HITANO
ENTERPRISE CORP. ®

Data Sheet

Customer:

Product: Transient Voltage Suppressors 400W – P4KE Series

Package : DO-41

Issued Date: 10-Feb.-2015

Edition: Ver. 1

Record of change

Date	Ver.	Description	Page
10-Feb.-2015	1		

HITANO ENTERPRISE CORP.
7F-7, No. 3, Wu Chuan 1st Road, New Taipei Industrial Park,
New Taipei City, TAIWAN, R.O.C.
Tel: +886 2 2299 1331 (Rep.)
Fax: +886 2 2298 2466, 2298 2969

Prepared by	Checked by	Approved by	Accepted by (customer)
10-Feb.-2015	10-Feb.-2015	10-Feb.-2015	
Andy Hsu	***Hwa Wu***	***Hwa Wu***	

HITANO
ENTERPRISE CORP. ®

P4KE6.8(C)A THRU P4KE540(C)A

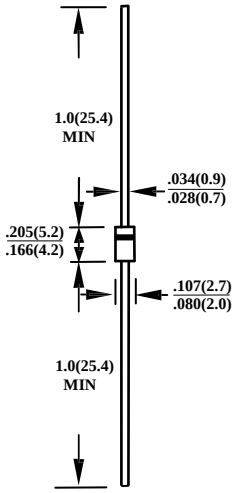
400W TRANSIENT VOLTAGE SUPPRESSOR

FEATURES

- PLASTIC PACKAGE HAS UNDERWRITERS LABORATORY. FLAMMABILITY CLASSIFICATION 94V-0.
- 400W 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℃/10S /.375″ (9.5mm) LEAD LENGTH/5LBS., (2.3KG) TENSION.
- ROHS AND REACH COMPLIANT

MECHANICAL DATA

- CASE：MOLDED PLASTIC
- TERMINALS：AXIAL LEADS, SOLDERABLE PER MIL-STD-202, METHOD 208
- POLARITY：COLOR BAND DENOTED CATHODE EXCEPT BIPOLAR
- WEIGHT：0.34 GRAMS



CASE：DO41
DIMENSIONS IN INCHES AND (MILLIMETERS)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED

RATINGS	SYMBOL	VALUE	UNITS
PEAK POWER DISSIPATION AT TA=25℃, TP=1ms(NOTE1)	P_{PK}	MINIMUM 400	WATTS
PEAK PULSE CURRENT WITH A 10/1000us WAVEFORM(NOTE 1)	I_{PPM}	SEE NEXT TABLE	A
STEADY STATE POWER DISSIPATION AT T_L=75℃, LEAD LENGTHS 0.375” (9.5mm) (NOTE2)	$P_{M(AV)}$	1.0	WATTS
TYPICAL THERMAL RESISTANCE JUNCTUION-TO-AMBIENT	$R_{\theta JA}$	100	℃/W
OPERATING AND STORAGE TEMPERATURE RANGE	T_J,T_{STG}	- 55 TO + 175	℃

NOTE： 1. NON-REPETITIVE CURRENT PULSE, PER FIG.3 AND DERATED ABOVE TA=25℃ PER FIG 2.
2. MOUNTED ON COPPER PAD AREA OF 1.6×1.6” (40×40mm) PER FIG. 5
3. 8.3ms SINGLE HALF SINE-WAVE, DUTY CYCLE=4 PULSES PER MINUTES MAXIMUM
4. FOR BIDIRECTIONAL USE C SUFFIX FOR 10% TOLERANCE, CA SUFFIX FOR 5% TOLERANCE

