

# 1.5KE SERIES



1500 WATT PEAK POWER TRANSIENT VOLTAGE SUPPRESSORS



## FEATURES

- \* 1500 Watts Surge Capability at 1ms
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- \* Typical  $I_k$  less than  $1\mu A$  above 10V
- \* High temperature soldering guaranteed:  $260^\circ C$  / 10 seconds / .375"(9.5mm) lead length, 5lbs.(2.3kg) tension

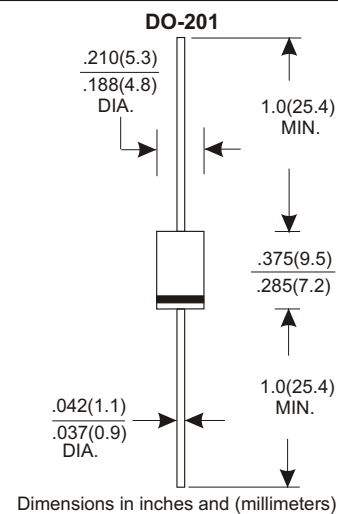
## MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: Axial leads, solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any

## VOLTAGE RANGE

6.8 to 600 Volts

1500 Watts Peak Power



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating  $25^\circ C$  ambient temperature unless otherwise specified.  
Single phase half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^\circ C$ , $T_P=1ms$ (NOTE 1)	$P_{PK}$	Minimum 1500	Watts
Power Dissipation on infinite heatsink at $T_L=75^\circ C$	$P_D$	5.0	Watt
Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3)	$I_{FSM}$	200	Amps
Maximum Instantaneous Forward Voltage at 25.0A for Unidirectional only	$V_F$	3.5/5.0	Volts
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ C$

### NOTES:

1. Non-repetitive current pulse per Fig. 3 and derated above  $T_A=25^\circ C$  per Fig. 2.
2. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.
3.  $V_F < 3.5V$  for devices of  $V_{BR} < 200V$  and  $V_F < 5.0V$  for devices of  $V_{BR} > 201V$ .

## DEVICES FOR BIPOLAR APPLICATIONS

1. For Bidirectional use C or CA Suffix for types 1.5KE6.8 thru 1.5KE600.
2. Electrical characteristics apply in both directions.

