TEL: 805-498-2111 FAX: 805-498-3804

DESCRIPTION

The 1.5KE series of transient voltage suppressors are designed to protect components from over voltages caused by lightning, electrostatic discharge **(ESD)**, electrical fast transients **(EFT)**, inductive load switching, and AC line fluctuations.

TVS diodes are characterized by their high surge capability, low operating and clamping voltages, and fast response time. This makes them ideal for use as board level protection of sensitive semiconductor components. The 1.5KE series is suitable protection for sensitive TTL and MOS ICs such as microprocessors, I/O transceivers, ASICs, transducers, and MOS memory.

APPLICATIONS:

- General Transient Protection
- Board Level Thru-Hole Applications
- Industrial & Commercial Electronics
- AC Lines
- Hybrid suppression circuits

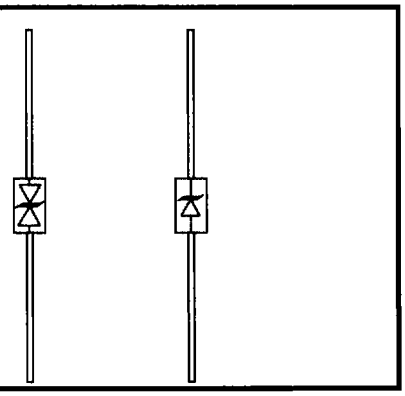
FEATURES:

- 1500 watts Peak Pulse Power (tp = 10 x 1000 µs)
- Unidirectional or Bidirectional
- Wide voltage range (5.5V - 440V)
- Low clamping voltages
- Solid state silicon avalanche technology

MECHANICAL CHARACTERISTICS:

- JEDEC DO-201 Outline
- Molded epoxy case
- Marking : P/N, date code, and logo
- Unidirectional devices marked with polarity band

SCHEMATIC



MAXIMUM RATINGS

RATING	SYMBOL	VALUE	UNIT
Peak Pulse Power (tp = 10 x 1000 µs)	Ppk	1500	Watts
Operating Temperature	Tj	-55 to +150	°C
Storage Temperature	Tstg	-55 to +150	°C

ELECTRICAL CHARACTERISTICS @ 25°C

UNI-DIRECTIONAL PART NUMBER See Note 1	UNI-DIRECTIONAL JEDEC PART NUMBER	BIDIRECTIONAL PART NUMBER Notes 1, 2, 3	REVERSE STAND-OFF VOLTAGE V_{RWM} (V)	REVERSE LEAKAGE CURRENT I_R (µA)	BREAKDOWN VOLTAGE V_{BR} @ I_T (V) MIN	BREAKDOWN VOLTAGE V_{BR} @ I_T (V) MAX	TEST CURRENT I_T (mA)	MAXIMUM CLAMPING VOLTAGE @ I_{PP} V_C (V)	PEAK PULSE CURRENT I_{PP} (A)	MAX. VOLTAGE TEMPERATURE VARIATION OF V_{BR} (mV/°C)
1.5KE6.8 ♦	1N6267	1.5KE6.8C ♦	5.80	1000	6.12	7.48	10	10.5	139.0	5
1.5KE6.8A ♦	1N6267A	1.5KE6.8CA ♦	5.80	1000	6.45	7.14	10	10.5	143.0	5
1.5KE7.5 ♦	1N6268	1.5KE7.5C ♦	6.05	500	6.75	8.25	10	11.7	128.0	5
1.5KE7.5A ♦	1N6268A	1.5KE7.5CA ♦	6.40	500	7.13	7.88	10	11.3	132.0	5
1.5KE8.2	1N6269	1.5KE8.2C	6.63	200	7.38	9.02	10	12.5	120.0	6
1.5KE8.2A	1N6269A	1.5KE8.2CA	7.02	200	7.79	8.61	10	12.1	124.0	6
1.5KE9.1	1N6270	1.5KE9.1C	7.37	50	8.19	10.00	1	13.8	109.0	7
1.5KE9.1A	1N6270A	1.5KE9.1CA	7.78	50	8.65	9.55	1	13.4	112.0	7
1.5KE10 ♦	1N6271	1.5KE10C ♦	8.10	10	9.00	11.00	1	15.0	100.0	8
1.5KE10A ♦	1N6271A	1.5KE10CA ♦	8.55	10	9.50	10.50	1	14.5	103.0	8
1.5KE11	1N6272	1.5KE11C	8.92	5	9.90	12.10	1	16.2	93.0	9
1.5KE11A	1N6272A	1.5KE11CA	9.40	5	10.50	11.60	1	15.6	96.0	9
1.5KE12	1N6273	1.5KE12C	9.72	5	10.80	13.20	1	17.3	87.0	10
1.5KE12A	1N6273A	1.5KE12CA	10.20	5	11.40	12.60	1	16.7	90.0	10
1.5KE13	1N6274	1.5KE13C	10.50	5	11.70	14.30	1	19.0	79.0	11
1.5KE13A	1N6274A	1.5KE13CA	11.10	5	12.40	13.70	1	18.2	82.0	11