Part Number (Uni)	Part Number (Bi)	BREAKDOWN VOLTAGE			WORKING PEAK REVERSE VOLTAGE V_{RWM}(VOLTS)	MAXIMUM REVERSE LEAKAGE AT V_{RWM} IR(μA)		MAXIMUM REVERSE CURRENT I_{RSM} (AMPS)	MAX CLAMPING VOLTAGE V_{RWM} (VOLTS)	MAXIMUM TEMPERATURE COEFICIENT OF V_{BR} (%C)
		V_{BR}(VOLTS)		@IT (mA)						
		MIN	MAX			UNI	BI			
P4KE6.8	P4KE6.8C	6.12	7.48	10	5.50	1000	2000	38	10.8	0.057
P4KE6.8A	P4KE6.8CA	6.45	7.14	10	5.80	1000	2000	40	10.5	0.057
P4KE7.5	P4KE7.5C	6.75	8.25	10	6.05	500	1000	36	11.7	0.061
P4KE7.5A	P4KE7.5CA	7.13	7.88	10	6.40	500	1000	37	11.3	0.061
P4KE8.2	P4KE8.2C	7.38	9.02	10	6.63	200	400	33	12.5	0.065
P4KE8.2A	P4KE8.2CA	7.79	8.61	10	7.02	200	400	35	12.1	0.065
P4KE9.1	P4KE9.1C	8.19	10.0	1.0	7.37	50	100	30	13.8	0.068
P4KE9.1A	P4KE9.1CA	8.65	9.55	1.0	7.78	50	100	31	13.4	0.068
P4KE10	P4KE10C	9.00	11.0	1.0	8.10	10	20	28	15.0	0.073
P4KE10A	P4KE10CA	9.50	10.5	1.0	8.55	10	20	29	14.5	0.073
P4KE11	P4KE11C	9.90	12.1	1.0	8.92	5.0	5.0	26	16.2	0.075
P4KE11A	P4KE11CA	10.5	11.6	1.0	9.40	5.0	5.0	27	15.6	0.076
P4KE12	P4KE12C	10.8	13.2	1.0	9.72	5.0	5.0	24	17.3	0.078
P4KE12A	P4KE12CA	11.4	12.6	1.0	10.2	5.0	5.0	25	16.7	0.078
P4KE13	P4KE13C	11.7	14.3	1.0	10.5	5.0	5.0	22	19.0	0.081
P4KE13A	P4KE13CA	12.4	13.7	1.0	11.1	5.0	5.0	23	18.2	0.081
P4KE15	P4KE15C	13.5	16.5	1.0	12.1	5.0	5.0	19	22.0	0.084
P4KE15A	P4KE15CA	14.3	15.8	1.0	12.8	5.0	5.0	20	21.2	0.084
P4KE16	P4KE16C	14.4	17.6	1.0	12.9	5.0	5.0	18	23.5	0.086
P4KE16A	P4KE16CA	15.2	16.8	1.0	13.6	5.0	5.0	19	22.5	0.086
P4KE18	P4KE18C	16.2	19.8	1.0	14.5	5.0	5.0	16	26.5	0.088
P4KE18A	P4KE18CA	17.1	18.9	1.0	15.3	5.0	5.0	17	25.5	0.088
P4KE20	P4KE20C	18.0	22.0	1.0	16.2	5.0	5.0	14	29.1	0.090
P4KE20A	P4KE20CA	19.0	21.0	1.0	17.1	5.0	5.0	15	27.7	0.090
P4KE22	P4KE22C	19.8	24.2	1.0	17.8	5.0	5.0	13	31.9	0.092
P4KE22A	P4KE22CA	20.9	23.1	1.0	18.8	5.0	5.0	14	30.6	0.092
