WILLAS

TVS 1.5KE SERIES

Pb Free Product

GPP TRANSIENT VOLTAGE SUPPRESSOR

REVERSE VOLTAGE 6.8 to 600 Volts PEAK PULSE POWER 1500 WATTS

FEATURES

- Glass passivated chip
- 1500 W peak pulse power capability with a 10/1000μs waveform, repetitive rate (duty cycle):0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS product for packing code suffix "G"
  Halogen free product for packing code suffix "H"

MECHANICAL DATA

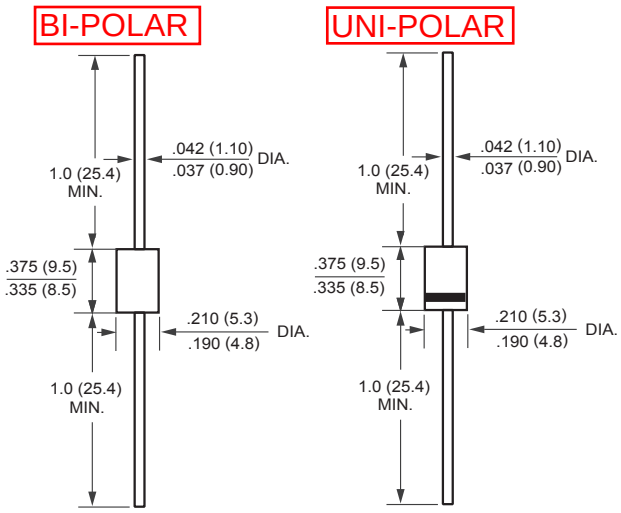
Case: Molded plastic, 1.5KE

Epoxy: UL 94V-O rate flame retardant

Lead:MIL-STD-202E method 208C guaranteed

Mounting position: Any

1.5KE



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

Single phase half wave, 60Hz, resistive of inductive load.

For capacitive load, derate current by 20%

Parameter	SYMBOL	VALUE	UNIT
Peak power dissipation with a 10/1000μs waveform	P_{PP}	Minimum 1500	Watts
Peak pulse current wih a 10/1000μs waveform	I_{PP}	See Next Table	Amps.
Power dissipation on infinite heatsink at T_L = 75 °C	P_D	6.5	Watts
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only(1)	I_{FSM}	200	Amps.
Maximum instantaneous forward voltage at 25 A for unidirectional only (2)	V_F	3.5/5.0	Volts
Operating junction and storage temperature range	T_J , T_{STG}	–55 to +150	℃

Note:

(1) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

(2) VF= 3.5V on 1.5KE6.8A thru 1.5KE200A devices and VF= 5.0V on 1.5KE220A thru 1.5KE600A devices.

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RATING AND CHARACTERISTIC CURVES

