastic package has underwriters laboratory flammability 94V-0
- Meets MSL level 1, per J-STD-020.



Package: DO-201AL / DO-41

Applications

- I/O interface
- AC/DC power supply
- Low frequency signal transmission line (RS232, RS485, etc.)

Electrical Characteristics

Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 10/1000 μ s waveform (Note1, Fig.1)	PPPM	400	W
Peak pulse current of at 10/1000 μ s waveform (Note 1, Fig.3)	IPPM	See Table	Amps
Steady state power dissipation at T _L =75 $^{\circ}$ C (Fig.5)	P _{M(AV)}	1.5	Watts
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note2, Fig.6)	I _{FSM}	40	Amps
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 to 175	$^{\circ}$ C
Typical Thermal Resistance Junction to Lead	R θ JL	60	$^{\circ}$ C/W
Typical Thermal Resistance Junction to Ambient	R θ JA	100	$^{\circ}$ C/W

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

Electrical Characteristics (TA=25°C)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V _{BR} (Volts)@I _T		Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
Unidirectional	Bidirectional	V _{RWM} (V)	Min	Max	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)
P4KE6.8A	P4KE6.8CA	5.80	6.45	7.14	10	10.5	38.1	1000
P4KE7.5A	P4KE7.5CA	6.40	7.13	7.88	10	11.3	35.4	500
P4KE8.2A	P4KE8.2CA	7.02	7.79	8.61	10	12.1	33.1	200
P4KE9.1A	P4KE9.1CA	7.78	8.65	9.55	1.0	13.4	29.9	50
P4KE10A	P4KE10CA	8.55	9.50	10.5	1.0	14.5	27.6	10
P4KE11A	P4KE11CA	9.40	10.5	11.6	1.0	15.6	25.6	5.0
P4KE12A	P4KE12CA	10.2	11.4	12.6	1.0	16.7	24.0	1.0
P4KE13A	P4KE13CA	11.1	12.4	13.7	1.0	18.2	22.0	1.0
P4KE15A	P4KE15CA	12.8	14.3	15.8	1.0	21.2	18.9	1.0
P4KE16A	P4KE16CA	13.6	15.2	16.8	1.0	22.5	17.8	1.0
P4KE18A	P4KE18CA	15.3	17.1	18.9	1.0	25.2	15.9	1.0
P4KE20A	P4KE20CA	17.1	19.0	21.0	1.0	27.7	14.4	1.0
P4KE22A	P4KE22CA	18.8	20.9	23.1	1.0	30.6	13.1	1.0
P4KE24A	P4KE24CA	20.5	22.8	25.2	1.0	33.2	12.0	1.0
P4KE27A	P4KE27CA	23.1	25.7	28.4	1.0	37.5	10.7	1.0
P4KE30A	P4KE30CA	25.6	28.5	31.5	1.0	41.4	9.7	1.0
P4KE33A	P4KE33CA	28.2	31.4	34.7	1.0	45.7	8.8	1.0
P4KE36A	P4KE36CA	30.8	34.2	37.8	1.0	49.9	8.0	1.0
P4KE39A	P4KE39CA	33.3	37.1	41.0	1.0	53.9	7.4	1.0
P4KE43A	P4KE43CA	36.8	40.9	45.2	1.0	59.3	6.7	1.0
P4KE47A	P4KE47CA	40.2	44.7	49.4	1.0	64.8	6.2	1.0
P4KE51A	P4KE51CA	43.6	48.5	53.6	1.0	70.1	5.7	1.0
P4KE56A	P4KE56CA	47.8	53.2	58.8	1.0	77.0	5.2	1.0
P4KE62A	P4KE62CA	53.0	58.9	65.1	1.0	85.0	4.7	1.0
P4KE68A	P4KE68CA	58.1	64.6	71.4	1.0	92.0	4.3	1.0

Electrical Characteristics (TA=25°C)