P4KE24	P4KE24C	21.6	26.4	1.0	19.4	5.0	5.0	12	34.7	0.094
P4KE24A	P4KE24CA	22.8	25.2	1.0	20.5	5.0	5.0	13	33.2	0.094
P4KE27	P4KE27C	24.3	29.7	1.0	21.8	5.0	5.0	11	39.1	0.096
P4KE27A	P4KE27CA	25.7	28.4	1.0	23.1	5.0	5.0	11.2	37.5	0.096
P4KE30	P4KE30C	27.0	33.0	1.0	24.3	5.0	5.0	10	43.5	0.097
P4KE30A	P4KE30CA	28.5	31.5	1.0	25.6	5.0	5.0	10	41.4	0.097
P4KE33	P4KE33C	29.7	36.3	1.0	26.8	5.0	5.0	9	47.7	0.098
P4KE33A	P4KE33CA	31.4	34.7	1.0	28.2	5.0	5.0	9	45.7	0.098
P4KE36	P4KE36C	32.4	39.6	1.0	29.1	5.0	5.0	8	52.0	0.099
P4KE36A	P4KE36CA	34.2	37.8	1.0	30.8	5.0	5.0	8.4	49.9	0.099
P4KE39	P4KE39C	35.1	42.9	1.0	31.6	5.0	5.0	7.4	56.4	0.100
P4KE39A	P4KE39CA	37.1	41.0	1.0	33.3	5.0	5.0	7.8	53.9	0.100
P4KE43	P4KE43C	38.7	47.3	1.0	34.8	5.0	5.0	6.8	61.9	0.101
P4KE43A	P4KE43CA	40.9	45.2	1.0	36.8	5.0	5.0	7.1	59.3	0.101
P4KE47	P4KE47C	42.3	51.7	1.0	38.1	5.0	5.0	6.2	67.8	0.101
P4KE47A	P4KE47CA	44.7	49.4	1.0	40.2	5.0	5.0	6.5	64.8	0.101
P4KE51	P4KE51C	45.9	56.1	1.0	41.3	5.0	5.0	5.7	73.5	0.102
P4KE51A	P4KE51CA	48.5	53.6	1.0	43.6	5.0	5.0	6.0	70.1	0.102
P4KE56	P4KE56C	50.4	61.6	1.0	45.4	5.0	5.0	5.2	80.5	0.103
P4KE56A	P4KE56CA	53.2	58.8	1.0	47.8	5.0	5.0	5.5	77.0	0.103
P4KE62	P4KE62C	55.8	68.2	1.0	50.2	5.0	5.0	4.7	89.0	0.104
P4KE62A	P4KE62CA	58.9	65.1	1.0	53.0	5.0	5.0	5.0	85.0	0.104
P4KE68	P4KE68C	61.2	74.8	1.0	55.1	5.0	5.0	4.3	98.0	0.104
P4KE68A	P4KE68CA	64.6	71.4	1.0	58.1	5.0	5.0	4.6	92.0	0.104
P4KE75	P4KE75C	67.5	82.5	1.0	60.7	5.0	5.0	3.9	108.0	0.105
P4KE75A	P4KE75CA	71.3	78.8	1.0	64.1	5.0	5.0	4.1	103.0	0.105
P4KE82	P4KE82C	73.8	90.2	1.0	66.4	5.0	5.0	3.6	118.0	0.105
P4KE82A	P4KE82CA	77.9	86.1	1.0	70.1	5.0	5.0	3.7	113.0	0.105
P4KE91	P4KE91C	81.9	100.0	1.0	73.7	5.0	5.0	3.2	131.8	0.106
P4KE91A	P4KE91CA	86.5	95.50	1.0	77.8	5.0	5.0	3.4	125.0	0.106
P4KE100	P4KE100C	90.0	110.0	1.0	81.0	5.0	5.0	2.9	144.0	0.106
P4KE100A	P4KE100CA	95.0	105.0	1.0	85.5	5.0	5.0	3.1	137.0	0.106