## RATING AND CHARACTERISTIC CURVES (1.5KE SERIES)

FIG.1-PEAK PULSE POWER DERATING CURVE

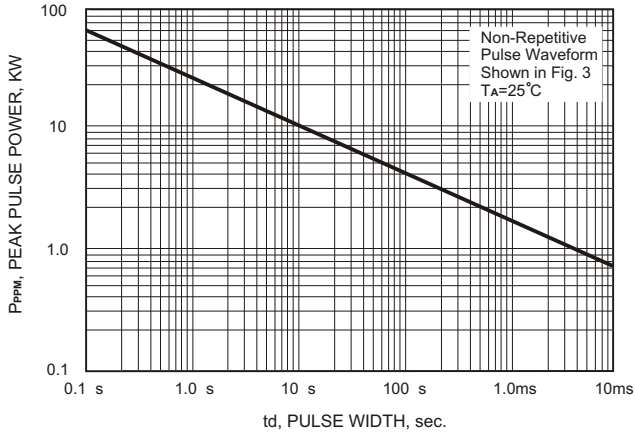


FIG.2-PULSE DERATING CURVE

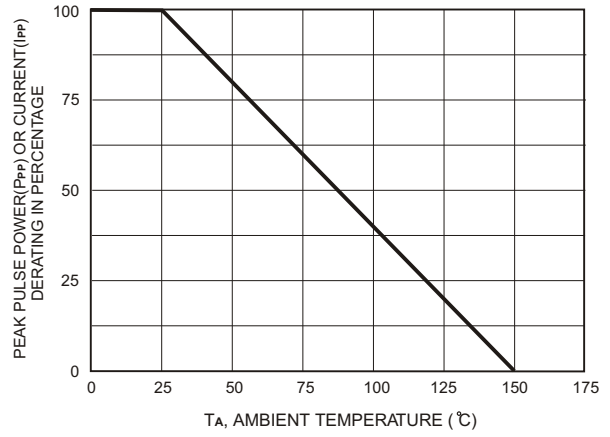


FIG.3-PULSE WAVE FORM

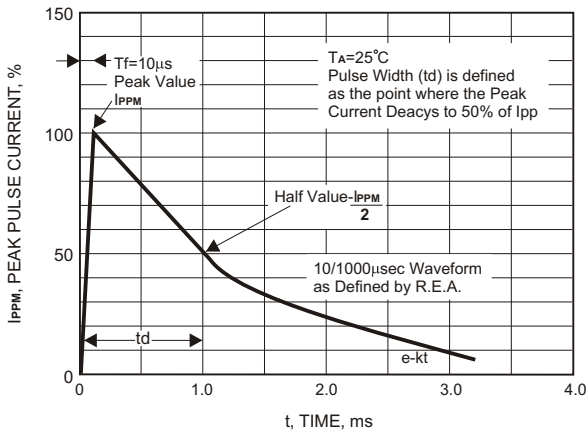


FIG.4-TYPICAL JUNCTION CAPACITANCE

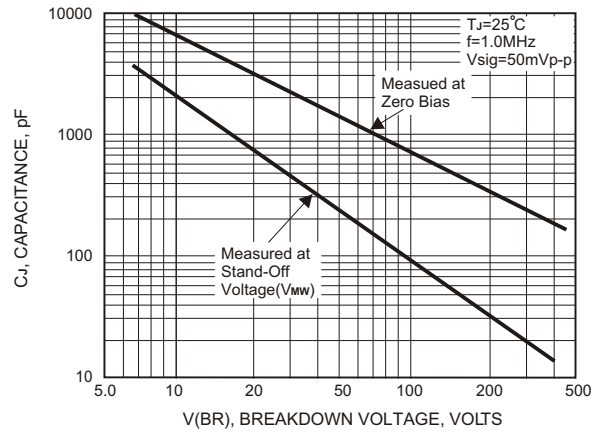


FIG.5-STEADY STATE POWER DERATING CURVE

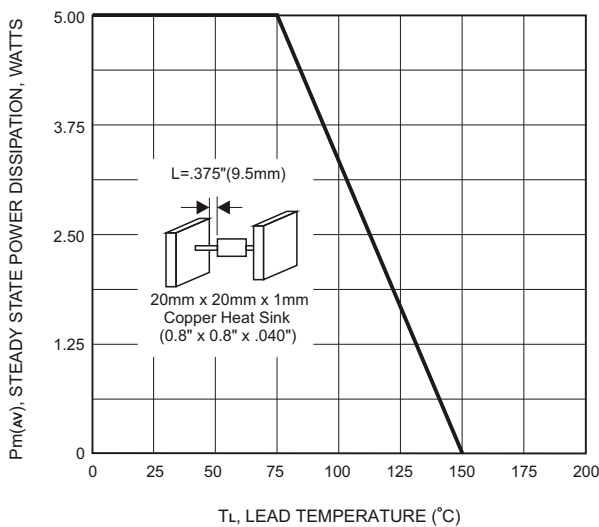
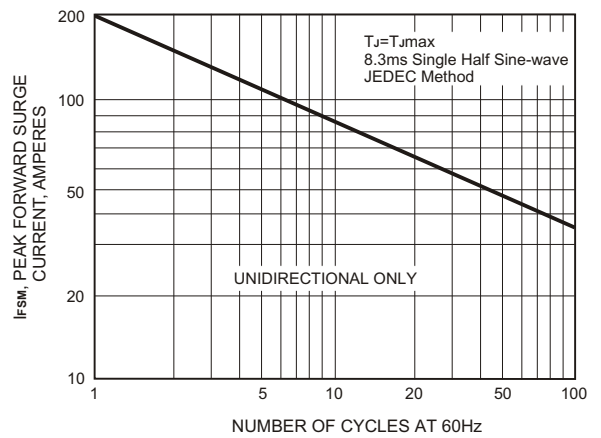