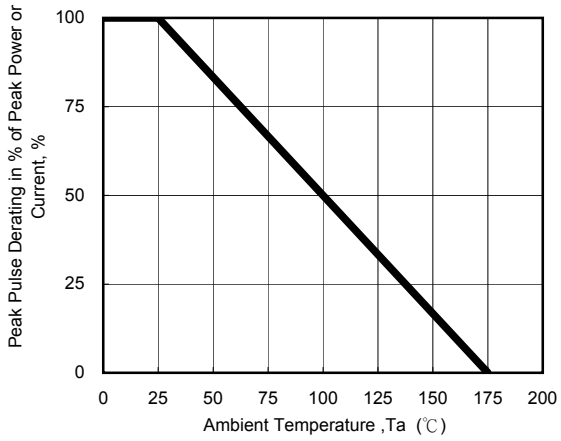

Fig. 1 - Pulse Derating Curve

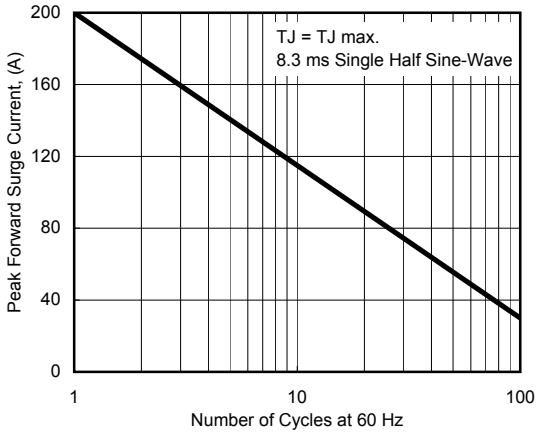

Fig. 2 - Maximum Non-Repetitive Surge Current

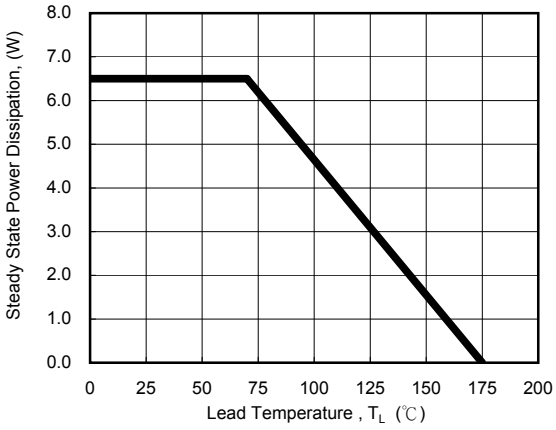

Fig. 3 - Steady State Power Derating Curve

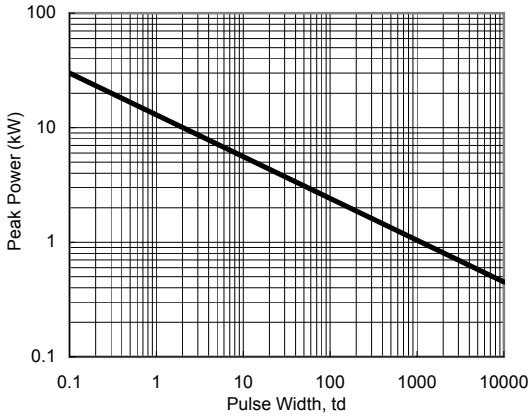

FIG.4 - Peak Pulse Power Rating Curve

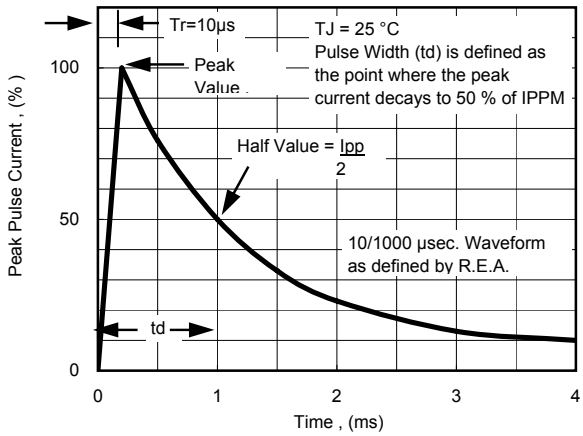

Fig. 5 - Pulse Waveform

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TVS 1.5KE SERIES

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GPP TRANSIENT VOLTAGE SUPPRESSOR