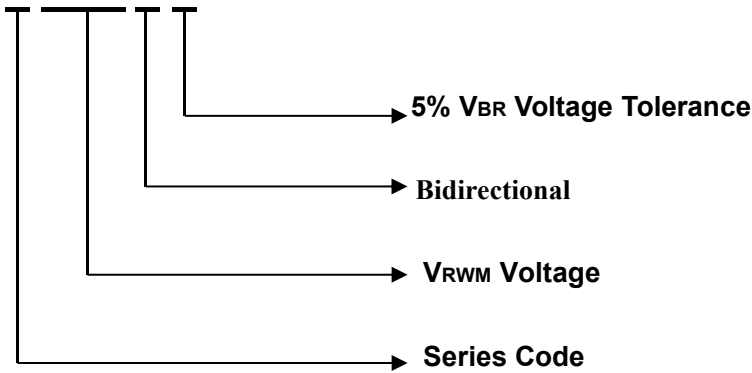
continued

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage $V_{BR}(Volts)@I_T$		Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse Leakage @ V_{RWM}
Unidirectional	Bidirectional	$V_{RWM}(V)$	Min	Max	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$
P4KE75A	P4KE75CA	64.1	71.3	78.8	1.0	103	3.9	1.0
P4KE82A	P4KE82CA	70.1	77.9	86.1	1.0	113	3.5	1.0
P4KE91A	P4KE91CA	77.8	86.5	95.5	1.0	125	3.2	1.0
P4KE100A	P4KE100CA	85.5	95.0	105	1.0	137	2.9	1.0
P4KE110A	P4KE110CA	94.0	105	116	1.0	152	2.6	1.0
P4KE120A	P4KE120CA	102	114	126	1.0	165	2.4	1.0
P4KE130A	P4KE130CA	111	124	137	1.0	179	2.2	1.0
P4KE150A	P4KE150CA	128	143	158	1.0	207	1.9	1.0
P4KE160A	P4KE160CA	136	152	168	1.0	219	1.8	1.0
P4KE170A	P4KE170CA	145	162	179	1.0	234	1.7	1.0
P4KE180A	P4KE180CA	154	171	189	1.0	246	1.6	1.0
P4KE200A	P4KE200CA	171	190	210	1.0	274	1.5	1.0
P4KE220A	P4KE220CA	185	209	231	1.0	328	1.2	1.0
P4KE250A	P4KE250CA	214	237	263	1.0	344	1.2	1.0
P4KE300A	P4KE300CA	256	285	315	1.0	414	1.0	1.0
P4KE350A	P4KE350CA	300	333	368	1.0	482	0.83	1.0
P4KE400A	P4KE400CA	342	380	420	1.0	548	0.73	1.0
P4KE440A	P4KE440CA	376	418	462	1.0	602	0.66	1.0
P4KE480A	P4KE480CA	408	456	504	1.0	658	0.61	1.0
P4KE510A	P4KE510CA	434	485	535	1.0	698	0.57	1.0
P4KE540A	P4KE540CA	459	513	567	1.0	740	0.54	1.0


Notes: For bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is double.

Description of Part Number

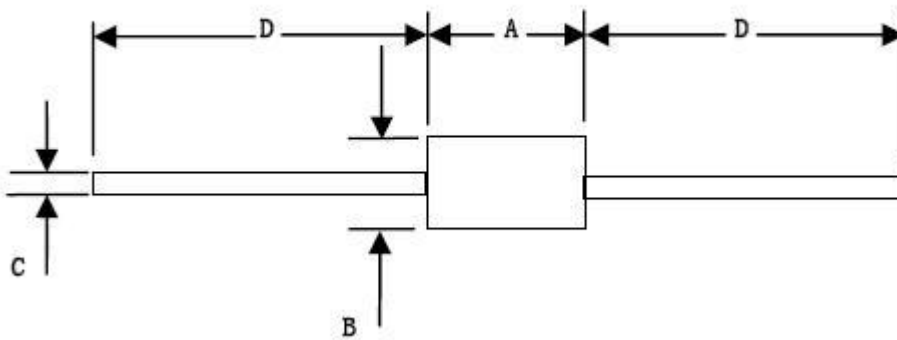
P4KE XXX C A



Packing Options

Package Type	Description	Packing Quantity	Industry Standard
DO-41 	Tape and Reel Pack	3000 PCS / 5000PCS	EIA STD RS-296E

Dimensions - DO-201AL / DO-41



Dimension	Inches		Millimeters		Note
	Min	Max	Min	Max	
A	0.160	0.205	4.10	5.20	
B	0.08	0.107	2.00	2.7	Φ
C	0.028	0.034	0.70	0.86	Φ
D	1.000		25.4		

