1500W Transient Voltage Suppressor

Primary Characteristics	
V_{BR} unidirectional	6.8 V to 440 V
V_{BR} bidirectional	6.8 V to 200 V
P_{PPM}	1500 W
P_D	6.5 W
I_{FSM} (unidirectional only)	200 A
T_J max.	175°C
Polarity	Unidirectional, bidirectional

DO-201

Features

- Glass passivated chip junction
- Available in unidirectional and bidirectional
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Solder dip 275°C max.10 s, per JESD 22-B106

Applications

- Consumer, computer,
- Industrial, automotive and telecommunication
- Inductive load switching and lighting on ICs, MOSFET, signal lines.

Maximum Rated Values (at TJ = 25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000μs waveform (1) (fig. 1)	P_{PPM}	1500	W
Peak pulse current with a 10/1000μs waveform (1)	I_{PPM}	See next table	A
Power dissipation on infinite heat sink at TL=75°C (fig. 5)	P_D	6.5	W
Peak forward surge current 8.3ms single half sine-wave unidirectional only (2)	I_{FSM}	200	A
Maximum instantaneous forward voltage at 100A for unidirectional only (3)	V_F	3.5/5.0	V
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	°C

Note 1: Non-repetitive current pulse per fig. 3 and derated above TA=25°C per fig. 2
Note 2: Mounted on copper pad area of 0.6" x 0.6" (16mm x 16mm)
Note 3: VF=3.5V for devices of VBR ≤200V and VF=5.0V max. for devices VBR>200V

Electrical Characteristics (at TJ = 25°C unless otherwise specified)

JEDEC TYPE NUMBER	GENERAL PART NUMBER	Nominal Voltage	Breakdown Voltage VBR (V) (Note 1)		Test Current IT (mA)	Stand-Off Voltage VWM (V)	Maximum Reverse Leakage @ VWM IR (μA)	Maximum Peak Pulse Current IPPM (A) (Note 2)	Maximum Clamping Voltage @ IPPM Vc(V)	Maximum Temperature Coefficient of VBR(%/°C)
		V	Min	Max						
1N6267A	1.5KE6.8A	6.8	6.12	7.48	10	5.50	1000	145	10.8	0.057
1N6267CA	1.5KE6.8CA	6.8	6.45	7.14	10	5.80	1000	150	10.5	0.057
1N6268A	1.5KE7.5A	7.5	6.75	8.25	10	6.05	500	134	11.7	0.061