Part Number (Uni)	Part Number (Bi)	BREAKDOWN VOLTAGE			WORKING PEAK REVERSE VOLTAGE V_{RWM}(VOLTS)	MAXIMUM REVERSE LEAKAGE AT V_{RWM} IR(μA)		MAXIMUM REVERSE CURRENT I_{RSM} (AMPS)	MAX CLAMPING VOLTAGE V_{RWM} (VOLTS)	MAXIMUM TEMPERATURE COEFICIENT OF V_{RR} (%C)
		V_{BR}(VOLTS)		@IT (mA)						
		MIN	MAX			UNI	BI			
P4KE110	P4KE110C	99.0	121.0	1.0	89.2	5.0	5.0	2.7	158.0	0.107
P4KE110A	P4KE110CA	105.0	116.0	1.0	94.0	5.0	5.0	2.8	152.0	0.107
P4KE120	P4KE120C	108.0	132.0	1.0	97.2	5.0	5.0	2.4	173.0	0.107
P4KE120A	P4KE120CA	114.0	126.0	1.0	102.0	5.0	5.0	2.5	165.0	0.107
P4KE130	P4KE130C	117.0	143.0	1.0	105.0	5.0	5.0	2.2	187.0	0.107
P4KE130A	P4KE130CA	124.0	137.0	1.0	111.0	5.0	5.0	2.3	179.0	0.107
P4KE150	P4KE150C	135.0	165.0	1.0	121.0	5.0	5.0	2.0	215.0	0.108
P4KE150A	P4KE150CA	143.0	158.0	1.0	128.0	5.0	5.0	2.0	207.0	0.108
P4KE160	P4KE160C	144.0	176.0	1.0	130.0	5.0	5.0	1.8	230.0	0.108
P4KE160A	P4KE160CA	152.0	168.0	1.0	136.0	5.0	5.0	1.9	219.0	0.108
P4KE170	P4KE170C	153.0	187.0	1.0	138.0	5.0	5.0	1.7	244.0	0.108
P4KE170A	P4KE170CA	162.0	179.0	1.0	145.0	5.0	5.0	1.8	234.0	0.108
P4KE180	P4KE180C	162.0	198.0	1.0	146.0	5.0	5.0	1.6	258.0	0.108
P4KE180A	P4KE180CA	171.0	189.0	1.0	154.0	5.0	5.0	1.7	246.0	0.108
P4KE200	P4KE200C	180.0	220.0	1.0	162.0	5.0	5.0	1.5	287.0	0.108
P4KE200A	P4KE200CA	190.0	210.0	1.0	171.0	5.0	5.0	1.53	274.0	0.108
P4KE220	P4KE220C	198.0	242.0	1.0	175.0	5.0	5.0	1.16	344.0	0.108
P4KE220A	P4KE220CA	209.0	231.0	1.0	185.0	5.0	5.0	1.22	328.0	0.108
P4KE250	P4KE250C	225.0	275.0	1.0	202.0	5.0	5.0	1.11	360.0	0.110
P4KE250A	P4KE250CA	237.0	263.0	1.0	214.0	5.0	5.0	1.16	344.0	0.110
P4KE300	P4KE300C	270.0	330.0	1.0	243.0	5.0	5.0	0.93	430.0	0.110
P4KE300A	P4KE300CA	285.0	315.0	1.0	256.0	5.0	5.0	0.97	414.0	0.110
P4KE350	P4KE350C	315.0	385.0	1.0	284.0	5.0	5.0	0.79	504.0	0.110
P4KE350A	P4KE350CA	332.0	368.0	1.0	300.0	5.0	5.0	0.83	482.0	0.110
P4KE400	P4KE400C	360.0	440.0	1.0	324.0	5.0	5.0	0.70	574.0	0.110
P4KE400A	P4KE400CA	380.0	420.0	1.0	342.0	5.0	5.0	0.73	548.0	0.110
P4KE440	P4KE440C	396.0	484.0	1.0	356.0	5.0	5.0	0.64	630.0	0.110
P4KE440A	P4KE440CA	418.0	462.0	1.0	376.0	5.0	5.0	0.67	600.0	0.110
P4KE480	P4KE480C	432.0	528.0	1.0	389.0	5.0	5.0	0.58	686.0	0.110
P4KE480A	P4KE480CA	456.0	504.0	1.0	408.0	5.0	5.0	0.61	658.0	0.110
P4KE510	P4KE510C	459.0	561.0	1.0	413.0	5.0	5.0	0.55	729.0	0.110
P4KE510A	P4KE510CA	485.0	535.0	1.0	434.0	5.0	5.0	0.57	698.0	0.110
P4KE540	P4KE540C	486.0	594.0	1.0	437.0	5.0	5.0	0.52	772.0	0.110
P4KE540A	P4KE540CA	513.0	567.0	1.0	459.0	5.0	5.0	0.54	740.0	0.110

