Semiconductor

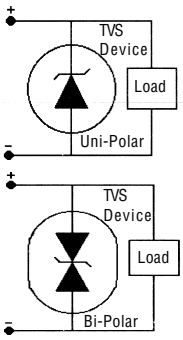
Data Sheet

6.8V to 400V GPP TRANSIENT VOLTAGE SUPPRESSORS

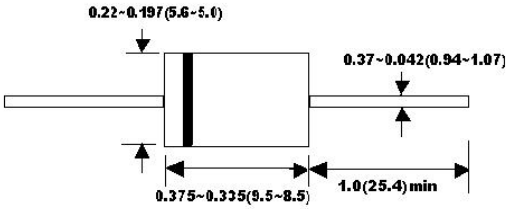
1.5KE Series

Description

DO-201AE



Mechanical Dimensions



Dimmension in inch(mm)

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} T_P = 1ms *(Note 5)*	1500 Min.	Watts
Steady State Power Dissipation...P_D @ T_L = 75°C	5.00	Watts
Non-Repetitive Peak Forward Surge Current...I_{FSM} @ Rated Load Conditions, 8.3 ms, ½ Sine Wave, Single Phase *(Note 3)*	200	Amps
Weight...G_{RM}	0.20	Grams
Soldering Requirements (Time & Temp)...S_T @ 250°C	11 Sec.	Min. to Solder
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.

Fig. 1 Pulse Rating Curve

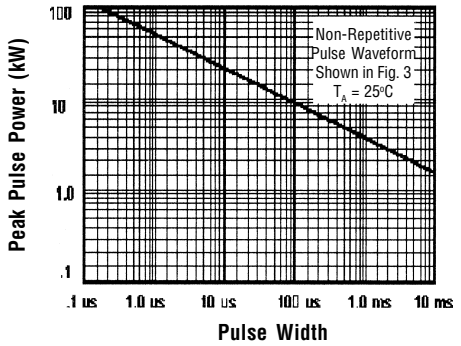


Fig. 4 Typical Junction Capacitance

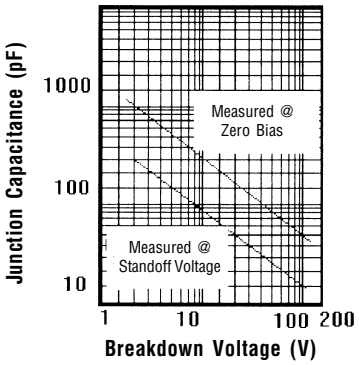


Fig. 2 Pulse Derating Curve

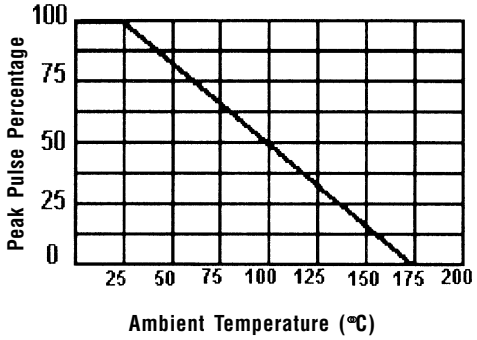


Fig. 5 Steady State Power Derating

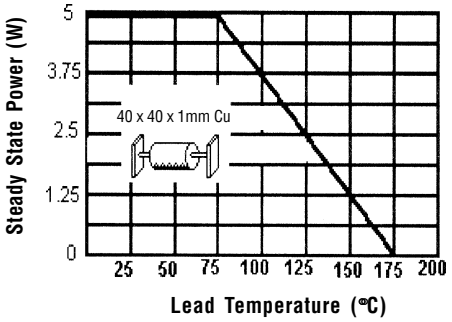


Fig. 3 Pulse Waveform

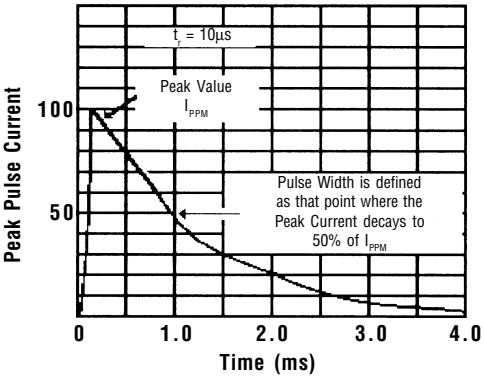
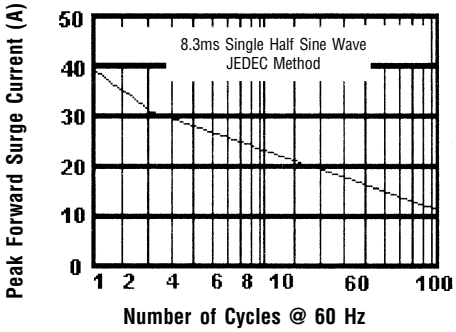


Fig. 6 Maximum Non-Repetitive Surge Current



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.	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

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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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