V. Transient Voltage Suppressor

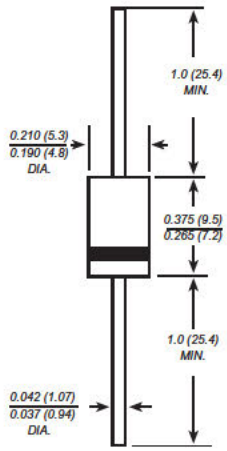
1500W TVS (Breakdown Voltage: 6.8~440 Volts)
1.5KE Series (Package: DO-201AE)

FEATURES

- 1500W peak pulse power capability
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time : Typically less than 1.0ps from 0 volts to $V_{(BR)}$ for uni-directional and 5.0ns for bi-directional types
- High temperature soldering guaranteed : 265℃/10 seconds/9.5mm lead length at 5 lbs. tension

MECHANICAL DATA

- Case : JEDEC DO-201AE molded plastic body over glass passivated junction
- Terminals : Plated axial leads, solderable per MIL-STD-750, Method 2026
- Polarity : Color band denotes cathode except for bi-directional types
- Mounting Position : Any
- Weight : 0.04 ounce, 1.10 grams



Case: DO-201AE
Dimensions in inches and (millimeters)

Devices for Bi-Directional Applications

For bi-directional devices, use suffix "CA" for types 1.5KE6.8 thru 1.5KE440 (e.g. 1.5KE6.8CA)
Electrical characteristics apply in both directions.

Maximum Ratings & Electrical Characteristics

(Ratings at 25℃ ambient temperature unless otherwise specified)

Ratings	Symbols	Value	Unit
Peak power dissipation (1)	P_{PPM}	Minimum 1500	Watts
Peak pulse reverse current (1) (see Fig. 3)	I_{PPM}	See Table 1	Amps
Steady state power dissipation (2)	$P_{M(AV)}$	5.0	Watts
Peak forward surge current (3)	I_{FSM}	200	Amps
Maximum instantaneous forward voltage at 100A for uni-directional only (4)	V_F	3.5 / 5.0	Volts
Operating junction and storage temperature range	Tj, Tstg	-55 to +175	℃

Note:
1. 10/1000μs waveform non-repetitive current pulse, per Fig.3 and derated above Ta = 25℃ per Fig.2
2. T_L = 75℃, lead lengths 9.5mm, mounted on copper pad area of (40 x 40mm) Fig. 5
3. Measured on 8.3ms single half sine-wave or equivalent square wave, Duty Cycle = 4 pulses per minute maximum
4. V_F = 3.5V max. for devices of $V_{(BR)} \leqq 200V$, and V_F = 5.0V max. for devices of $V_{(BR)} > 200V$

