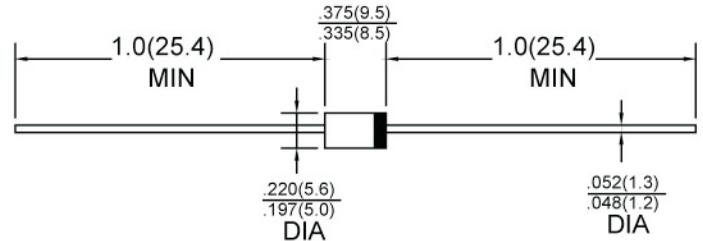


FEATURES

- Glass passivated chip junction
- Available in uni-directional & bi-directional
- 1500W surge capability at 10×100μs waveform, duty cycle: 0.01%
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1.0ps from 0 volts to V_{BR} for unidirection and 5.0 ns for bidirectional
- Typical I_R less 1 μA above 10V
- High temperature soldering capability 250°C / 10 seconds/.375" (9.5mm) lead length/5lbs., (2.3kg) tension

Voltage Range 6.8 to 440 Volts
1500 Watts Peak Power
6.5 Watts Steady State



DO-201AD

Dimensions in millimeters

MECHANICAL DATA

- Molded plastic body (UL 94V-0 rated)
- Axial leads, solderable per MIL-STD 202, Method 208
- Color band denotes cathode, except for bipolar
- Weight: 0.94 gram

MAXIMUM RATINGS & ELECTRICAL CHARACTERISTICS

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

Parameter	Symbol	Value	Unit
Peak Power Dissipation at T _A =25°C, T _p =1ms (Note 1)	P _{pk}	Minimum 1500	Watts
Steady State Power Dissipation at T _L =75°C Lead Lengths. ".375", 9.5mm (Note 2)	P _D	6.5	Watts
Peak Forward Surge Current, 8.3 ms Single Half sine-wave Superimposed on Rated Load (JEDEC method) (Note 3)	I _{FSM}	200	Amps
Maximum instanteneous forward voltage at 50.0A for unidirectional only (Note 4)	V _F	3.5/5.0	Volts
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +175	°C
Thermal Resistance Temperature	R _{θJA} R _{θJL}	75 15.4	°C/W

- NOTE:** 1. Non-repetitive Crrrent Pulse Per Fig-3 and Derated above T_A = 25°C Per Fig-2.
2. Mounted on Copper Pad Area of 0.8×0.8" (20×20mm) Per Fig-4
3. 8.3ms Single Half Sine-Wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minutes Maximum.
4. V_F = 3.5V for devices of V_{BR} = 200V and V_F = 5.0V max. for devices V_{BR} > 200V.

