Data Sheet

Customer:

Product: Transient Voltage Suppressors 600W – P6KE Series

Package : DO-15

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. ®

P6KE6.8(C) THRU P6KE540(C)A

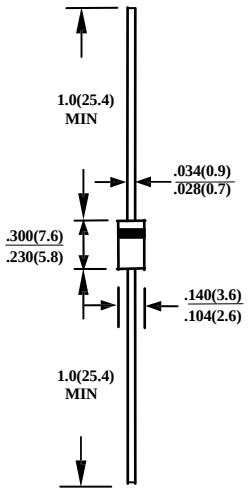
600W TRANSIENT VOLTAGE SUPPRESSOR

FEATURES

- PLASTIC PACKAGE HAS UNDERWRITERS LABORATORY FLAMMABILITY CLASSIFICATION 94V-0.
- 600W PEAK PULSE POWER CAPABILITY WITH A 10/1000 μs WAVEFORM , REPRTITIVE RATE(DUTY CYCLE) : 0.01%.
- 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 & REACH COMPLIANT

MECHANICAL DATA

- CASE：MOLDED PLASTIC.
- TERMINALS：AXIAL LEADS, SOLDERABLE PER MIL-STD-202, METHOD 208.
- POLARITY：COLOR BAND DENOTED CATHODE END EXCEPT BIPOLAR.
- WEIGHT：0.4 GRAMS.



CASE：DO-15

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(NOTE 1)	P_{PP}	600	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)	$P_{M(AV)}$	5.0	WATTS
OPERATING AND STORAGE TEMPERATURE RANGE	T_J,T_{STG}	- 55 TO + 150	℃

NOTE： 1. NON-REPETITIVE CURRENT PULSE, PER FIG.5 AND DERATED ABOVE TA=25℃ PER FIG 1.
2. 8.3ms SINGLE HALF SINE-WAVE, DUTY CYCLE=4 PULSES PER MINUTES MAXIMUM.

