

# 1.5KE Series

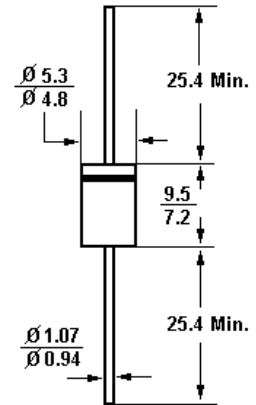
## GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

Voltage: 6.8 TO 440V 1500W Peak Power 5.0W Steady State

### Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated chip junction in molded plastic package
- 1500W surge capability at 1ms
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1 ps from 0 volt to BV min
- Typical  $I_R$  less than 1  $\mu$ A above 10V
- High temperature soldering guaranteed:  
260°C/10s/0.375"(9.5mm) lead length/5 lbs(2.3kg) tension

DO-201AE



Dimensions in mm

### Mechanical Data

**Case:** JEDEC DO-201AE molded plastic

**Terminals:** Axial leads, solderable per MIL-STD-202, Method 208

**Polarity:** Color band denoted cathode except Bipolar

**Mounting Position:** Any

**Weight:** 0.045ounce, 1.2gram

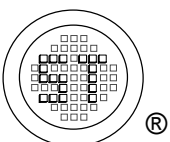
### Description

- Devices for bipolar applications
- For bi-directional use C or CA suffix for types 1.5KE6.8 thru types 1.5KE440
- Electrical characteristics apply in both directions

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

	Symbol	Value	Unit
Peak Power Dissipation at $T_a = 25^\circ\text{C}$ , $T_p = 1\text{ms}$ (Note1)	$P_{PK}$	min. 1500	W
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$ Lead length 0.375"(9.5mm) (Note2)	$P_{tot}$	5.0	W
Peak Forward Surge Current, 8.3ms Single half sine-wave Superimposed on rated load(JEDED Method)(Note3)	$I_{FSM}$	200	A
Junction Temperature	$T_j$	175	$^\circ\text{C}$
Storage Temperature Range	$T_s$	-65 to +175	$^\circ\text{C}$

- Notes:** 1. Non-repetitive current pulse, per Fig.3 and derated above  $T_a = 25^\circ\text{C}$ , per Fig.2  
 2. Mounted on Copper Leaf area of  $0.79\text{in}^2$  ( $20\text{mm}^2$ )  
 3. 8.3ms single half sine-wave, duty cycle = 4 pulse per minutes maximum.



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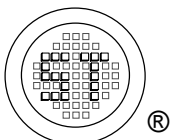


Dated : 26/07/2003

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## Bi-directional 1500W Axial Lead TVS

Bi-directional Part Number	Reverse Stand-off Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$ (V) MIN@ $I_T$	Breakdown Voltage $V_{BR}$ (V) MAX@ $I_T$	Test Current $I_T$ (mA)	Maximum Clamping Voltage @ $I_{pp}$ VC (V)	Peak Pulse Current $I_{pp}$ (A)	Reverse Leakage @ $V_{RWM}$ $I_R$ ( $\mu$ A)
1.5KE6.8C	5.50	6.12	7.48	10	10.8	139.0	2000
1.5KE6.8CA	5.80	6.45	7.14	10	10.5	143.0	2000
1.5KE7.5C	6.05	6.75	8.25	10	11.7	128.0	1000
1.5KE7.5CA	6.40	7.13	7.88	10	11.3	132.0	1000
1.5KE8.2C	6.63	7.38	9.02	10	12.5	120.0	400
1.5KE8.2CA	7.02	7.79	8.61	10	12.1	124.0	400
1.5KE9.1C	7.37	8.19	10.00	1	13.8	109.0	100
1.5KE9.1CA	7.78	8.65	9.50	1	13.4	112.0	100
1.5KE10C	8.10	9.00	11.00	1	15.0	100.0	20
1.5KE10CA	8.55	9.50	10.50	1	14.5	103.0	20
1.5KE11C	8.92	9.90	12.10	1	16.2	93.0	10
1.5KE11CA	9.40	10.50	11.60	1	15.6	96.0	10
1.5KE12C	9.72	10.80	13.20	1	17.3	87.0	5
1.5KE12CA	10.20	11.40	12.60	1	16.7	90.0	5
1.5KE13C	10.50	11.70	14.30	1	19.0	79.0	5
1.5KE13CA	11.10	12.40	13.70	1	18.2	82.0	5
1.5KE15C	12.10	13.50	16.50	1	22.0	68.0	5
1.5KE15CA	12.80	14.30	15.80	1	21.2	71.0	5
1.5KE16C	12.90	14.40	17.60	1	23.5	64.0	5
1.5KE16CA	13.60	15.20	16.80	1	22.5	67.0	5
1.5KE18C	14.50	16.20	19.80	1	26.5	56.5	5
1.5KE18CA	15.30	17.10	18.90	1	25.2	59.5	5
1.5KE20C	16.20	18.00	22.00	1	29.1	51.5	5
1.5KE20CA	17.10	19.00	21.00	1	27.7	54.0	5
1.5KE22C	17.60	19.80	24.20	1	31.9	47.0	5
1.5KE22CA	18.80	20.90	23.10	1	30.6	49.0	5
1.5KE24C	19.40	21.60	26.40	1	34.7	43.0	5
1.5KE24CA	20.50	22.80	25.20	1	33.2	45.0	5
1.5KE27C	21.80	24.30	29.70	1	39.1	38.5	5
1.5KE27CA	23.10	25.70	28.40	1	37.5	40.0	5
1.5KE30C	24.30	27.00	33.00	1	43.5	34.5	5
1.5KE30CA	25.60	28.50	31.50	1	41.4	36.0	5
1.5KE33C	26.80	29.70	36.30	1	47.7	31.5	5
1.5KE33CA	28.20	31.40	34.70	1	45.7	33.0	5
1.5KE36C	29.10	32.40	39.60	1	52.0	29.0	5
1.5KE36CA	30.80	34.20	37.80	1	49.9	30.0	5
1.5KE39C	31.60	35.10	42.90	1	56.4	26.5	5
1.5KE39CA	33.30	37.10	41.00	1	53.9	28.0	5
1.5KE43C	34.80	38.70	47.30	1	61.9	24.0	5
1.5KE43CA	36.80	40.90	45.20	1	59.3	25.3	5
1.5KE47C	38.10	42.30	51.70	1	67.8	22.2	5
1.5KE47CA	40.20	44.70	49.40	1	64.8	23.2	5
1.5KE51C	41.30	45.90	56.10	1	73.5	20.4	5
1.5KE51CA	43.60	48.50	53.60	1	70.1	21.4	5