652 MITCHELL ROAD NEWBURY PARK CA 91320

TEL: 805-498-2111 FAX: 805-498-3804

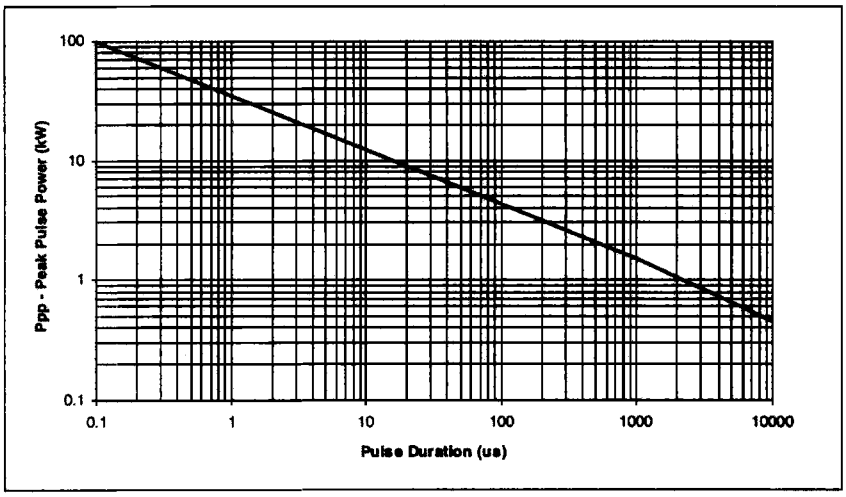
ELECTRICAL CHARACTERISTICS @ 25°C (CONTINUED)