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 COEFFICIENT OF V_{BR} (%C)
		V_{BR}(VOLTS)		@IT (mA)						
		MIN	MAX			UNI	BI			
P6KE6.8	P6KE6.8C	6.12	7.48	10	5.50	1000	2000	56	10.8	0.057
P6KE6.8A	P6KE6.8CA	6.45	7.14	10	5.80	1000	2000	57	10.5	0.057
P6KE7.5	P6KE7.5C	6.75	8.25	10	6.05	500	1000	51	11.7	0.061
P6KE7.5A	P6KE7.5CA	7.13	7.88	10	6.40	500	1000	53	11.3	0.061
P6KE8.2	P6KE8.2C	7.38	9.02	10	6.63	200	400	48	12.5	0.065
P6KE8.2A	P6KE8.2CA	7.79	8.61	10	7.02	200	400	50	12.1	0.065
P6KE9.1	P6KE9.1C	8.19	10.0	1.0	7.37	50	100	44	13.8	0.068
P6KE9.1A	P6KE9.1CA	8.65	9.55	1.0	7.78	50	100	45	13.4	0.068
P6KE10	P6KE10C	9.00	11.0	1.0	8.10	10	20	40	15.0	0.073
P6KE10A	P6KE10CA	9.50	10.5	1.0	8.55	10	20	41	14.5	0.073
P6KE11	P6KE11C	9.90	12.1	1.0	8.92	5.0	5.0	37	16.2	0.075
P6KE11A	P6KE11CA	10.5	11.6	1.0	9.40	5.0	5.0	38	15.6	0.075
P6KE12	P6KE12C	10.8	13.2	1.0	9.72	5.0	5.0	35	17.3	0.078
P6KE12A	P6KE12CA	11.4	12.6	1.0	10.2	5.0	5.0	36	16.7	0.078
P6KE13	P6KE13C	11.7	14.3	1.0	10.5	5.0	5.0	32	19.0	0.081
P6KE13A	P6KE13CA	12.4	13.7	1.0	11.1	5.0	5.0	33	18.2	0.081
P6KE15	P6KE15C	13.5	16.5	1.0	12.1	5.0	5.0	27	22.0	0.084
P6KE15A	P6KE15CA	14.3	15.8	1.0	12.8	5.0	5.0	28	21.2	0.084
P6KE16	P6KE16C	14.4	17.6	1.0	12.9	5.0	5.0	26	23.5	0.086
P6KE16A	P6KE16CA	15.2	16.8	1.0	13.6	5.0	5.0	27	22.5	0.086
P6KE18	P6KE18C	16.2	19.8	1.0	14.5	5.0	5.0	23	26.5	0.088
P6KE18A	P6KE18CA	17.1	18.9	1.0	15.3	5.0	5.0	24	25.2	0.088
P6KE20	P6KE20C	18.0	22.0	1.0	16.2	5.0	5.0	21	29.1	0.090
P6KE20A	P6KE20CA	19.0	21.0	1.0	17.1	5.0	5.0	22	27.7	0.090
P6KE22	P6KE22C	19.8	24.2	1.0	17.8	5.0	5.0	19	31.9	0.092
P6KE22A	P6KE22CA	20.9	23.1	1.0	18.8	5.0	5.0	20	30.6	0.092
P6KE24	P6KE24C	21.6	26.4	1.0	19.4	5.0	5.0	17	34.7	0.094
P6KE24A	P6KE24CA	22.8	25.2	1.0	20.5	5.0	5.0	18	33.2	0.094
P6KE27	P6KE27C	24.3	29.7	1.0	21.8	5.0	5.0	15	39.1	0.096
P6KE27A	P6KE27CA	25.7	28.4	1.0	23.1	5.0	5.0	16	37.5	0.096
P6KE30	P6KE30C	27.0	33.0	1.0	24.3	5.0	5.0	14	43.5	0.097
P6KE30A	P6KE30CA	28.5	31.5	1.0	25.6	5.0	5.0	14.4	41.4	0.097
P6KE33	P6KE33C	29.7	36.3	1.0	26.8	5.0	5.0	12.6	47.7	0.098
P6KE33A	P6KE33CA	31.4	34.7	1.0	28.2	5.0	5.0	13.2	45.7	0.098
P6KE36	P6KE36C	32.4	39.6	1.0	29.1	5.0	5.0	11.6	52.0	0.099
P6KE36A	P6KE36CA	34.2	37.8	1.0	30.8	5.0	5.0	12.0	49.9	0.099
P6KE39	P6KE39C	35.1	42.9	1.0	31.6	5.0	5.0	10.6	56.4	0.100
P6KE39A	P6KE39CA	37.1	41.0	1.0	33.3	5.0	5.0	11.2	53.9	0.100
P6KE43	P6KE43C	38.7	47.3	1.0	34.8	5.0	5.0	9.6	61.9	0.101
P6KE43A	P6KE43CA	40.9	45.2	1.0	36.8	5.0	5.0	10.1	59.3	0.101
P6KE47	P6KE47C	42.3	51.7	1.0	38.1	5.0	5.0	8.9	67.8	0.101
P6KE47A	P6KE47CA	44.7	49.4	1.0	40.2	5.0	5.0	9.3	64.8	0.101
P6KE51	P6KE51C	45.9	56.1	1.0	41.3	5.0	5.0	8.2	73.5	0.102
P6KE51A	P6KE51CA	48.5	53.6	1.0	43.6	5.0	5.0	8.6	70.1	0.102
P6KE56	P6KE56C	50.4	61.6	1.0	45.4	5.0	5.0	7.4	80.5	0.103
P6KE56A	P6KE56CA	53.2	58.8	1.0	47.8	5.0	5.0	7.8	77.0	0.103
P6KE62	P6KE62C	55.8	68.2	1.0	50.2	5.0	5.0	6.8	89.0	0.104
P6KE62A	P6KE62CA	58.9	65.1	1.0	53.0	5.0	5.0	7.1	85.0	0.104