REVERSE VOLTAGE 6.8 to 600 Volts PEAK PULSE POWER 1500 WATTS

1.5KE SERIES		Breakdown voltage VBR @ **IT**			Maximum Reverse Leakage **IR(uA)** @VRWM	Working PeakReverse Voltage **VRWM (Volts)**	Maximum Reverse Surge Current **Ipp(A)** @10x1000us sinewave	Maximum Clamping Voltage **Vc (Volts)** @Ipp
Uni-polar	Bi-polar	**Min (V)**	**Max (V)**	**IT (mA)**				
1.5KE6.8	1.5KE6.8C	6.12	7.48	10	1000	5.5	139	10.8
1.5KE6.8A	1.5KE6.8CA	6.46	7.14	10	1000	5.8	143	10.5
1.5KE7.5	1.5KE7.5C	6.75	8.25	10	500	6.1	128	11.7
1.5KE7.5	1.5KE7.5CA	7.13	7.88	10	500	6.4	133	11.3
1.5KE8.2	1.5KE8.2C	7.38	9.02	10	200	6.6	120	12.5
1.5KE8.2A	1.5KE8.2CA	7.79	8.61	10	200	7.0	124	12.1
1.5KE9.1	1.5KE9.1C	8.19	10.01	1	50	7.4	109	13.8
1.5KE9.1A	1.5KE9.1CA	8.65	9.56	1	50	7.8	112	13.4
1.5KE10	1.5KE10C	9.00	11.00	1	10	8.1	100	15.0
1.5KE10A	1.5KE10CA	9.50	10.50	1	10	8.6	103	14.5
1.5KE11	1.5KE11C	9.90	12.10	1	5	8.9	92.6	16.2
1.5KE11A	1.5KE11CA	10.45	11.55	1	5	9.4	96.2	15.6
1.5KE12	1.5KE12C	10.80	13.20	1	5	9.7	86.7	17.3
1.5KE12A	1.5KE12CA	11.40	12.60	1	5	10.2	89.8	16.7
1.5KE13	1.5KE13C	11.70	14.30	1	5	10.5	78.9	19.0
1.5KE13A	1.5KE13CA	12.35	13.65	1	5	11.1	82.4	18.2
1.5KE15	1.5KE15C	13.50	16.50	1	5	12.1	68.2	22.0
1.5KE15A	1.5KE15CA	14.25	15.75	1	5	12.8	70.8	21.2
1.5KE16	1.5KE16C	14.40	17.60	1	5	12.9	63.8	23.5
1.5KE16A	1.5KE16CA	15.20	16.80	1	5	13.6	66.7	22.5
1.5KE18	1.5KE18C	16.20	19.80	1	5	14.5	56.6	26.5
1.5KE18A	1.5KE18CA	17.10	18.90	1	5	15.3	59.5	25.2
1.5KE20	1.5KE20C	18.00	22.00	1	5	16.2	51.5	29.1
1.5KE20A	1.5KE20CA	19.00	21.00	1	5	17.1	54.2	27.7
1.5KE22	1.5KE22C	19.80	24.20	1	5	17.8	47.0	31.9
1.5KE22A	1.5KE22CA	20.90	23.10	1	5	18.8	49.0	30.6
1.5KE24	1.5KE24C	21.60	26.40	1	5	19.4	43.2	34.7
1.5KE24A	1.5KE24CA	22.80	25.20	1	5	20.5	45.2	33.2
1.5KE27	1.5KE27C	24.30	29.70	1	5	21.8	38.4	39.1
1.5KE27A	1.5KE27CA	25.65	28.35	1	5	23.1	40.0	37.5
1.5KE30	1.5KE30C	27.00	33.00	1	5	24.3	34.5	43.5
1.5KE30A	1.5KE30CA	28.50	31.50	1	5	25.6	36.2	41.4
1.5KE33	1.5KE33C	29.70	36.30	1	5	26.8	31.4	47.7
1.5KE33A	1.5KE33CA	31.35	34.65	1	5	28.2	32.8	45.7
1.5KE36	1.5KE36C	32.40	39.60	1	5	29.1	28.8	52.0
1.5KE36A	1.5KE36CA	34.20	37.80	1	5	30.8	30.1	49.9
1.5KE39	1.5KE39C	35.10	42.90	1	5	31.6	26.6	56.4
1.5KE39A	1.5KE39CA	37.05	40.95	1	5	33.3	27.8	53.9
1.5KE43	1.5KE43C	38.70	47.30	1	5	34.8	24.2	61.9
1.5KE43A	1.5KE43CA	40.85	45.15	1	5	36.8	25.3	59.3
1.5KE47	1.5KE47C	42.30	51.70	1	5	38.1	22.1	67.8
1.5KE47A	1.5KE47CA	44.65	49.35	1	5	40.2	23.1	64.8
1.5KE51	1.5KE51C	45.90	56.10	1	5	41.3	20.4	73.5
1.5KE51A	1.5KE51CA	48.45	53.55	1	5	43.6	21.4	70.1
1.5KE56	1.5KE56C	50.40	61.60	1	5	45.4	18.6	80.5
1.5KE56A	1.5KE56CA	53.20	58.80	1	5	47.8	19.5	77.0
1.5KE62	1.5KE62C	55.80	68.20	1	5	50.2	16.9	89.0
1.5KE62A	1.5KE62CA	58.90	65.10	1	5	53.0	17.6	85.0
1.5KE68	1.5KE62C	61.20	74.80	1	5	55.1	15.3	98.0
1.5KE68A	1.5KE62CA	64.60	71.40	1	5	58.1	16.3	92.0
1.5KE75	1.5KE75C	67.50	82.50	1	5	60.7	13.9	108
1.5KE75A	1.5KE75CA	71.25	78.75	1	5	64.1	14.6	103
1.5KE82	1.5KE82C	73.80	90.20	1	5	66.4	12.7	118
1.5KE82A	1.5KE82CA	77.90	86.10	1	5	70.1	13.3	113
1.5KE91	1.5KE91C	81.90	100.10	1	5	73.7	11.5	131
1.5KE91A	1.5KE91CA	86.45	95.55	1	5	77.8	12.0	125
1.5KE100	1.5KE100C	90.00	110.00	1	5	81.0	10.4	144
1.5KE100A	1.5KE100CA	95.00	105.0	1	5	85.5	10.9	137

