Semiconductor *Data Sheet*

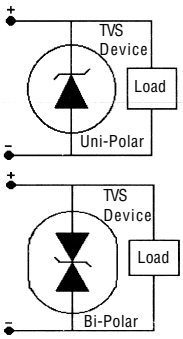
6.8V to 400V GPP TRANSIENT VOLTAGE SUPPRESSORS

1.5KE Series

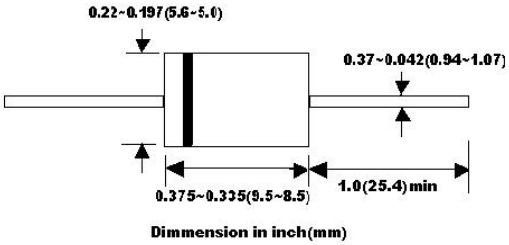
Description



DO-201AE



Mechanical Dimensions



Features

- **1500 WATT PEAK POWER PROTECTION**
- **EXCELLENT CLAMPING CAPABILITY**
- **FAST RESPONSE TIME**
- **TYPICAL I_R < 1μA ABOVE 10V**
- **GLASS PASSIVATED CHIP CONSTRUCTION**
- **MEETS UL SPECIFICATION 94V-0**

	1.5KE Series *(For Bi-Polar Applications, See Note 1)*	**Units**
Maximum Ratings		
Peak Power Dissipation...P_{PK}	1500 Min.	Watts
T_P = 1ms *(Note 5)*		
Steady State Power Dissipation...P_D	5.00	Watts
@ T_L = 75°C		
Non-Repetitive Peak Forward Surge Current...I_{FSM}	200	Amps
@ Rated Load Conditions, 8.3 ms, ½ Sine Wave, Single Phase		
(Note 3)		
Weight...G_{RM}	0.20	Grams
Soldering Requirements (Time & Temp)...S_T	11 Sec.	Min. to Solder
@ 250°C		
Operating & Storage Temperature Range...T_J, T_{STRG}	-65 to 175	°C

NOTES: 1. For Bi-Directional Applications, Use C or CA. Electrical Characteristics Apply in Both Directions.
2. Mounted on 40mm² Copper Pads.
3. 8.3 ms, ½ Sine Wave, Single Phase Duty Cycle, @ 4 Pulses Per Minute Maximum.
4. V_{BR} Measured After I_T Applies for 300 μs. I_T = Square Wave Pulse or Equivalent.
5. Non-Repetitive Current Pulse. Per Fig. 3 and Derated Above TA = 25°C Per Fig. 2.