P6KE68	P6KE68C	61.2	74.8	1.0	55.1	5.0	5.0	6.1	98.0	0.104
P6KE68A	P6KE68CA	64.6	71.4	1.0	58.1	5.0	5.0	6.5	92.0	0.104
P6KE75	P6KE75C	67.5	82.5	1.0	60.7	5.0	5.0	5.5	108.0	0.105
P6KE75A	P6KE75CA	71.3	78.8	1.0	64.1	5.0	5.0	5.8	103.0	0.105
P6KE82	P6KE82C	73.8	90.2	1.0	66.4	5.0	5.0	5.1	118.0	0.105
P6KE82A	P6KE82CA	77.9	86.1	1.0	70.1	5.0	5.0	5.3	113.0	0.105
P6KE91	P6KE91C	81.9	100.0	1.0	73.7	5.0	5.0	4.5	131.8	0.106
P6KE91A	P6KE91CA	86.5	95.50	1.0	77.8	5.0	5.0	4.8	125.0	0.106
P6KE100	P6KE100C	90.0	110.0	1.0	81.0	5.0	5.0	4.2	144.0	0.106
P6KE100A	P6KE100CA	95.0	105.0	1.0	85.5	5.0	5.0	4.4	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 COEFFICIENT OF V_{RR} (%C)
		V_{BR}(VOLTS)		@IT (mA)						
		MIN	MAX			UNI	BI			
P6KE110	P6KE110C	99.0	121.0	1.0	89.2	5.0	5.0	3.8	158.0	0.107
P6KE110A	P6KE110CA	105.0	116.0	1.0	94.0	5.0	5.0	4.0	152.0	0.107
P6KE120	P6KE120C	108.0	132.0	1.0	97.2	5.0	5.0	3.5	173.0	0.107
P6KE120A	P6KE120CA	114.0	126.0	1.0	102.0	5.0	5.0	3.6	165.0	0.107
P6KE130	P6KE130C	117.0	143.0	1.0	105.0	5.0	5.0	3.2	187.0	0.107
P6KE130A	P6KE130CA	124.0	137.0	1.0	111.0	5.0	5.0	3.3	179.0	0.107
P6KE150	P6KE150C	135.0	165.0	1.0	121.0	5.0	5.0	2.8	215.0	0.108
P6KE150A	P6KE150CA	143.0	158.0	1.0	128.0	5.0	5.0	2.9	207.0	0.108
P6KE160	P6KE160C	144.0	176.0	1.0	130.0	5.0	5.0	2.6	230.0	0.108
P6KE160A	P6KE160CA	152.0	168.0	1.0	136.0	5.0	5.0	2.7	219.0	0.108
P6KE170	P6KE170C	153.0	187.0	1.0	138.0	5.0	5.0	2.5	244.0	0.108
P6KE170A	P6KE170CA	162.0	179.0	1.0	145.0	5.0	5.0	2.6	234.0	0.108
P6KE180	P6KE180C	162.0	198.0	1.0	146.0	5.0	5.0	2.3	258.0	0.108
P6KE180A	P6KE180CA	171.0	189.0	1.0	154.0	5.0	5.0	2.4	246.0	0.108
P6KE200	P6KE200C	180.0	220.0	1.0	162.0	5.0	5.0	2.1	287.0	0.108
P6KE200A	P6KE200CA	190.0	210.0	1.0	171.0	5.0	5.0	2.2	274.0	0.108
P6KE220	P6KE220C	198.0	242.0	1.0	175.0	5.0	5.0	1.75	344.0	0.108
P6KE220A	P6KE220CA	209.0	231.0	1.0	185.0	5.0	5.0	1.83	328.0	0.108
P6KE250	P6KE250C	225.0	275.0	1.0	202.0	5.0	5.0	1.67	360.0	0.110
P6KE250A	P6KE250CA	237.0	263.0	1.0	214.0	5.0	5.0	1.75	344.0	0.110
P6KE300	P6KE300C	270.0	330.0	1.0	243.0	5.0	5.0	1.4	430.0	0.110
P6KE300A	P6KE300CA	285.0	315.0	1.0	256.0	5.0	5.0	1.45	414.0	0.110
P6KE350	P6KE350C	315.0	385.0	1.0	284.0	5.0	5.0	1.2	504.0	0.110
P6KE350A	P6KE350CA	332.0	368.0	1.0	300.0	5.0	5.0	1.25	482.0	0.110
P6KE400	P6KE400C	360.0	440.0	1.0	324.0	5.0	5.0	1.05	574.0	0.110
P6KE400A	P6KE400CA	380.0	420.0	1.0	342.0	5.0	5.0	1.1	548.0	0.110
P6KE440	P6KE440C	396.0	484.0	1.0	356.0	5.0	5.0	0.95	630.0	0.110
P6KE440A	P6KE440CA	418.0	462.0	1.0	376.0	5.0	5.0	1.00	600.0	0.110
P6KE480	P6KE480C	432.0	528.0	1.0	389.0	5.0	5.0	0.88	686.0	0.110
P6KE480A	P6KE480CA	456.0	504.0	1.0	408.0	5.0	5.0	0.91	658.0	0.110
P6KE510	P6KE510C	459.0	561.0	1.0	413.0	5.0	5.0	0.82	729.0	0.110
P6KE510A	P6KE510CA	485.0	535.0	1.0	434.0	5.0	5.0	0.86	698.0	0.110
P6KE540	P6KE540C	486.0	594.0	1.0	437.0	5.0	5.0	0.78	772.0	0.110
P6KE540A	P6KE540CA	513.0	567.0	1.0	459.0	5.0	5.0	0.81	740.0	0.110