UNI-DIRECTIONAL PART NUMBER See Note 1	JEDEC PART NUMBER	BIDIRECTIONAL PART NUMBER See Note 1, 2	REVERSE STAND-OFF VOLTAGE V_{RWM} (V)	REVERSE LEAKAGE CURRENT I_R (µA)	BREAKDOWN VOLTAGE V_{BR} @ I_T (V) MIN	MAX	TEST CURRENT I_T (mA)	MAXIMUM CLAMPING VOLTAGE @ I_{PP} V_C (V)	PEAK PULSE CURRENT I_{PP} (A)	MAX. VOLTAGE TEMPERATURE VARIATION OF V_{BR} (mV/°C)
1.5KE15 ♦	1N6275	1.5KE15C ♦	12.10	5	13.50	16.50	1	22.0	68.0	13
1.5KE15A ♦	1N6275A	1.5KE15CA ♦	12.80	5	14.30	15.80	1	21.2	71.0	12
1.5KE16	1N6276	1.5KE16C	13.60	5	14.40	17.60	1	23.5	64.0	16
1.5KE16A	1N6276A	1.5KE16CA	13.60	5	15.20	16.80	1	22.5	67.0	14
1.5KE18 ♦	1N6277	1.5KE18C ♦	14.50	5	16.20	19.80	1	26.5	56.5	17
1.5KE18A ♦	1N6277A	1.5KE18CA ♦	15.30	5	17.10	18.90	1	25.2	59.5	19
1.5KE20	1N6278	1.5KE20C	16.20	5	18.00	22.00	1	29.1	51.5	20
1.5KE20A	1N6278A	1.5KE20CA	17.10	5	19.00	21.00	1	27.7	54.0	19
1.5KE22	1N6279	1.5KE22C	17.80	5	19.80	24.20	1	31.8	47.0	21
1.5KE22A	1N6279A	1.5KE22CA	18.80	5	20.90	23.10	1	30.6	49.0	20
1.5KE24	1N6280	1.5KE24C	19.40	5	21.60	26.40	1	34.7	43.0	25
1.5KE24A	1N6280A	1.5KE24CA	20.50	5	22.80	25.20	1	33.2	45.0	23
1.5KE27 ♦	1N6281	1.5KE27C ♦	21.80	5	24.30	29.70	1	38.1	38.5	28
1.5KE27A ♦	1N6281A	1.5KE27CA ♦	23.10	5	25.70	28.40	1	37.5	40.0	25
1.5KE30 ♦	1N6282	1.5KE30C ♦	24.30	5	27.00	33.00	1	43.5	34.5	31
1.5KE30A ♦	1N6282A	1.5KE30CA ♦	25.60	5	28.50	31.50	1	41.4	36.0	28
1.5KE33	1N6283	1.5KE33C	26.80	5	29.70	36.30	1	47.7	31.5	31
1.5KE33A	1N6283A	1.5KE33CA	28.20	5	31.40	34.70	1	45.7	33.0	30
1.5KE36 ♦	1N6284	1.5KE36C ♦	29.10	5	32.40	39.60	1	52.0	29.0	35
1.5KE36A ♦	1N6284A	1.5KE36CA ♦	30.80	5	34.20	37.80	1	49.9	30.0	31
1.5KE39 ♦	1N6285	1.5KE39C ♦	31.60	5	35.10	42.90	1	56.4	26.5	39
1.5KE39A ♦	1N6285A	1.5KE39CA ♦	33.30	5	37.10	41.00	1	53.9	28.0	36
1.5KE43	1N6286	1.5KE43C	34.80	5	38.70	47.30	1	61.8	24.0	46
1.5KE43A	1N6286A	1.5KE43CA	36.80	5	40.90	45.20	1	59.3	25.3	44
1.5KE47 ♦	1N6287	1.5KE47C ♦	38.10	5	42.30	51.70	1	67.8	22.2	50
1.5KE47A ♦	1N6286A	1.5KE47CA ♦	40.20	5	44.70	49.40	1	64.8	23.2	48
1.5KE51	1N6288	1.5KE51C	41.30	5	45.90	56.10	1	73.5	20.4	55
1.5KE51A	1N6288A	1.5KE51CA	43.60	5	48.50	53.60	1	70.1	21.4	51
1.5KE56	1N6289	1.5KE56C	45.80	5	50.40	61.60	1	80.5	18.6	58
1.5KE56A	1N6289A	1.5KE56CA	47.90	5	53.20	58.80	1	77.0	19.5	56
1.5KE62	1N6290	1.5KE62C	50.20	5	55.80	68.20	1	89.0	16.9	65
1.5KE62A	1N6290A	1.5KE62CA	53.00	5	58.90	65.10	1	85.0	17.7	62
1.5KE68	1N6291	1.5KE68C ♦	55.10	5	61.20	74.80	1	98.0	15.3	71