Ratings and Characteristics Curve

Figure 1. Peak Pulse Power Rating Curve

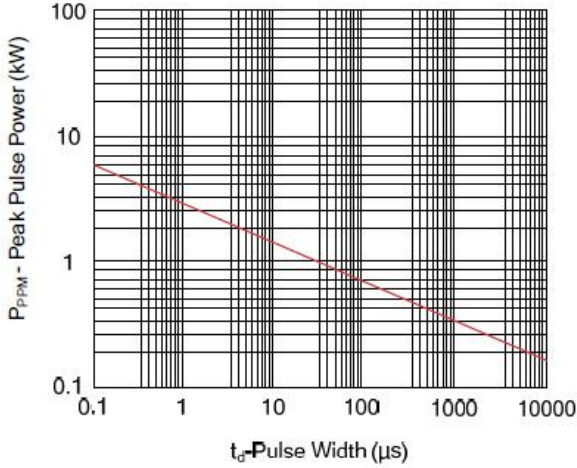


Figure 2. Pulse Derating Curve

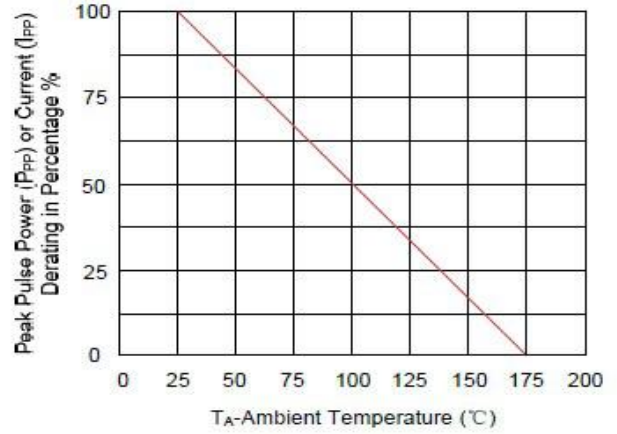


Figure 3. Pulse Waveform

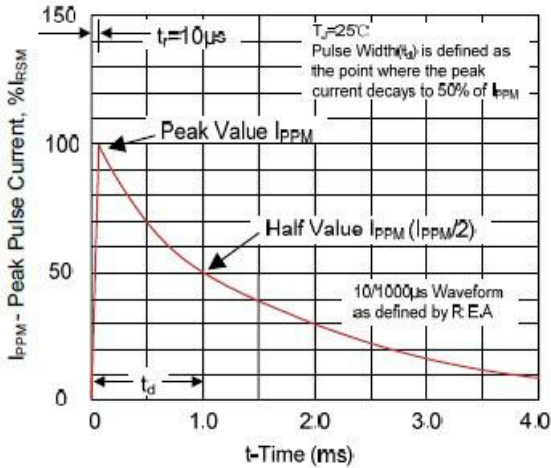


Figure 4. Typical Junction Capacitance

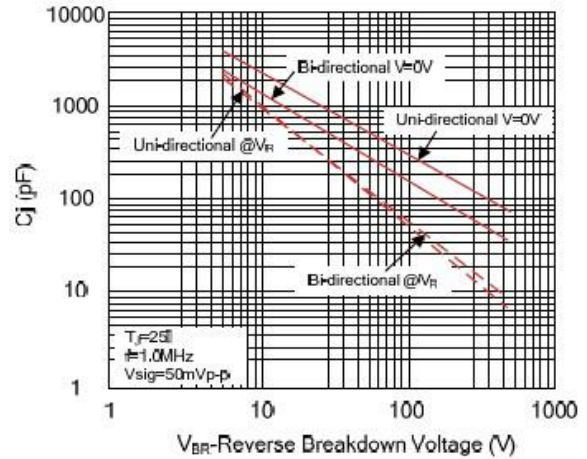


Figure 5. Steady State Power Dissipation Derating Curve

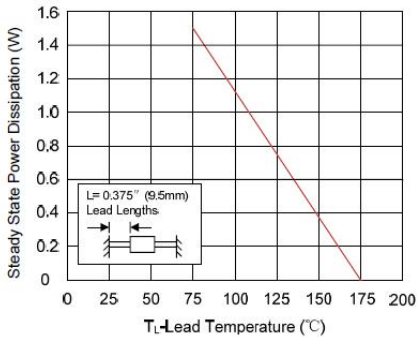
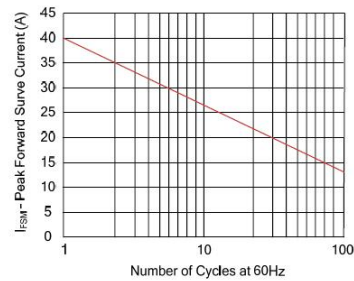


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



sales@huaandz.com