1N6268CA	1.5KE7.5CA	7.5	7.13	7.88	10	6.40	500	139	11.3	0.061
1N6269A	1.5KE8.2A	8.2	7.38	9.02	10	6.63	200	126	12.5	0.065
1N6269CA	1.5KE8.2CA	8.2	7.79	8.61	10	7.02	200	130	12.1	0.065
1N6270A	1.5KE9.1A	9.1	8.19	10.00	1.0	7.37	50	114	13.8	0.068
1N6270CA	1.5KE9.1CA	9.1	8.65	9.55	1.0	7.78	50	117	13.4	0.068
1N6271A	1.5KE10A	10	9.00	11.00	1.0	8.10	10	105	15.0	0.073
1N6271CA	1.5KE10CA	10	9.50	10.5	1.0	8.55	10	108	14.5	0.073
1N6272A	1.5KE11A	11	9.90	12.1	1.0	8.92	1	97	16.2	0.075
1N6272CA	1.5KE11CA	11	10.5	11.6	1.0	9.40	1	100	15.6	0.075
1N6273A	1.5KE12A	12	10.8	13.2	1.0	9.72	1	91	17.3	0.078
1N6273CA	1.5KE12CA	12	11.4	12.6	1.0	10.20	1	94	16.7	0.078
1N6274A	1.5KE13A	13	11.7	14.3	1.0	10.50	1	82	19.0	0.081
1N6274CA	1.5KE13CA	13	12.4	13.7	1.0	11.10	1	86	18.2	0.081
1N6275A	1.5KE15A	15	13.5	16.5	1.0	12.10	1	71	22.0	0.084
1N6275CA	1.5KE15CA	15	14.3	15.8	1.0	12.80	1	74	21.2	0.084
1N6276A	1.5KE16A	16	14.4	17.6	1.0	12.90	1	67	23.5	0.086
1N6276CA	1.5KE16CA	16	15.2	16.8	1.0	13.60	1	70	22.5	0.086
1N6277A	1.5KE18A	18	16.2	19.8	1.0	14.50	1	59	26.5	0.088
1N6277CA	1.5KE18CA	18	17.1	18.9	1.0	15.30	1	60	25.5	0.088
1N6278A	1.5KE20A	20	18.0	22.0	1.0	16.20	1	54	29.1	0.090
1N6278CA	1.5KE20CA	20	19.0	21.0	1.0	17.10	1	56	27.7	0.090
1N6279A	1.5KE22A	22	19.8	24.2	1.0	17.80	1	49	31.9	0.092
1N6279CA	1.5KE22CA	22	20.9	23.1	1.0	18.80	1	51	30.6	0.092
1N6280A	1.5KE24A	24	21.6	26.4	1.0	19.40	1	45	34.7	0.094
1N6280CA	1.5KE24CA	24	22.8	25.2	1.0	20.50	1	47	33.2	0.094
1N6281A	1.5KE27A	27	24.3	29.7	1.0	21.80	1	40	39.1	0.096
1N6281CA	1.5KE27CA	27	25.7	28.4	1.0	23.10	1	42	37.5	0.096
1N6282A	1.5KE30A	30	27.0	33.0	1.0	24.30	1	36	43.5	0.097
1N6282CA	1.5KE30CA	30	28.5	31.5	1.0	25.60	1	38	41.4	0.097
1N6283A	1.5KE33A	33	29.7	36.3	1.0	26.80	1	33	47.7	0.098
1N6283CA	1.5KE33CA	33	31.4	34.7	1.0	28.20	1	34	45.7	0.098
1N6284A	1.5KE36A	36	32.4	39.6	1.0	29.10	1	30	52.0	0.099
1N6284CA	1.5KE36CA	36	34.2	37.8	1.0	30.80	1	31	49.9	0.099
1N6285A	1.5KE39A	39	35.1	42.9	1.0	31.60	1	27	56.4	0.100
1N6285CA	1.5KE39CA	39	37.1	41.0	1.0	33.30	1	29	53.9	0.100
1N6286A	1.5KE43A	43	38.7	47.3	1.0	34.80	1	25	61.9	0.101
1N6286CA	1.5KE43CA	43	40.9	45.2	1.0	36.80	1	26	59.3	0.101
1N6287A	1.5KE47A	47	42.3	51.7	1.0	38.10	1	23	67.8	0.101
1N6287CA	1.5KE47CA	47	44.7	49.4	1.0	40.20	1	24	64.8	0.101
1N6288A	1.5KE51A	51	45.9	56.1	1.0	41.30	1	21	73.5	0.102
1N6288CA	1.5KE51CA	51	48.5	53.6	1.0	43.60	1	22	70.1	0.102
1N6289A	1.5KE56A	56	50.4	61.6	1.0	45.40	1	19	80.5	0.103
1N6289CA	1.5KE56CA	56	53.2	58.8	1.0	47.80	1	20	77.0	0.103