Devices for Bipolar Applications

1. Electrical Characteristics Apply in Both Directions.

RATING & CHARACTERISTIC CURVES

FIG 1-Peak Pulse Power Rating Curve

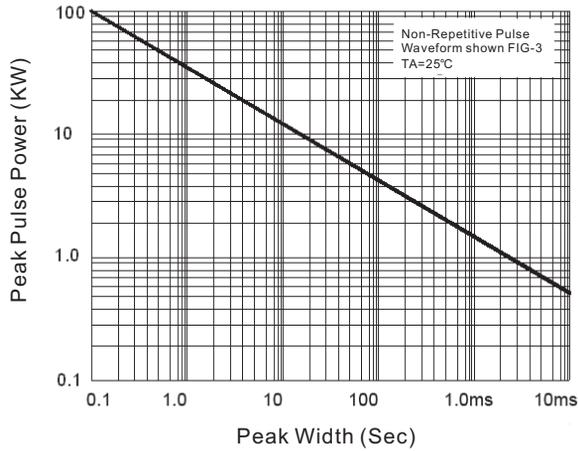


FIG 2-Pulse Power or Current VS Initial junction Temperature

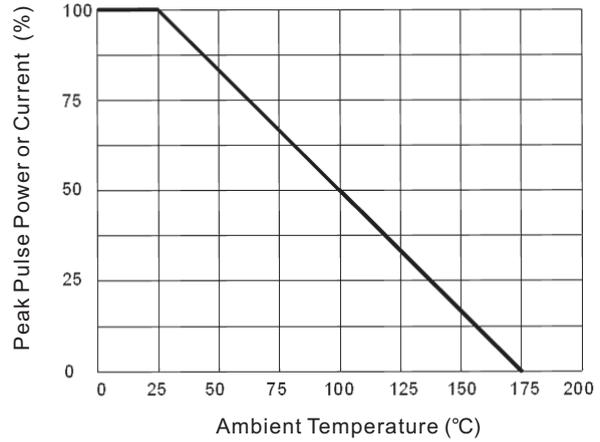


FIG 3-Pulse Waveform

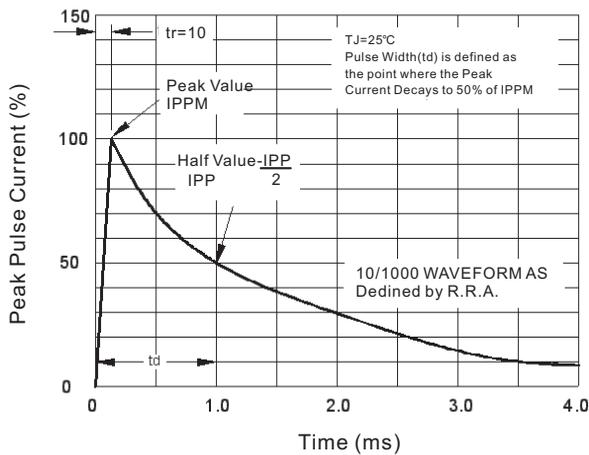


FIG 4-Power Derating Curve

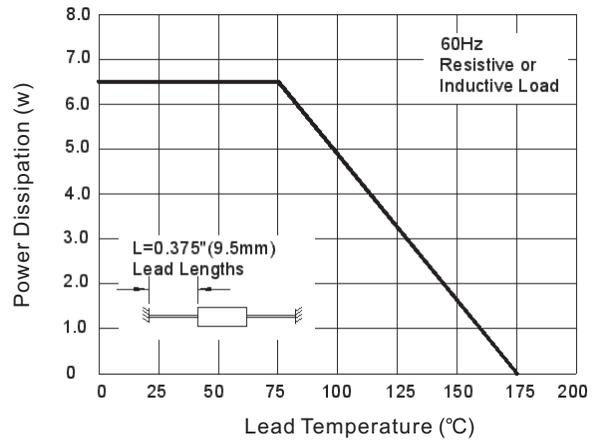


FIG 5-Maximum Non-Repetitive Surge Current

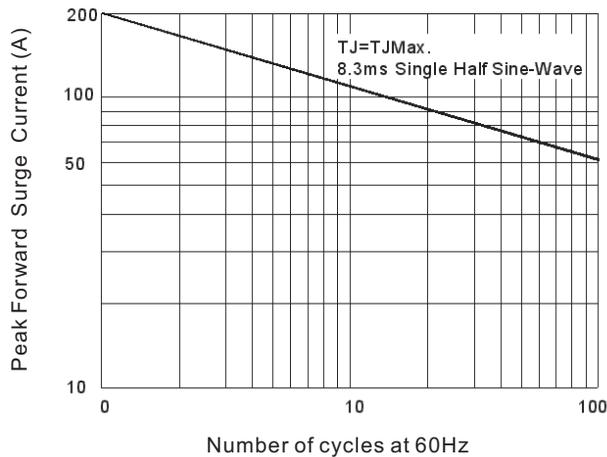
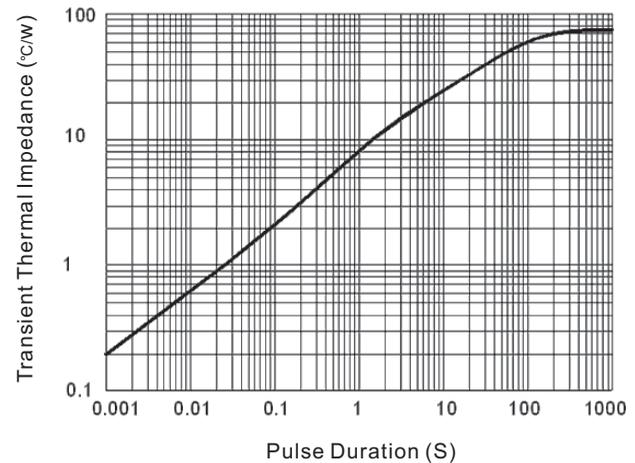