6.8V to 400V GPP TRANSIENT VOLTAGE SUPPRESSORS

Fig. 1 Pulse Rating Curve

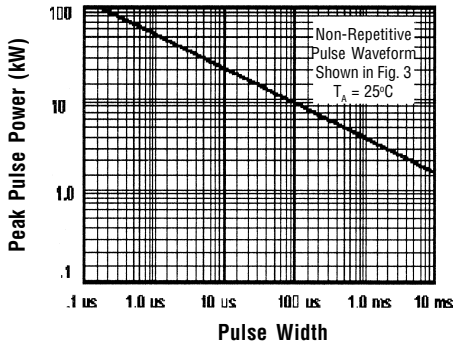


Fig. 4 Typical Junction Capacitance

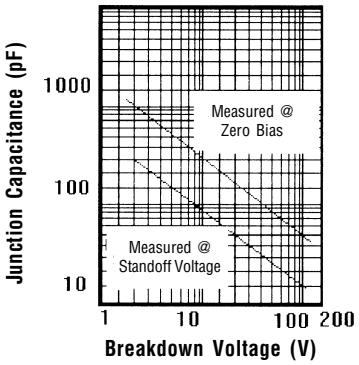


Fig. 2 Pulse Derating Curve

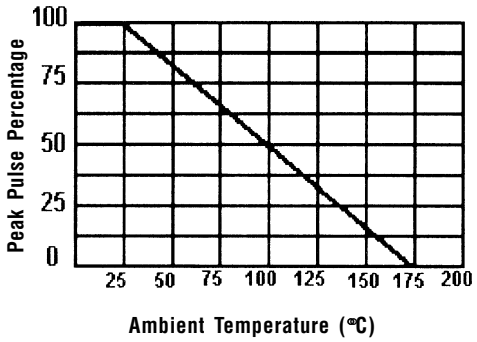


Fig. 5 Steady State Power Derating

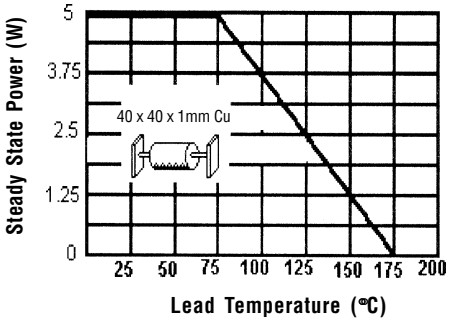


Fig. 3 Pulse Waveform

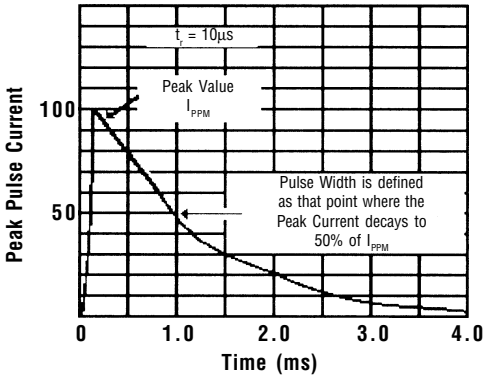
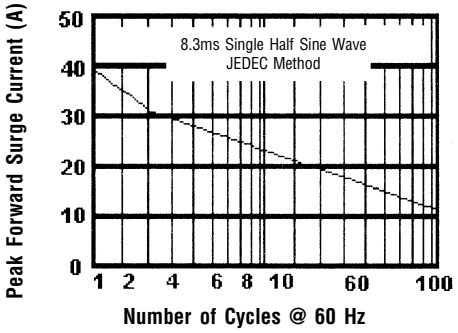


Fig. 6 Maximum Non-Repetitive Surge Current



Ratings at 25 Deg. C ambient temperature unless otherwise specified.

Single Phase Half Wave, 60 Hz Resistive or Inductive Load.

For Capacitive Load, Derate Current by 20%.