1N6290A	1.5KE62A	62	55.8	68.2	1.0	50.2	1	17	89.0	0.104
1N6290CA	1.5KE62CA	62	58.9	65.1	1.0	53.0	1	18	85.0	0.104
1N6291A	1.5KE68A	68	61.2	74.8	1.0	55.1	1	16	98.0	0.104
1N6291CA	1.5KE68CA	68	64.6	71.4	1.0	58.1	1	17	92.0	0.104
1N6292A	1.5KE75A	75	67.5	82.5	1.0	60.7	1	14	108	0.105
1N6292CA	1.5KE75CA	75	71.3	78.8	1.0	64.1	1	15	103	0.105
1N6293A	1.5KE82A	82	73.8	90.2	1.0	66.4	1	13	118	0.105
1N6293CA	1.5KE82CA	82	77.9	86.1	1.0	70.1	1	13.9	113	0.105
1N6294A	1.5KE91A	91	81.9	100	1.0	73.7	1	12	131	0.106
1N6294CA	1.5KE91CA	91	86.5	95.5	1.0	77.8	1	12.6	125	0.106
1N6295A	1.5KE100A	100	90	110	1.0	81.0	1	10.9	144	0.106
1N6295CA	1.5KE100CA	100	95	105	1.0	85.5	1	11.4	137	0.106
1N6296A	1.5KE110A	110	99	121	1.0	89.2	1	9.9	158	0.107
1N6296CA	1.5KE110CA	110	105	116	1.0	94.0	1	10.3	152	0.107
1N6297A	1.5KE120A	120	108	132	1.0	97.2	1	9.1	173	0.107
1N6297CA	1.5KE120CA	120	114	126	1.0	102	1	9.5	165	0.107
1N6298A	1.5KE130A	130	117	143	1.0	105	1	8.4	187	0.107
1N6298CA	1.5KE130CA	130	124	137	1.0	111	1	8.7	179	0.107
1N6299	1.5KE150A	150	135	165	1.0	121	1	7.3	215	0.108
1N6299CA	1.5KE150CA	150	143	158	1.0	128	1	7.6	207	0.108
1N6300A	1.5KE160A	160	144	176	1.0	130	1	6.8	230	0.108
1N6300CA	1.5KE160CA	160	152	168	1.0	136	1	7.1	219	0.108
1N6301A	1.5KE170A	170	153	187	1.0	138	1	6.4	244	0.108
1N6301CA	1.5KE170CA	170	162	179	1.0	145	1	6.7	234	0.108
1N6302A	1.5KE180A	180	162	198	1.0	146	1	6.1	258	0.108
1N6302CA	1.5KE180CA	180	171	189	1.0	154	1	6.4	246	0.108
1N6303A	1.5KE200A	200	180	220	1.0	162	1	5.4	287	0.108
1N6303CA	1.5KE200CA	200	190	210	1.0	171	1	5.7	274	0.108
	1.5KE220A	220	198	242	1.0	175	1	4.5	344	0.110
	1.5KE220CA	220	209	231	1.0	185	1	4.8	328	0.110
	1.5KE250A	250	225	275	1.0	202	1	4.3	360	0.110
	1.5KE250CA	250	237	263	1.0	214	1	4.5	344	0.110
	1.5KE300A	300	270	330	1.0	243	1	3.6	430	0.110
	1.5KE300CA	300	285	315	1.0	256	1	3.8	414	0.110
	1.5KE350A	350	315	385	1.0	284	1	3.1	504	0.110
	1.5KE350CA	350	333	368	1.0	300	1	3.2	482	0.110
	1.5KE400A	400	360	440	1.0	324	1	2.7	574	0.110
	1.5KE400CA	400	380	420	1.0	342	1	2.8	548	0.110
	1.5KE440A	440	396	484	1.0	356	1	2.4	631	0.110
	1.5KE440CA	440	418	462	1.0	376	1	2.5	602	0.110

Notes:
1. VBR measure after IT applied for 300 μs, IT=square wave pulse or equivalent.
2. Surge current waveform per figure. 3 and derate per figure. 2.
3. For bipolar types having VWM of 10 volts and under, the IR limit is doubled.
4. All terms and symbols are consistent with ANSI/IEEE C62.35.