FIG.6-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT, UNIDIRECTIONAL



# 1500 Watt Axial Lead TVS



Part Number (Uni)	Part Number (Bi)	Reverse Standoff Voltage	Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage @ $V_R$	Maximum Peak Pulse Current	Maximum Clamping Voltage @ $I_{pp}$
			$V_R$ (V)	Min (V)	Max (V)			
1.5KE6.8	1.5KE6.8C	5.5	6.12	7.48	10	1000	138.89	10.8
1.5KE6.8A	1.5KE6.8CA	5.8	6.45	7.14	10	1000	142.86	10.5
1.5KE7.5	1.5KE7.5C	6.1	6.75	8.25	10	500	128.21	11.7
1.5KE7.5A	1.5KE7.5CA	6.4	7.13	7.88	10	500	132.74	11.3
1.5KE8.2	1.5KE8.2C	6.6	7.38	9.02	10	200	120.00	12.5
1.5KE8.2A	1.5KE8.2CA	7.0	7.79	8.61	10	200	123.97	12.1
1.5KE9.1	1.5KE9.1C	7.4	8.19	10.01	1	50	108.70	13.8
1.5KE9.1A	1.5KE9.1CA	7.8	8.65	9.56	1	50	111.94	13.4
1.5KE10	1.5KE10C	8.1	9.00	11.00	1	10	100.00	15.0
1.5KE10A	1.5KE10CA	8.6	9.50	10.50	1	10	103.45	14.5
1.5KE11	1.5KE11C	8.9	9.90	12.10	1	5	92.59	16.2
1.5KE11A	1.5KE11CA	9.4	10.45	11.55	1	5	96.15	15.6
1.5KE12	1.5KE12C	9.7	10.80	13.20	1	5	86.71	17.3
1.5KE12A	1.5KE12CA	10.2	11.40	12.60	1	5	89.82	16.7
1.5KE13	1.5KE13C	10.5	11.70	14.30	1	5	78.95	19.0
1.5KE13A	1.5KE13CA	11.1	12.35	13.65	1	5	82.42	18.2
1.5KE15	1.5KE15C	12.1	13.50	16.50	1	5	68.18	22.0
1.5KE15A	1.5KE15CA	12.8	14.25	15.75	1	5	70.75	21.2
1.5KE16	1.5KE16C	12.9	14.40	17.60	1	5	63.83	23.5
1.5KE16A	1.5KE16CA	13.6	15.20	16.80	1	5	66.67	22.5
1.5KE18	1.5KE18C	14.5	16.20	19.80	1	5	56.60	26.5
1.5KE18A	1.5KE18CA	15.3	17.10	18.90	1	5	59.52	25.2
1.5KE20	1.5KE20C	16.2	18.00	22.00	1	5	51.55	29.1
1.5KE20A	1.5KE20CA	17.1	19.00	21.00	1	5	54.15	27.7
1.5KE22	1.5KE22C	17.8	19.80	24.20	1	5	47.02	31.9
1.5KE22A	1.5KE22CA	18.8	20.90	23.10	1	5	49.02	30.6
1.5KE24	1.5KE24C	19.4	21.60	26.40	1	5	43.23	34.7
1.5KE24A	1.5KE24CA	20.5	22.80	25.20	1	5	45.18	33.2
1.5KE27	1.5KE27C	21.8	24.30	29.70	1	5	38.36	39.1
1.5KE27A	1.5KE27CA	23.1	25.65	28.35	1	5	40.00	37.5
1.5KE30	1.5KE30C	24.3	27.00	33.00	1	5	34.48	43.5
1.5KE30A	1.5KE30CA	25.6	28.50	31.50	1	5	36.23	41.4
1.5KE33	1.5KE33C	26.8	29.70	36.30	1	5	31.45	47.7
1.5KE33A	1.5KE33CA	28.2	31.35	34.65	1	5	32.82	45.7
1.5KE36	1.5KE36C	29.1	32.40	39.60	1	5	28.85	52.0
1.5KE36A	1.5KE36CA	30.8	34.20	37.80	1	5	30.06	49.9
1.5KE39	1.5KE39C	31.6	35.10	42.90	1	5	26.60	56.4
1.5KE39A	1.5KE39CA	33.3	37.05	40.95	1	5	27.83	53.9
1.5KE43	1.5KE43C	34.8	38.70	47.30	1	5	24.23	61.9
1.5KE43A	1.5KE43CA	36.8	40.85	45.15	1	5	25.30	59.3
1.5KE47	1.5KE47C	38.1	42.30	51.70	1	5	22.12	67.8
1.5KE47A	1.5KE47CA	40.2	44.65	49.35	1	5	23.15	64.8
1.5KE51	1.5KE51C	41.3	45.90	56.10	1	5	20.41	73.5
1.5KE51A	1.5KE51CA	43.6	48.45	53.55	1	5	21.40	70.1
1.5KE56	1.5KE56C	45.4	50.40	61.60	1	5	18.63	80.5
1.5KE56A	1.5KE56CA	47.8	53.20	58.80	1	5	19.48	77.0
1.5KE62	1.5KE62C	50.2	55.80	68.20	1	5	16.85	89.0
1.5KE62A	1.5KE62CA	53.0	58.90	65.10	1	5	17.65	85.0