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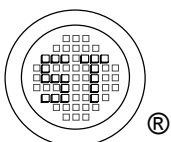


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## Bi-directional 1500W Axial Lead TVS

Unidirectional Part Number	Reverse Stand-off Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$ (V) MIN@ $I_T$	Breakdown Voltage $V_{BR}$ (V) MAX@ $I_T$	Test Current $I_T$ (mA)	Maximum Clamping Voltage @ $I_{rr}$ VC (V)	Peak Pulse Current $I_{pp}$ (A)	Reverse Leakage @ $V_{RWM}$ $I_R$ ( $\mu$ A)
1.5KE56C	45.60	50.40	61.60	1	80.5	18.6	5
1.5KE56CA	47.80	53.20	58.80	1	77.0	19.5	5
1.5KE62C	50.20	55.80	68.20	1	89.0	16.9	5
1.5KE62CA	53.00	58.90	65.10	1	85.0	17.7	5
1.5KE68C	55.10	61.20	74.80	1	98.0	15.3	5
1.5KE68CA	58.10	64.60	71.40	1	92.0	16.3	5
1.5KE75C	60.70	67.50	82.50	1	108.0	13.9	5
1.5KE75CA	64.10	71.30	78.80	1	103.0	14.6	5
1.5KE82C	66.40	73.80	90.20	1	118.0	12.7	5
1.5KE82CA	70.10	77.90	85.10	1	113.0	13.3	5
1.5KE91C	73.70	81.90	100.00	1	131.0	11.4	5
1.5KE91CA	77.80	86.50	95.50	1	125.0	12.0	5
1.5KE100C	81.00	90.00	110.00	1	144.0	10.4	5
1.5KE100CA	85.50	95.00	105.00	1	137.0	11.0	5
1.5KE110C	89.20	99.00	121.00	1	158.0	9.5	5
1.5KE110CA	94.00	105.00	116.00	1	152.0	9.9	5
1.5KE120C	97.20	108.00	132.00	1	173.0	8.7	5
1.5KE120CA	102.00	114.00	126.00	1	165.0	9.1	5
1.5KE130C	105.00	117.00	143.00	1	187.0	8.0	5
1.5KE130CA	111.00	124.00	137.00	1	179.0	8.4	5
1.5KE150C	121.00	135.00	165.00	1	215.0	7.0	5
1.5KE150CA	128.00	143.00	158.00	1	207.0	7.2	5
1.5KE160C	130.00	144.00	176.00	1	230.0	6.5	5
1.5KE160CA	136.00	152.00	168.00	1	219.0	6.8	5
1.5KE170C	138.00	153.00	187.00	1	244.0	6.2	5
1.5KE170CA	145.00	162.00	179.00	1	234.0	6.4	5
1.5KE180C	146.00	162.00	198.00	1	258.0	5.8	5
1.5KE180CA	154.00	171.00	189.00	1	246.0	6.1	5
1.5KE200C	162.00	180.00	220.00	1	287.0	5.2	5
1.5KE200CA	171.00	190.00	210.00	1	274.0	5.5	5
1.5KE220C	175.00	198.00	242.00	1	344.0	4.3	5
1.5KE220CA	185.00	209.00	231.00	1	328.0	4.6	5
1.5KE250C	202.00	225.00	275.00	1	360.0	4.3	5
1.5KE250CA	214.00	237.00	263.00	1	344.0	4.5	5
1.5KE300C	243.00	270.00	330.00	1	430.0	3.6	5
1.5KE300CA	256.00	285.00	315.00	1	414.0	3.8	5
1.5KE350C	284.00	315.00	385.00	1	504.0	3.1	5
1.5KE350CA	300.00	332.00	368.00	1	482.0	3.2	5
1.5KE400C	324.00	360.00	440.00	1	574.0	2.7	5
1.5KE400CA	342.00	380.00	420.00	1	548.0	2.8	5
1.5KE440C	356.00	396.00	484.00	1	631.0	2.4	5
1.5KE440CA	376.00	418.00	462.00	1	600.0	2.6	5