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Uni-polar	Bi-polar	**Min (V)**	**Max (V)**	**IT (mA)**				
1.5KE110	1.5KE110C	99.00	121.0	1	5	89.2	9.49	158
1.5KE110A	1.5KE110CA	104.5	115.5	1	5	94.0	9.87	152
1.5KE120	1.5KE120C	108.0	132.0	1	5	97.2	8.67	173
1.5KE120A	1.5KE120CA	114.0	126.0	1	5	102	9.09	165
1.5KE130	1.5KE130C	117.0	143.0	1	5	105	8.02	187
1.5KE130A	1.5KE130CA	123.5	136.5	1	5	111	8.38	179
1.5KE150	1.5KE150C	135.0	165.0	1	5	121	6.98	215
1.5KE150A	1.5KE150CA	142.5	157.5	1	5	128	7.25	207
1.5KE160	1.5KE160C	144.0	176.0	1	5	130	6.52	230
1.5KE160A	1.5KE160CA	152.0	168.0	1	5	136	6.85	219
1.5KE170	1.5KE170C	153.0	187.0	1	5	138	6.15	244
1.5KE170A	1.5KE170CA	161.5	178.5	1	5	145	6.41	234
1.5KE180	1.5KE180C	162.0	198.0	1	5	146	5.81	258
1.5KE180A	1.5KE180CA	171.0	189.0	1	5	154	6.10	246
1.5KE200	1.5KE200C	180.0	220.0	1	5	162	5.23	287
1.5KE200A	1.5KE200CA	190.0	210.0	1	5	171	5.47	274
1.5KE220	1.5KE220C	198.0	242.0	1	5	175	4.36	344
1.5KE220A	1.5KE220CA	209.0	231.0	1	5	185	4.57	328
1.5KE250	1.5KE250C	225.0	275.0	1	5	202	4.17	360
1.5KE250A	1.5KE250CA	237.5	262.5	1	5	214	4.36	344
1.5KE300	1.5KE300C	270.0	330.0	1	5	243	3.49	430
1.5KE300A	1.5KE300CA	285.0	315.0	1	5	256	3.62	414
1.5KE350	1.5KE350C	315.0	385.0	1	5	284	2.98	504
1.5KE350A	1.5KE350CA	332.5	367.5	1	5	299	3.11	482
1.5KE380	1.5KE380C	342.0	418.0	1	5	309	2.74	547
1.5KE380A	1.5KE380CA	361.0	399.0	1	5	325	2.86	524
1.5KE400	1.5KE400C	360.0	440.0	1	5	325	2.60	576
1.5KE400A	1.5KE400CA	380.0	420.0	1	5	342	2.72	552
1.5KE440	1.5KE440C	396.0	484.0	1	5	357	2.37	634
1.5KE440A	1.5KE440CA	418.0	462.0	1	5	376	2.47	607
1.5KE500	1.5KE500C	450.0	550.0	1	5	406	2.08	720
1.5KE500A	1.5KE500CA	475.0	525.0	1	5	428	2.17	690
1.5KE520	1.5KE520C	468.0	572.0	1	5	422	2.00	749
1.5KE520A	1.5KE520CA	494.0	546.0	1	5	445	2.09	718
1.5KE550	1.5KE550C	495.0	605.0	1	5	447	1.89	792
1.5KE550A	1.5KE550CA	522.5	577.5	1	5	470	1.98	759
1.5KE600	1.5KE600C	540.0	660.0	1	5	487	1.74	864
1.5KE600A	1.5KE600CA	570.0	630.0	1	5	513	1.81	828

Note:

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 VR of 10 volts and under, the IR limit is double .
4. For Uni-directional devices VF max=3.5v at IF=25 A 300us square wave pulse.