FIG 5-Maximum Non-Repetitive Surge Current



ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

Part Number Unidirectional	Part Number (Bidirectional)	Breakdown Voltage			Maximum Reverse Leakage at I _R V _{WM} (μ A)	V _{RWM} Working Peak Reverse Voltage V _{RWM} (V)	IPP Maximum Reverse Surge Current IPP (A)	Maximum Clamping Voltage at IPP V _c (Volts)	Maximum Temperature Coefficient of V _{BR} (%/°C)
		Min	Max	I _T (mA)					
1.5KE6.8	1.5KE6.8C	6.12	7.48	10	1000	5.50	139	10.8	0.057
1.5KE6.8A	1.5KE6.8CA	6.45	7.14	10	1000	5.80	143	10.5	0.057
1.5KE7.5	1.5KE7.5C	6.75	8.25	10	500	6.05	128	11.7	0.061
1.5KE7.5A	1.5KE7.5CA	7.13	7.88	10	500	6.40	133	11.3	0.061
1.5KE8.2	1.5KE8.2C	7.38	9.02	10	200	6.63	120	12.5	0.065
1.5KE8.2A	1.5KE8.2CA	7.79	8.61	10	200	7.02	124	12.1	0.065
1.5KE9.1	1.5KE9.1C	8.19	10.0	1.0	50	7.37	109	13.8	0.068
1.5KE9.1A	1.5KE9.1CA	8.65	9.55	1.0	50	7.78	112	13.4	0.068
1.5KE10	1.5KE10C	9.00	11.0	1.0	10	8.10	100	15.0	0.073
1.5KE10A	1.5KE10CA	9.50	10.5	1.0	10	8.55	103	14.5	0.073
1.5KE11	1.5KE11C	9.90	12.1	1.0	5.0	8.92	92.6	16.2	0.075
1.5KE11A	1.5KE11CA	10.5	11.6	1.0	5.0	9.40	96.2	15.6	0.075
1.5KE12	1.5KE12C	10.8	13.2	1.0	5.0	9.72	86.7	17.3	0.076
1.5KE12A	1.5KE12CA	11.4	12.6	1.0	5.0	10.2	89.8	16.7	0.078
1.5KE13	1.5KE13C	11.7	14.3	1.0	5.0	10.5	78.9	19.0	0.081
1.5KE13A	1.5KE13CA	12.4	13.7	1.0	5.0	11.1	82.4	18.2	0.081
1.5KE15	1.5KE15C	13.5	16.5	1.0	1.0	12.1	68.2	22.0	0.084
1.5KE15A	1.5KE15CA	14.3	15.8	1.0	1.0	12.8	70.8	21.2	0.084
1.5KE16	1.5KE16C	14.4	17.6	1.0	1.0	12.9	63.8	23.5	0.086
1.5KE16A	1.5KE16CA	15.2	16.8	1.0	1.0	13.6	66.7	22.5	0.086