NOTES： 1. V_{BR} MEASURED AFTER I_T APPLIED FOR 300 μS,I_T=SQUARE WAVE PULSE OR EQUIVALENT

2. SURGE CURRENT WAVEFORM PER FIGURE 3 AND DERATED PER FIGUE 2.

3. FOR BIPOLAR TYPES HAVING V_{RWM} OF 10 VOLTS AND UNDER, THE I_R LIMIT IS DOUBLED

RATINGS AND CHARACTERISTIC CURVES P4KE6.8(C)A THRU P4KE540(C)A

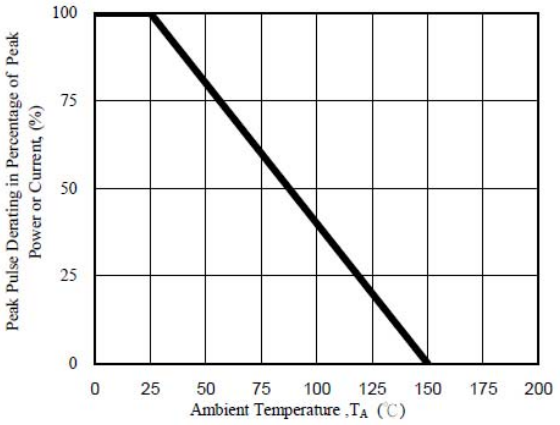


Fig. 1 - Pulse Derating Curve

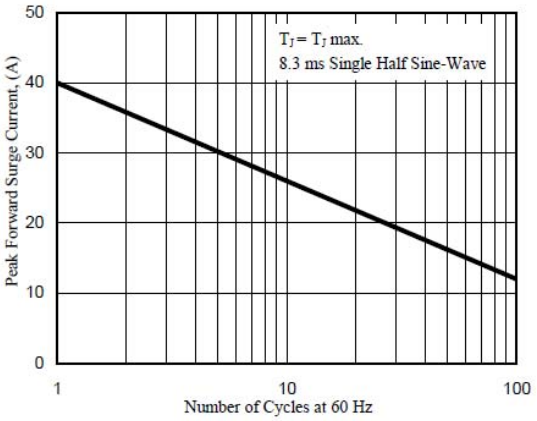


Fig. 2 - Maximum Non-Repetitive Surge Current

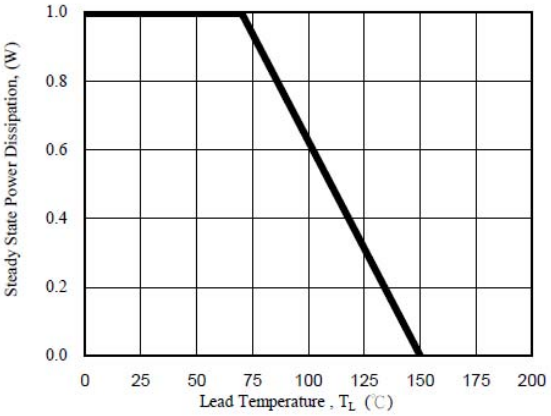


Fig. 3 - Steady State Power Derating Curve

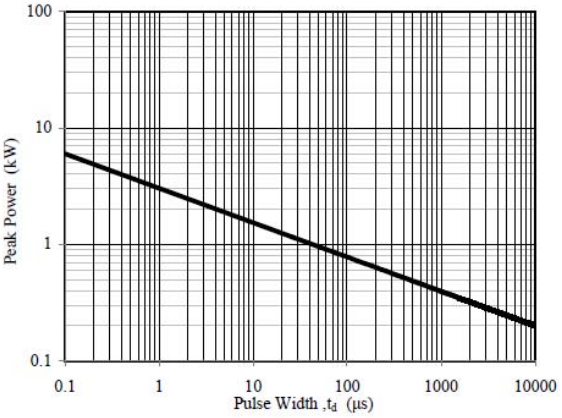


Fig. 4 - Peak Pulse Power Rating Curve

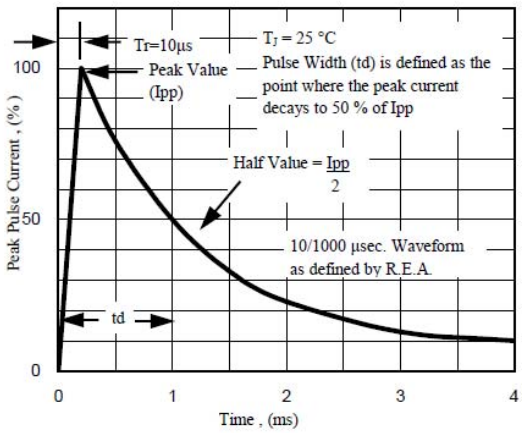


Fig. 5 - Pulse Waveform

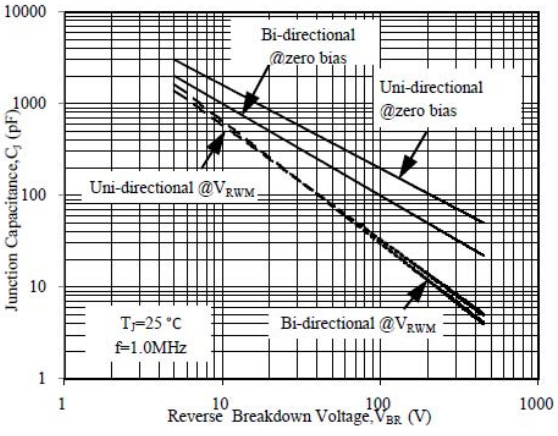


Fig. 6 - Typical Junction Capacitance