# 1500 Watt Axial Lead TVS



Part Number (Uni)	Part Number (Bi)	Reverse Standoff Voltage	Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage @ VR	Maximum Peak Pulse Current	Maximum Clamping Voltage @ $I_{pp}$
			VR (V)	Min (V)	Max (V)			
1.5KE68	1.5KE68C	55.1	61.20	74.80	1	5	15.31	98.0
1.5KE68A	1.5KE68CA	58.1	64.60	71.40	1	5	16.30	92.0
1.5KE75	1.5KE75C	60.7	67.50	82.50	1	5	13.89	108.0
1.5KE75A	1.5KE75CA	64.1	71.25	78.75	1	5	14.56	103.0
1.5KE82	1.5KE82C	66.4	73.80	90.20	1	5	12.71	118.0
1.5KE82A	1.5KE82CA	70.1	77.90	86.10	1	5	13.27	113.0
1.5KE91	1.5KE91C	73.7	81.90	100.10	1	5	11.45	131.0
1.5KE91A	1.5KE91CA	77.8	86.45	95.55	1	5	12.00	125.0
1.5KE100	1.5KE100C	81.0	90.00	110.00	1	5	10.42	144.0
1.5KE100A	1.5KE100CA	85.5	95.00	105.00	1	5	10.95	137.0
1.5KE110	1.5KE110C	89.2	99.00	121.00	1	5	9.49	158.0
1.5KE110A	1.5KE110CA	94.0	104.50	115.50	1	5	9.87	152.0
1.5KE120	1.5KE120C	97.2	108.00	132.00	1	5	8.67	173.0
1.5KE120A	1.5KE120CA	102.0	114.00	126.00	1	5	9.09	165.0
1.5KE130	1.5KE130C	105.0	117.00	143.00	1	5	8.02	187.0
1.5KE130A	1.5KE130CA	111.0	123.50	136.50	1	5	8.38	179.0
1.5KE150	1.5KE150C	121.0	135.00	165.00	1	5	6.98	215.0
1.5KE150A	1.5KE150CA	128.0	142.50	157.50	1	5	7.25	207.0
1.5KE160	1.5KE160C	130.0	144.00	176.00	1	5	6.52	230.0
1.5KE160A	1.5KE160CA	136.0	152.00	168.00	1	5	6.85	219.0
1.5KE170	1.5KE170C	138.0	153.00	187.00	1	5	6.15	244.0
1.5KE170A	1.5KE170CA	145.0	161.50	178.50	1	5	6.41	234.0
1.5KE180	1.5KE180C	146.0	162.00	198.00	1	5	5.81	258.0
1.5KE180A	1.5KE180CA	154.0	171.00	189.00	1	5	6.10	246.0
1.5KE200	1.5KE200C	162.0	180.00	220.00	1	5	5.23	287.0
1.5KE200A	1.5KE200CA	171.0	190.00	210.00	1	5	5.47	274.0
1.5KE220	1.5KE220C	175.0	198.00	242.00	1	5	4.36	344.0
1.5KE220A	1.5KE220CA	185.0	209.00	231.00	1	5	4.57	328.0
1.5KE250	1.5KE250C	202.0	225.00	275.00	1	5	4.17	360.0
1.5KE250A	1.5KE250CA	214.0	237.50	262.50	1	5	4.36	344.0
1.5KE300	1.5KE300C	243.0	270.00	330.00	1	5	3.49	430.0
1.5KE300A	1.5KE300CA	256.0	285.00	315.00	1	5	3.62	414.0
1.5KE350	1.5KE350C	284.2	315.00	385.00	1	5	2.98	504.0
1.5KE350A	1.5KE350CA	299.3	332.50	367.50	1	5	3.11	482.0
1.5KE380	1.5KE380C	308.6	342.00	418.00	1	5	2.74	547.2
1.5KE380A	1.5KE380CA	324.9	361.00	399.00	1	5	2.86	524.4
1.5KE400	1.5KE400C	324.8	360.00	440.00	1	5	2.60	574.0
1.5KE400A	1.5KE400CA	342.0	380.00	420.00	1	5	2.72	548.0
1.5KE440	1.5KE440C	357.3	396.00	484.00	1	5	2.37	631.0
1.5KE440A	1.5KE440CA	376.2	418.00	462.00	1	5	2.47	602.0
1.5KE500	1.5KE500C	406.0	450.00	550.00	1	5	2.08	720.0
1.5KE500A	1.5KE500CA	427.5	475.00	525.00	1	5	2.17	690.0
1.5KE520	1.5KE520C	422.2	468.00	572.00	1	5	2.00	748.8
1.5KE520A	1.5KE520CA	444.6	494.00	546.00	1	5	2.09	717.6
1.5KE550	1.5KE550C	446.6	495.00	605.00	1	5	1.89	792.0
1.5KE550A	1.5KE550CA	470.3	522.50	577.50	1	5	1.98	759.0
1.5KE600	1.5KE600C	487.2	540.00	660.00	1	5	1.74	864.0
1.5KE600A	1.5KE600CA	513.0	570.00	630.00	1	5	1.81	828.0