1.5KE18	1.5KE18C	16.2	19.8	1.0	1.0	14.5	56.6	26.5	0.088
1.5KE18A	1.5KE18CA	17.1	18.9	1.0	1.0	15.3	59.5	25.2	0.089
1.5KE20	1.5KE20C	18.0	22.0	1.0	1.0	16.2	51.5	29.1	0.090
1.5KE20A	1.5KE20CA	19.0	21.0	1.0	1.0	17.1	54.2	27.7	0.090
1.5KE22	1.5KE22C	19.8	24.2	1.0	1.0	17.8	47.0	31.9	0.092
1.5KE22A	1.5KE22CA	20.9	23.1	1.0	1.0	18.8	49.0	30.6	0.092
1.5KE24	1.5KE24C	21.6	26.4	1.0	1.0	19.4	43.2	34.7	0.094
1.5KE24A	1.5KE24CA	22.8	25.2	1.0	1.0	20.5	45.2	33.2	0.094
1.5KE27	1.5KE27C	24.3	29.7	1.0	1.0	21.8	38.4	39.1	0.096
1.5KE27A	1.5KE27CA	25.7	28.4	1.0	1.0	23.1	40.0	37.5	0.096
1.5KE30	1.5KE30C	27.0	33.0	1.0	1.0	24.3	34.5	43.5	0.097
1.5KE30A	1.5KE30CA	28.5	31.5	1.0	1.0	25.6	36.2	41.4	0.097
1.5KE33	1.5KE33C	29.7	36.3	1.0	1.0	26.8	31.4	47.7	0.098
1.5KE33A	1.5KE33CA	31.4	34.7	1.0	1.0	28.2	32.8	45.7	0.098
1.5KE36	1.5KE36C	32.4	39.6	1.0	1.0	29.1	28.8	52.0	0.099
1.5KE36A	1.5KE36CA	34.2	37.8	1.0	1.0	30.8	30.1	49.9	0.099
1.5KE39	1.5KE39C	35.1	42.9	1.0	1.0	31.6	26.6	56.4	0.100
1.5KE39A	1.5KE39CA	37.1	41.0	1.0	1.0	33.3	27.8	53.9	0.100
1.5KE43	1.5KE43C	38.7	47.3	1.0	1.0	34.8	24.2	61.9	0.101
1.5KE43A	1.5KE43CA	40.9	45.2	1.0	1.0	36.8	25.3	59.3	0.101
1.5KE47	1.5KE47C	42.3	51.7	1.0	1.0	38.1	22.1	67.8	0.101
1.5KE47A	1.5KE47CA	44.7	49.4	1.0	1.0	40.2	23.1	64.8	0.101
1.5KE51	1.5KE51C	45.9	56.1	1.0	1.0	41.3	20.4	73.5	0.102
1.5KE51A	1.5KE51CA	48.5	53.6	1.0	1.0	43.6	21.4	70.1	0.102
1.5KE56	1.5KE56C	50.4	61.8	1.0	1.0	45.4	18.6	80.5	0.103
1.5KE56A	1.5KE56CA	53.2	58.8	1.0	1.0	47.8	19.5	77.0	0.103
1.5KE62	1.5KE62C	55.8	68.2	1.0	1.0	50.2	16.9	89.0	0.104
1.5KE62A	1.5KE62CA	58.9	65.1	1.0	1.0	53.0	17.6	85.0	0.104