1.5KE68A	1N6291A	1.5KE68CA ♦	58.10	5	64.60	71.40	1	92.0	16.3	69
1.5KE75	1N6292	1.5KE75C ♦	60.70	5	67.50	82.50	1	108.0	13.9	80
1.5KE75A	1N6292A	1.5KE75CA ♦	64.10	5	71.30	78.80	1	103.0	14.6	76
1.5KE82	1N6293	1.5KE82C	66.40	5	73.80	90.20	1	118.0	12.7	90
1.5KE82A	1N6293A	1.5KE82CA	70.10	5	77.90	86.10	1	113.0	13.3	86
1.5KE91	1N6294	1.5KE91C	73.70	5	81.90	100.00	1	131.0	11.4	99
1.5KE91A	1N6294A	1.5KE91CA	77.80	5	86.50	95.50	1	125.0	12.0	94
1.5KE100	1N6295	1.5KE100C	81.00	5	90.00	110.00	1	144.0	10.4	109
1.5KE100A	1N6295A	1.5KE100CA	85.50	5	95.00	105.00	1	137.0	11.0	104
1.5KE110	1N6296	1.5KE110C	89.20	5	99.00	121.00	1	158.0	9.5	120
1.5KE110A	1N6296A	1.5KE110CA	94.00	5	105.00	116.00	1	152.0	9.9	115
1.5KE120	1N6297	1.5KE120C	97.20	5	108.00	132.00	1	173.0	8.7	131
1.5KE120A	1N6297A	1.5KE120CA	102.00	5	114.00	126.00	1	165.0	9.1	125
1.5KE130	1N6298	1.5KE130C	105.00	5	117.00	143.00	1	187.0	8.0	142
1.5KE130A	1N6298A	1.5KE130CA	111.00	5	124.00	137.00	1	179.0	8.4	136
1.5KE150	1N6299	1.5KE150C	121.00	5	135.00	165.00	1	215.0	7.0	164
1.5KE150A	1N6299A	1.5KE150CA	128.00	5	143.00	158.00	1	207.0	7.2	157
1.5KE160	1N6300	1.5KE160C	130.00	5	144.00	176.00	1	230.0	6.5	175
1.5KE160A	1N6300A	1.5KE160CA	136.00	5	152.00	168.00	1	219.0	6.8	167
1.5KE170	1N6301	1.5KE170C	138.00	5	153.00	187.00	1	244.0	6.2	186
1.5KE170A	1N6301A	1.5KE170CA	145.00	5	162.00	179.00	1	234.0	6.4	188
1.5KE180	1N6302	1.5KE180C	146.00	5	162.00	198.00	1	258.0	5.8	197
1.5KE180A	1N6302A	1.5KE180CA	154.00	5	171.00	189.00	1	246.0	6.1	188
1.5KE200	1N6303	1.5KE200C	162.00	5	180.00	220.00	1	287.0	5.2	219
1.5KE200A	1N6303A	1.5KE200CA	171.00	5	190.00	210.00	1	274.0	5.5	209
1.5KE220		1.5KE220C ♦	175.00	5	198.00	242.00	1	344.0	4.3	240
1.5KE220A		1.5KE220CA ♦	185.00	5	209.00	231.00	1	325.0	4.6	230
1.5KE250		1.5KE250C	202.00	5	225.00	275.00	1	360.0	5.0	270
1.5KE250A		1.5KE250CA	214.00	5	237.00	263.00	1	344.0	5.0	260
1.5KE300		1.5KE300C	243.00	5	270.00	330.00	1	430.0	5.0	330
1.5KE300A		1.5KE300CA	256.00	5	285.00	315.00	1	414.0	5.0	315
1.5KE350		1.5KE350C	284.00	5	315.00	385.00	1	504.0	4.0	385
1.5KE350A		1.5KE350CA	300.00	5	332.00	368.00	1	482.0	4.0	368
1.5KE400		1.5KE400C	324.00	5	360.00	440.00	1	574.0	4.0	440
1.5KE400A		1.5KE400CA	342.00	5	380.00	420.00	1	548.0	4.0	420
1.5KE440		1.5KE440C	356.00	5	396.00	484.00	1	631.0	4.0	480
1.5KE440A		1.5KE440CA	378.00	5	418.00	462.00	1	600.0	4.0	440