NOTES： 1. Suffix 'A ' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device

2. Add suffix 'C 'or ' CA ' after part number to specify Bi-directional devices

3. For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double

RATINGS AND CHARACTERISTIC CURVES P6KE6.8(C) THRU P6KE540(C)A

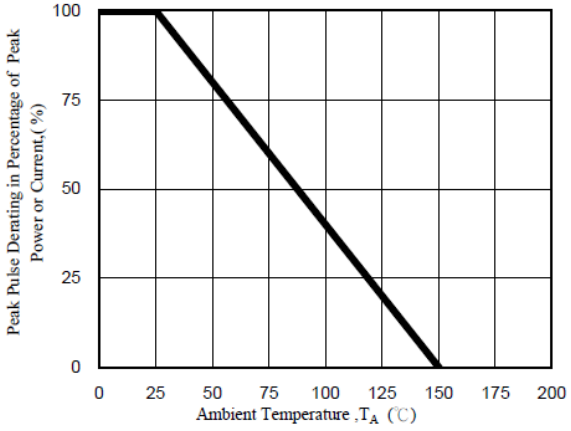


Fig. 1 - Pulse Derating Curve

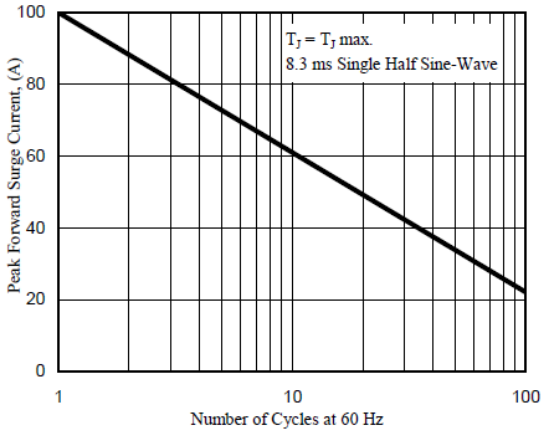


Fig. 2 - Maximum Non-Repetitive Surge Current

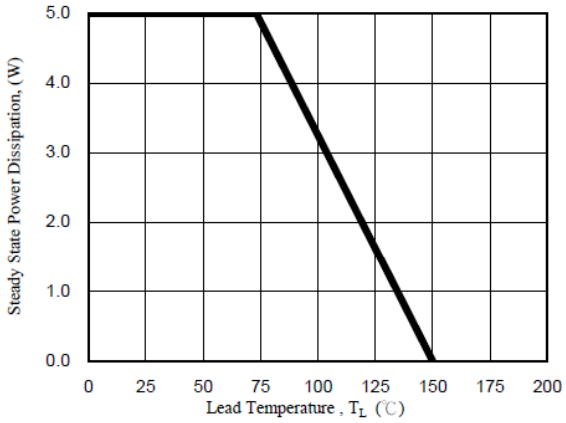


Fig. 3 - Steady State Power Derating Curve

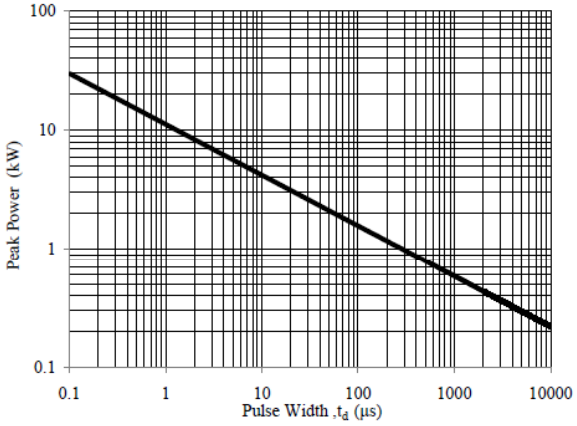


Fig. 4 - Peak Pulse Power Rating Curve

$P_{M(AV)}$, STEADY STATE POWER DISSIPATION, (W)

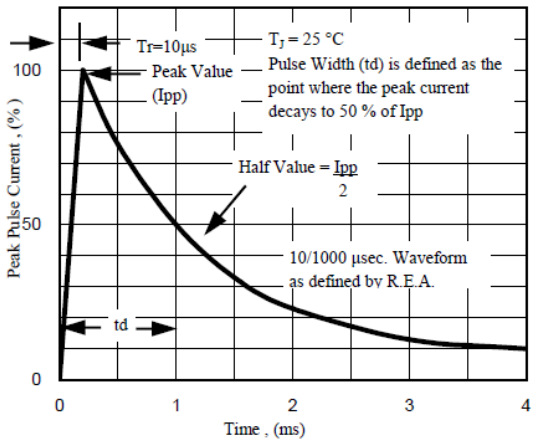


Fig. 5 - Pulse Waveform

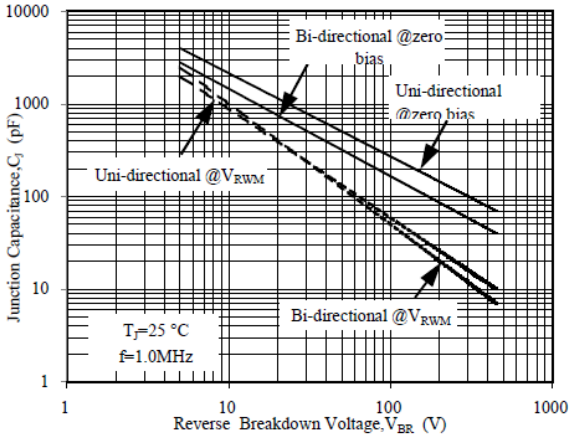


Fig. 6 - Typical Junction Capacitance