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Device Type	Breakdown Voltage $V_{(BR)}$ (Volts)(1)		Test Current I_T (mA)	Stand-off Voltage V_{WM} (Volts)	Maximum Reverse Leakage at V_{WM} I_R (3) (μA)	Maximum Peak Pulse Reverse Current I_{PPM} (2) (Amps)	Maximum Clamping Voltage at I_{PPM} V_C (Volts)	Maximum Temperature Coefficient of $V_{(BR)}$ (%/℃)
	Min.	Max.						
1.5KE6.8(C)A	6.45	7.14	10	5.80	1000	143	10.5	0.057
1.5KE7.5(C)A	7.13	7.88	10	6.40	500	133	11.3	0.061
1.5KE8.2(C)A	7.79	8.61	10	7.02	200	124	12.1	0.065
1.5KE9.1(C)A	8.65	9.55	1.0	7.78	50	112	13.4	0.068
1.5KE10(C)A	9.50	10.5	1.0	8.55	10	103	14.5	0.073
1.5KE11(C)A	10.5	11.6	1.0	9.40	5.0	96.2	15.6	0.075
1.5KE12(C)A	11.4	12.6	1.0	10.2	5.0	89.8	16.7	0.078
1.5KE13(C)A	12.4	13.7	1.0	11.1	5.0	82.4	18.2	0.081
1.5KE15(C)A	14.3	15.8	1.0	12.8	5.0	70.8	21.2	0.084
1.5KE16(C)A	15.2	16.8	1.0	13.6	5.0	66.7	22.5	0.086
1.5KE18(C)A	17.1	18.9	1.0	15.3	5.0	59.5	25.5	0.088
1.5KE20(C)A	19.0	21.0	1.0	17.1	5.0	54.2	27.7	0.090
1.5KE22(C)A	20.9	23.1	1.0	18.8	5.0	49.0	30.6	0.092
1.5KE24(C)A	22.8	25.2	1.0	20.5	5.0	45.2	33.2	0.094
1.5KE27(C)A	25.7	28.4	1.0	23.1	5.0	40.0	37.5	0.096
1.5KE30(C)A	28.5	31.5	1.0	25.6	5.0	36.2	41.4	0.097
1.5KE33(C)A	31.4	34.7	1.0	28.2	5.0	32.8	45.7	0.098
1.5KE36(C)A	34.2	37.8	1.0	30.8	5.0	30.1	49.9	0.099
1.5KE39(C)A	37.1	41.0	1.0	33.3	5.0	27.8	53.9	0.100
1.5KE43(C)A	40.9	45.2	1.0	36.8	5.0	25.3	59.3	0.101
1.5KE47(C)A	44.7	49.4	1.0	40.2	5.0	23.1	64.8	0.101
1.5KE51(C)A	48.5	53.6	1.0	43.6	5.0	21.4	70.1	0.102
1.5KE56(C)A	53.2	58.8	1.0	47.8	5.0	19.5	77.0	0.103
1.5KE62(C)A	58.9	65.1	1.0	53.0	5.0	17.6	85.0	0.104
1.5KE68(C)A	64.6	71.4	1.0	58.1	5.0	16.3	92.0	0.104
1.5KE75(C)A	71.3	78.8	1.0	64.1	5.0	14.6	103	0.105
1.5KE82(C)A	77.9	86.1	1.0	70.1	5.0	13.3	113	0.105
1.5KE91(C)A	86.5	95.5	1.0	77.8	5.0	12.0	125	0.106
1.5KE100(C)A	95.0	105	1.0	85.5	5.0	10.9	137	0.106
1.5KE110(C)A	105	116	1.0	94.0	5.0	9.9	152	0.107
1.5KE120(C)A	114	126	1.0	102	5.0	9.1	165	0.107
1.5KE130(C)A	124	137	1.0	111	5.0	8.4	179	0.107
1.5KE150(C)A	143	158	1.0	128	5.0	7.2	207	0.108
1.5KE160(C)A	152	168	1.0	136	5.0	6.8	219	0.108
1.5KE170(C)A	162	179	1.0	145	5.0	6.4	234	0.108
1.5KE180(C)A	171	189	1.0	154	5.0	6.1	246	0.108
1.5KE200(C)A	190	210	1.0	171	5.0	5.5	274	0.108
1.5KE220(C)A	209	231	1.0	185	5.0	4.6	328	0.108
1.5KE250(C)A	237	263	1.0	214	5.0	4.4	344	0.110
1.5KE300(C)A	285	315	1.0	256	5.0	3.6	414	0.110
1.5KE350(C)A	332	368	1.0	300	5.0	3.1	482	0.110
1.5KE400(C)A	380	420	1.0	342	5.0	2.7	548	0.110
1.5KE440(C)A	418	462	1.0	376	5.0	2.5	602	0.110

Note:
1. $V_{(BR)}$ measured after I_T applied for 300μs, I_T = square wave pulse or equivalent
2. Surge current waveform per Fig. 3 and derated per Fig. 2.
3. For bi-directional types having V_{WM} of 10 volts and less, the I_R limit is doubled
4. All items and symbols are consistent with ANSI/IEEE C62.35