Typical Characteristics Curves

FIG. 1 PEAK PULSE POWER RATING CURVE

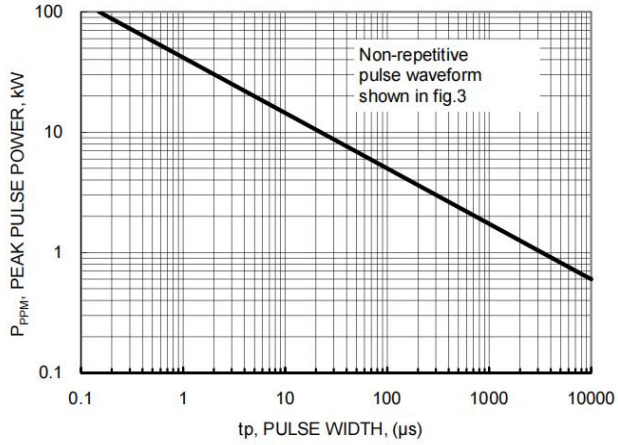


FIG.2 PULSE DERATING CURVE

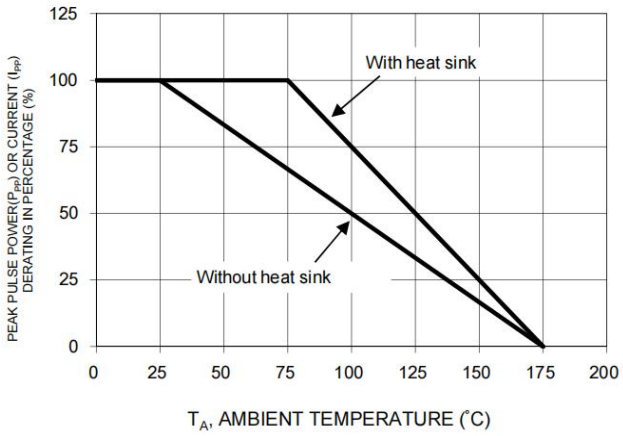


FIG. 3 CLAMPING POWER PULSE WAVEFORM

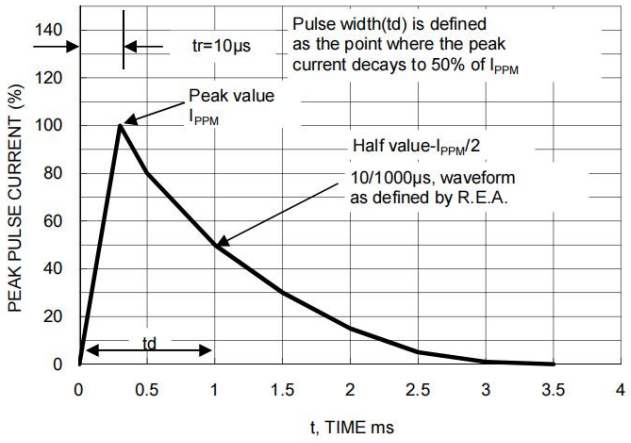


FIG. 4 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

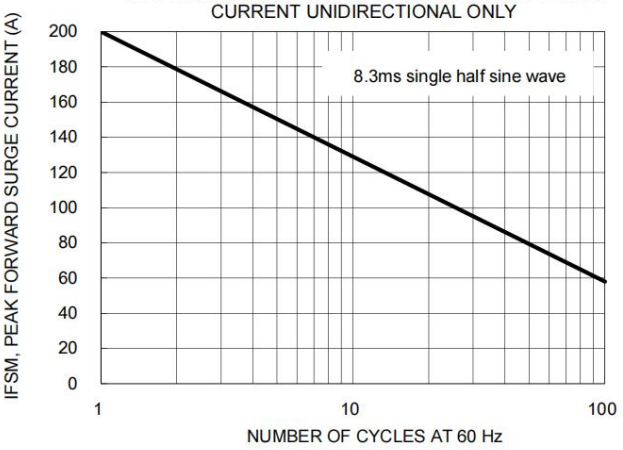
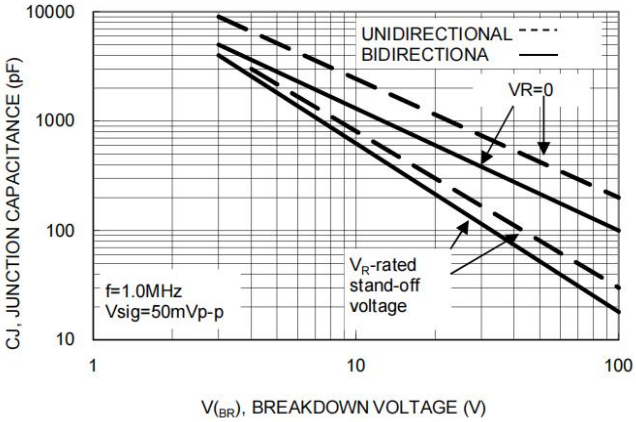
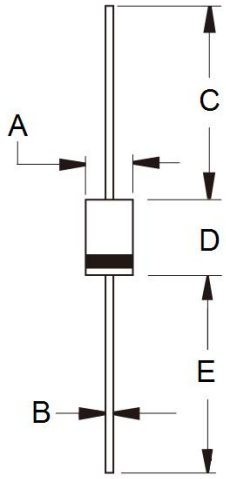


FIG. 5 TYPICAL JUNCTION CAPACITANCE



Package Outlines



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	5.00	5.60	0.197	0.220
B	0.96	1.20	0.38	0.047
C	25.40	-	1.000	-
D	8.50	9.50	0.335	0.375
E	25.40	-	1.000	-

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