6.8V to 400V GPP TRANSIENT VOLTAGE SUPPRESSORS

DEVICE	Breakdown Voltage V_{BR} Volts *(Note 1)* Min.	Breakdown Voltage V_{BR} Volts *(Note 1)* Max.	@ I_T (mA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Leakage @ V_{RWM} I_R (µA)	Peak Pulse Current I_{PPM} (A) *(Note 2)*	Maximum Clamping Voltage @ I_{PPM} V_C (V)	Maximum Temperature Coefficient of V_{BR} % / °C
1.5KE-6.8	6.12	7.48	10.00	5.50	1000	139.00	10.80	0.057
1.5KE-6.8A	6.45	7.14	10.00	5.80	1000	143.00	10.50	0.057
1.5KE-7.5	6.75	8.25	10.00	6.05	500	128.00	11.70	0.061
1.5KE-7.5A	7.13	7.88	10.00	6.40	500	132.00	11.30	0.061
1.5KE-8.2	7.38	9.02	10.00	6.63	200	120.00	12.50	0.065
1.5KE-8.2A	7.79	8.61	10.00	7.02	200	124.00	12.10	0.065
1.5KE-9.1	8.19	10.00	1.00	7.37	50.00	109.00	13.80	0.068
1.5KE-9.1A	8.65	9.55	1.00	7.78	50.00	112.00	13.40	0.068
1.5KE-10	9.00	11.00	1.00	8.10	10.00	100.00	15.00	0.073
1.5KE-10A	9.50	10.50	1.00	8.55	10.00	103.00	14.50	0.073
1.5KE-11	9.90	12.10	1.00	8.92	5.00	93.00	16.20	0.075
1.5KE-11A	10.50	11.60	1.00	9.40	5.00	96.00	15.60	0.075
1.5KE-12	10.80	13.20	1.00	9.72	5.00	87.00	17.30	0.078
1.5KE-12A	11.40	12.60	1.00	10.20	5.00	90.00	16.70	0.078
1.5KE-13	11.70	14.30	1.00	10.50	5.00	79.00	19.00	0.081
1.5KE-13A	12.40	13.70	1.00	11.10	5.00	82.00	18.20	0.081
1.5KE-15	13.50	16.50	1.00	12.10	5.00	68.00	22.00	0.084
1.5KE-15A	14.30	15.80	1.00	12.80	5.00	71.00	21.20	0.084
1.5KE-16	14.40	17.60	1.00	12.90	5.00	64.00	23.50	0.086
1.5KE-16A	15.20	16.80	1.00	13.60	5.00	67.00	22.50	0.086
1.5KE-18	16.20	19.80	1.00	14.50	5.00	56.50	26.50	0.088
1.5KE-18A	17.10	18.90	1.00	15.30	5.00	59.50	25.20	0.088
1.5KE-20	18.00	22.00	1.00	16.20	5.00	51.50	29.10	0.090
1.5KE-20A	19.00	21.00	1.00	17.10	5.00	54.00	27.70	0.090
1.5KE-22	19.80	24.20	1.00	17.80	5.00	47.00	31.90	0.092
1.5KE-22A	20.90	23.10	1.00	18.80	5.00	49.00	30.60	0.092
1.5KE-24	21.60	26.40	1.00	19.40	5.00	43.00	34.70	0.094
1.5KE-24A	22.80	25.20	1.00	20.50	5.00	45.00	33.20	0.094
1.5KE-27	24.30	29.70	1.00	21.80	5.00	38.50	39.10	0.096
1.5KE-27A	25.70	28.40	1.00	23.10	5.00	40.00	37.50	0.096
1.5KE-30	27.00	33.00	1.00	24.30	5.00	34.50	43.50	0.097
1.5KE-30A	28.50	31.50	1.00	25.60	5.00	36.00	41.40	0.097
1.5KE-33	29.70	36.30	1.00	26.80	5.00	31.50	47.70	0.098
1.5KE-33A	31.40	34.70	1.00	28.20	5.00	33.00	45.70	0.098
1.5KE-36	32.40	39.60	1.00	29.10	5.00	29.00	52.00	0.099
1.5KE-36A	34.20	37.80	1.00	30.80	5.00	30.00	49.90	0.099
1.5KE-39	35.10	42.90	1.00	31.60	5.00	26.50	56.40	0.100
1.5KE-39A	37.10	41.00	1.00	33.30	5.00	28.00	53.90	0.100
1.5KE-43	38.70	47.30	1.00	34.80	5.00	24.00	61.90	0.101
1.5KE-43A	40.90	45.20	1.00	36.80	5.00	25.30	59.30	0.101
1.5KE-47	42.30	51.70	1.00	38.10	5.00	22.20	67.80	0.101
1.5KE-47A	44.70	49.40	1.00	40.20	5.00	23.20	64.80	0.101