Ratings and Characteristic Curves of 1.5KE Series

FIG. 1-PEAK PULSE POWER RATING CURVE

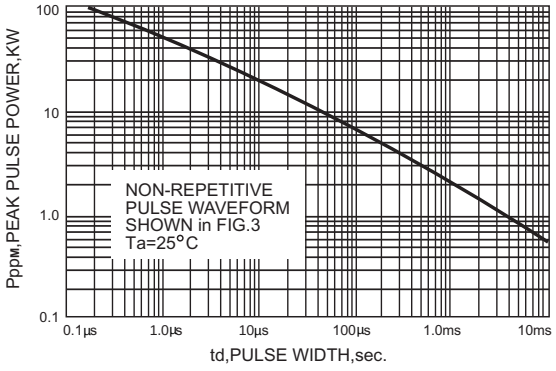

FIG. 2-PULSE DERATING CURVE

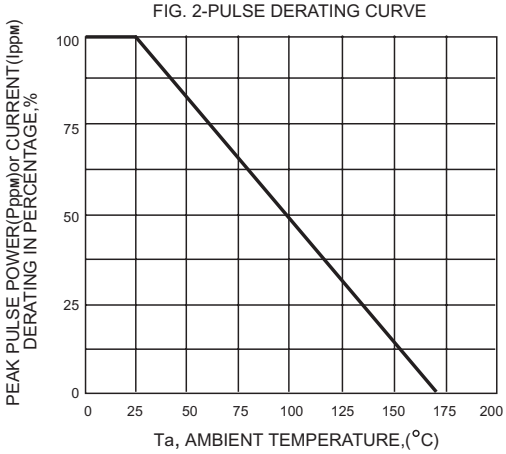

FIG.3-PULSE WAVEFORM

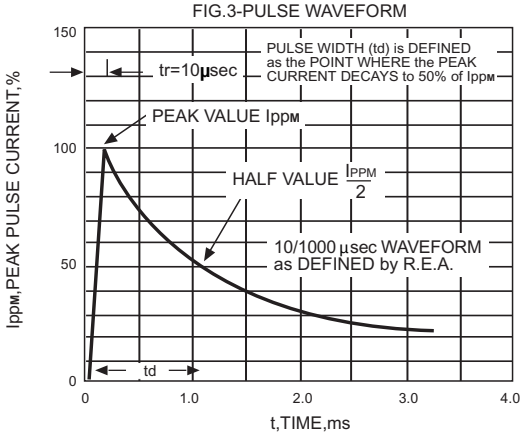

FIG. 4-TYPICAL JUNCTIONAL CAPACITANCE
UNIDIRECTIONAL

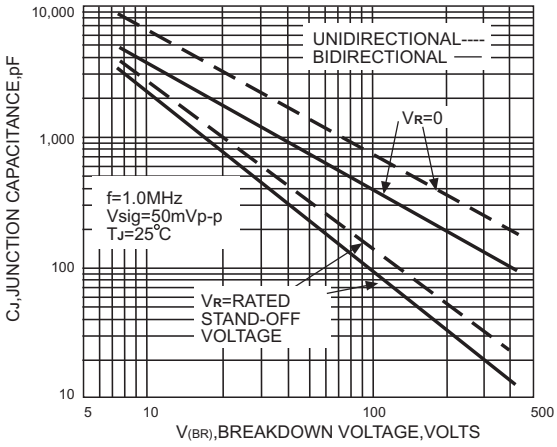

FIG.5-STEADY STATE POWER DERATING CURVE

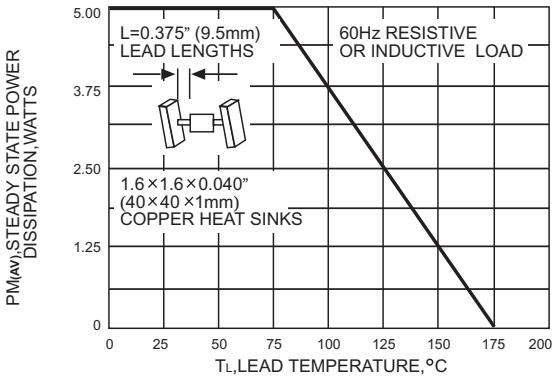

FIG.6-MAXIMUM NON-REPETITIVE FORWARD SURGE
CURRENT UNIDIRECTIONAL ONLY

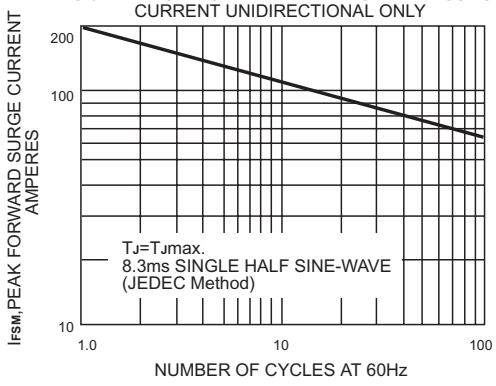

FIG.7-TYPICAL REVERSE LEAKAGE CHARACTERISTICS