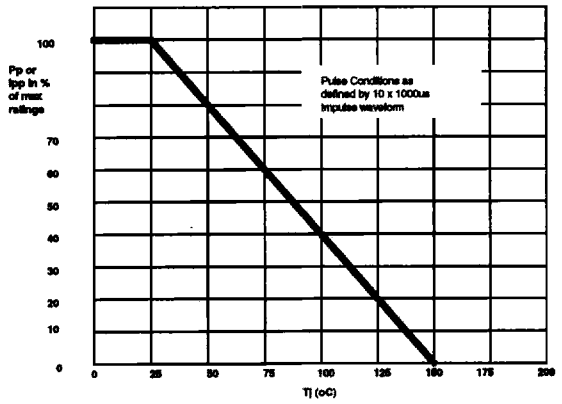
NOTE 1 : "A" = ±5% of nominal V_{BR}, standard tolerance is ±10%.
NOTE 2 : Bidirectional devices have symmetrical avalanche characteristics in both directions.
NOTE 3 : For bidirectional devices with VRWM ≤ 10 volts, the IR limit is doubled.
♦ : Popular / Recommended part types

TEL: 805-498-2111 FAX: 805-498-3804

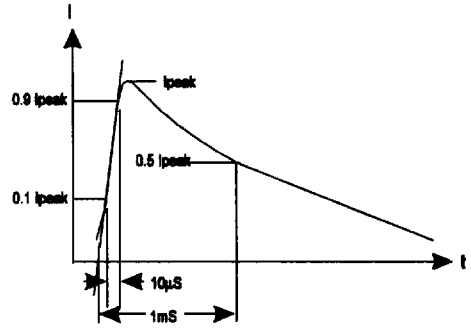
PEAK PULSE POWER vs. PULSE TIME



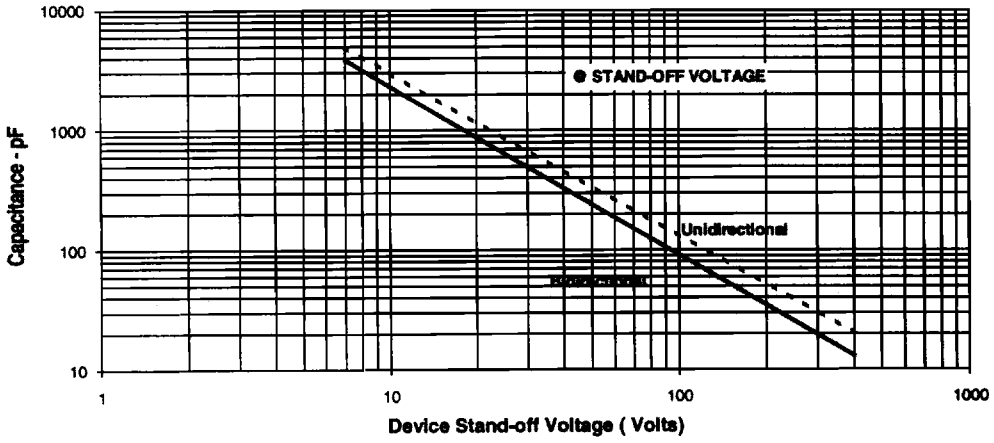
PULSE DERATING CURVE



10x1000µs IMPULSE WAVEFORM

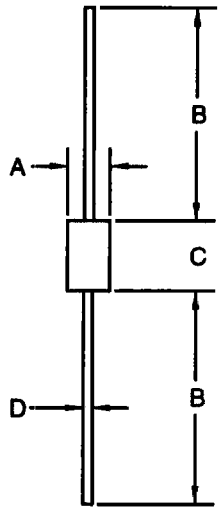


CAPACITANCE vs. WORKING VOLTAGE



TEL: 805-498-2111 FAX: 805-498-3804

MECHANICAL OUTLINE - DO-201



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.188	.210	4.8	5.3	
B	1.00	–	25.4	–	
C	.285	.375	7.2	9.5	
D	.038	.042	.97	1.07	

TYPICAL APPLICATION

AC LINE PROTECTION

The extremely fast clamping speed of TVS diodes may be combined with the high current handling capability of MOVs to provide optimum transient protection on AC lines