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Fig.1 Peak pulse power rating curve

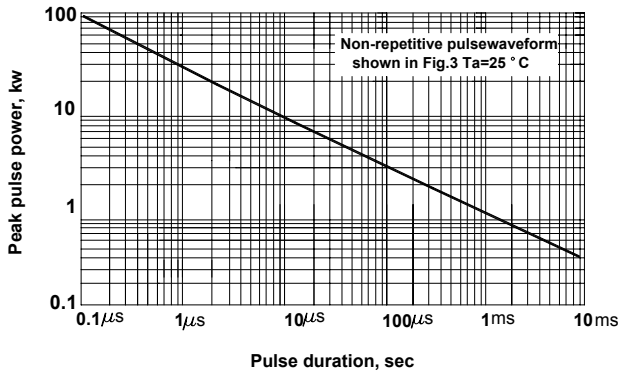


Fig.2 Pulse derating curve

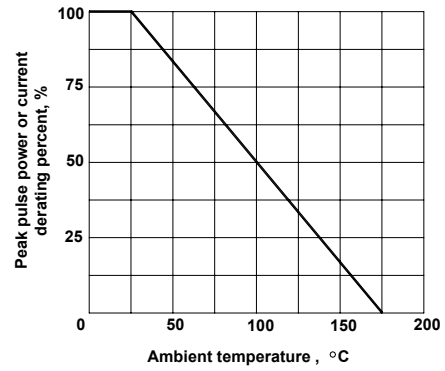


Fig.3 Pulse waveform

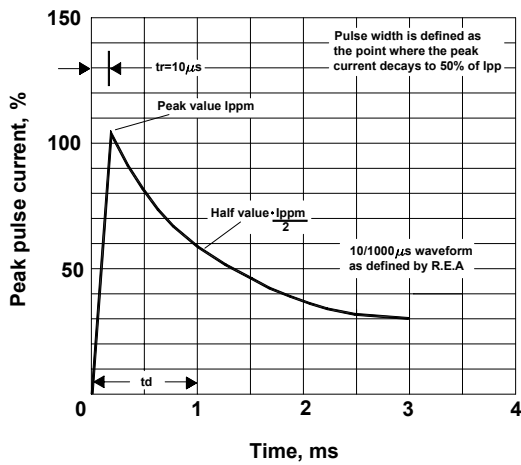


Fig.4 Typical junction capacitance unidirectional

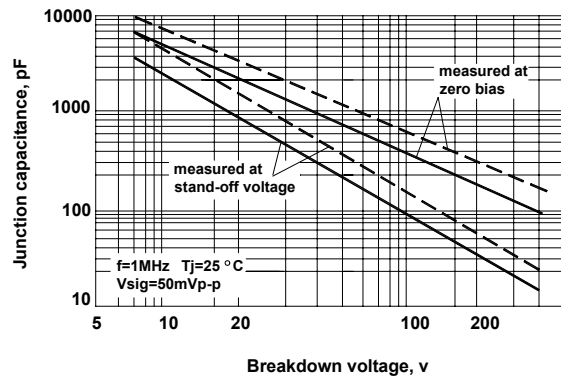


Fig.5 Steady state power derating curve

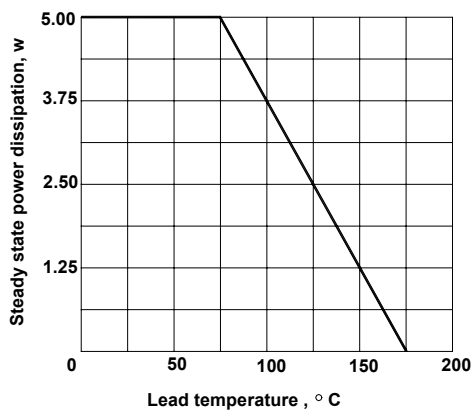
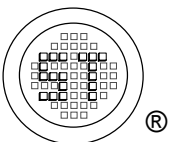
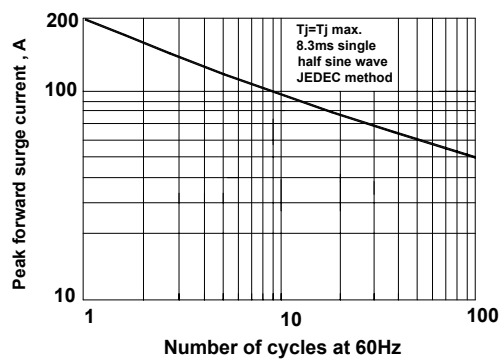


Fig.6 Maximum non-repetitive peak forward surge current unidirectional



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