6.8V to 400V GPP TRANSIENT VOLTAGE SUPPRESSORS

DEVICE	Breakdown Voltage			Working Peak Reverse Voltage	Maximum Reverse Leakage	Peak Pulse Current	Maximum Clamping Voltage	Maximum Temperature Coefficient
	V_{BR} Volts *(Note 1)*		@ I_T (mA)	V_{RWM} (V)	@ V_{RWM} I_R (μA)	I_{PPM} (A) *(Note 2)*	@ I_{PPM} V_C (V)	of V_{BR} % /°C
	Min.	Max.						
1.5KE-51	45.90	56.10	1.00	41.30	5.00	20.40	73.50	0.102
1.5KE-51A	48.50	53.60	1.00	43.60	5.00	21.40	70.10	0.102
1.5KE-56	50.40	61.60	1.00	45.40	5.00	18.60	80.50	0.103
1.5KE-56A	53.20	58.80	1.00	47.80	5.00	19.50	77.00	0.103
1.5KE-62	55.80	68.20	1.00	50.20	5.00	16.90	89.00	0.104
1.5KE-62A	58.90	65.10	1.00	53.00	5.00	17.70	85.00	0.104
1.5KE-68	61.20	74.80	1.00	55.10	5.00	15.30	98.00	0.104
1.5KE-68A	64.60	71.40	1.00	58.10	5.00	16.30	92.00	0.105
1.5KE-75	67.50	82.50	1.00	60.70	5.00	13.90	108.00	0.105
1.5KE-75A	71.30	78.80	1.00	64.10	5.00	14.60	103.00	0.105
1.5KE-82	73.80	90.20	1.00	66.40	5.00	12.70	118.00	0.105
1.5KE-82A	77.90	86.10	1.00	70.10	5.00	13.30	113.00	0.105
1.5KE-91	81.90	100.00	1.00	73.70	5.00	11.40	131.80	0.106
1.5KE-91A	86.50	95.50	1.00	77.80	5.00	12.00	125.00	0.106
1.5KE-100	90.00	110.00	1.00	81.00	5.00	10.40	144.00	0.106
1.5KE-100A	95.00	105.00	1.00	85.50	5.00	11.00	137.00	0.106
1.5KE-110	99.00	121.00	1.00	89.20	5.00	9.50	158.00	0.107
1.5KE-110A	105.00	116.00	1.00	94.00	5.00	9.90	152.00	0.107
1.5KE-120	108.00	132.00	1.00	97.20	5.00	8.70	173.00	0.107
1.5KE-120A	114.00	126.00	1.00	102.00	5.00	9.10	165.00	0.107
1.5KE-130	117.00	143.00	1.00	105.00	5.00	8.00	187.00	0.107
1.5KE-130A	124.00	137.00	1.00	111.00	5.00	8.40	179.00	0.107
1.5KE-150	135.00	165.00	1.00	121.00	5.00	7.00	215.00	0.108
1.5KE-150A	143.00	158.00	1.00	128.00	5.00	7.20	207.00	0.108
1.5KE-160	144.00	176.00	1.00	130.00	5.00	6.50	230.00	0.108
1.5KE-160A	152.00	168.00	1.00	136.00	5.00	6.80	219.00	0.108
1.5KE-170	153.00	187.00	1.00	138.00	5.00	6.20	244.00	0.108
1.5KE-170A	162.00	179.00	1.00	145.00	5.00	6.40	234.00	0.108
1.5KE-180	162.00	198.00	1.00	146.00	5.00	5.80	258.00	0.108
1.5KE-180A	171.00	189.00	1.00	154.00	5.00	6.10	246.00	0.108
1.5KE-200	180.00	220.00	1.00	162.00	5.00	5.20	287.00	0.108
1.5KE-200A	190.00	210.00	1.00	171.10	5.00	5.50	274.00	0.108
1.5KE-220	198.00	242.00	1.00	175.00	5.00	4.30	344.00	0.108
1.5KE-220A	209.00	231.00	1.00	185.00	5.00	4.60	328.00	0.108
1.5KE-250	225.00	275.00	1.00	202.00	5.00	5.00	360.00	0.110
1.5KE-250A	237.00	263.00	1.00	214.00	5.00	5.00	344.00	0.110
1.5KE-300	270.00	330.00	1.00	243.00	5.00	5.00	430.00	0.110
1.5KE-300A	285.00	315.00	1.00	256.00	5.00	5.00	414.00	0.110
1.5KE-350	315.00	385.00	1.00	284.00	5.00	4.00	504.00	0.110
1.5KE-350A	332.00	368.00	1.00	300.00	5.00	4.00	482.00	0.110
1.5KE-400	360.00	440.00	1.00	324.00	5.00	4.00	574.00	0.110
1.5KE-400A	380.00	420.00	1.00	342.00	5.00	4.00	548.00	0.110
1.5KE-440	396.00	484.00	1.00	356.00	5.00	2.30	630.00	0.113
1.5KE-440A	418.00	462.00	1.00	376.00	5.00	2.30	600.00	0.113

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ООО «НИОКР СИТЕМС»
Москва, 125362, Россия, ул. Вишневая, д. 9, к. 1, Блок 104 а и 104 в

Телефон: 8 (495) 268-14-82
Email: n@nsistems.ru

ИНН: 7735154786
ОГРН: 1167746717709