Part Number Unidirectional	Part Number (Bidirectional)	Breakdown Voltage			Maximum Reverse Leakage at I _R V _{WM} (uA)	V _{RWM} Working Peak Reverse Voltage V _{RWM} (V)	IPP Maximum Reverse Surge Current IPP (A)	Maximum Clamping Voltage at IPP V _C (Volts)	Maximum Temperature Coefficient of V _{BR} (%/°C)
		Min	Max	I _T (mA)					
1.5KE68	1.5KE68C	61.2	74.8	1.0	1.0	55.1	15.3	98.0	0.104
1.5KE68A	1.5KE68CA	64.6	71.4	1.0	1.0	58.1	16.3	92.0	0.104
1.5KE75	1.5KE75C	67.5	82.5	1.0	1.0	60.7	13.9	109	0.105
1.5KE75A	1.5KE75CA	71.3	78.8	1.0	1.0	64.1	14.6	104	0.105
1.5KE82	1.5KE82C	73.8	90.2	1.0	1.0	66.4	12.7	118	0.105
1.5KE82A	1.5KE82CA	77.9	86.1	1.0	1.0	70.1	13.3	113	0.105
1.5KE91	1.5KE91C	81.9	100.0	1.0	1.0	73.7	11.5	131	0.106
1.5KE91A	1.5KE91CA	86.5	95.5	1.0	1.0	77.8	12.0	125	0.106
1.5KE100	1.5KE100C	90.0	110	1.0	1.0	81.0	10.4	144	0.106
1.5KE100A	1.5KE100CA	95.0	105	1.0	1.0	85.5	10.9	137	0.106
1.5KE110	1.5KE110C	99.0	121	1.0	1.0	89.2	9.5	158	0.107
1.5KE110A	1.5KE110CA	105	116	1.0	1.0	94.0	9.9	152	0.107
1.5KE120	1.5KE120C	108	132	1.0	1.0	97.2	8.7	173	0.107
1.5KE120A	1.5KE120CA	114	126	1.0	1.0	102	9.1	165	0.107
1.5KE130	1.5KE130C	117	143	1.0	1.0	105	8.0	187	0.107
1.5KE130A	1.5KE130CA	124	137	1.0	1.0	111	8.4	179	0.107
1.5KE150	1.5KE150C	136	165	1.0	1.0	121	7.0	215	0.108
1.5KE150A	1.5KE150CA	143	158	1.0	1.0	128	7.2	207	0.106
1.5KE160	1.5KE160C	144	176	1.0	1.0	130	6.5	230	0.106
1.5KE160A	1.5KE160CA	152	168	1.0	1.0	136	6.8	219	0.108
1.5KE170	1.5KE170C	153	187	1.0	1.0	138	6.1	244	0.108
1.5KE170A	1.5KE170CA	162	179	1.0	1.0	145	6.4	234	0.108
1.5KE180	1.5KE180C	162	198	1.0	1.0	146	5.8	258	0.108
1.5KE180A	1.5KE180CA	171	189	1.0	1.0	154	6.1	246	0.108
1.5KE200	1.5KE200C	180	220	1.0	1.0	162	5.2	287	0.108
1.5KE200A	1.5KE200CA	190	210	1.0	1.0	171	5.5	274	0.108
1.5KE220	1.5KE220C	198	242	1.0	1.0	175	4.4	344	0.108
1.5KE220A	1.5KE220CA	209	231	1.0	1.0	185	4.6	328	0.108
1.5KE250	1.5KE250C	225	275	1.0	1.0	202	4.2	360	0.110
1.5KE250A	1.5KE250CA	237	263	1.0	1.0	214	4.4	344	0.110
1.5KE300	1.5KE300C	270	330	1.0	1.0	243	3.5	430	0.110
1.5KE300A	1.5KE300CA	285	315	1.0	1.0	256	3.6	414	0.110
1.5KE350	1.5KE350C	315	385	1.0	1.0	284	3.0	504	0.110
1.5KE350A	1.5KE350CA	333	368	1.0	1.0	300	3.1	482	0.110
1.5KE400	1.5KE400C	360	440	1.0	1.0	324	2.6	574	0.110
1.5KE400A	1.5KE400CA	380	420	1.0	1.0	342	2.7	548	0.110
1.5KE440	1.5KE440C	396	484	1.0	1.0	356	2.4	631	0.110
1.5KE440A	1.5KE440CA	418	462	1.0	1.0	376	2.5	602	0.110
1.5KE480	1.5KE480C	432	528	1.0	1.0	389	2.19	686	0.110
1.5KE480A	1.5KE480CA	456	504	1.0	1.0	408	2.28	658	0.110
1.5KE510	1.5KE510C	459	561	1.0	1.0	413	2.06	729	0.110
1.5KE510A	1.5KE510CA	485	535	1.0	1.0	434	2.15	698	0.110
1.5KE540	1.5KE540C	486	594	1.0	1.0	437	1.94	772	0.110
1.5KE540A	1.5KE540CA	513	567	1.0	1.0	459	2.03	740	0.110

- NOTES:**
1. V_{BR} measured after I_T applied for 300us. I_T=square wave pulse or equivalent
 2. Surge current waveform per Fig-3 and derate per Fig-2.
 3. For bipolar types having V_R of 10 volts and under, the I_D limit is doubled.
 4. All terms and symbols are consistent with ANSI/IEEE C62.35
 5. For bidirectional use C or CA suffix for 1.5KE6.8 through 1.5KE440.
 6. A suffix is 5% tolerance, no suffix is 10% tolerance