1500W, 6.8 - 550V Transient Voltage Suppressors

Features

- Very fast response time
- Glass passivated junction
- Excellent clamping capability
- Available in unidirectional and bidirectional
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- 1500 W peak pulse power capability with a 10/1000 μs waveform

DO-201AE

Applications

- SMPS
- Adapters
- Monitor

Absolute Maximum Ratings (TA=25°C unless otherwise noted)			
Parameter	**Symbol**	**Ratings**	**Unit**
Peak power dissipation with a 10/1000us waveform	P_{PPM}	1500	W
Peak pulse current with a 10/1000us waveform	I_{PPM}	See Next Table	A
Power dissipation, on infinite heat sink at T_L=75℃	P_D	6.5	W
Peak forward surge current, 8.3ms single half-sine wave	I_{FSM}	200	A
Typical Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	75	℃/W
Typical Thermal Resistance , Junction to Case	$R_{\theta JC}$	35	℃/W
Typical Thermal Resistance , Junction to Lead	$R_{\theta JL}$	20	℃/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	℃

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage VBR (Volts)		Test Current I_T (mA)	Stand off Voltage V_{WM} (Volts)	Maximum reverse leakage at VWM I_D (μA)	Maximum Peak Pulse Current I_{ppM} (A)	Maximum Clamping Voltage at I_{PPM} V_C(Volts)
		Min	Max					
1.5KE6.8	1.5KE6.8C	6.12	7.48	10.0	5.50	1000	139	10.8
1.5KE6.8A	1.5KE6.8CA	6.45	7.14	10.0	5.80	1000	143	10.5
1.5KE7.5	1.5KE7.5C	6.75	8.25	10.0	6.05	500	128	11.7
1.5KE7.5A	1.5KE7.5CA	7.13	7.88	10.0	6.40	500	133	11.3
1.5KE8.2	1.5KE8.2C	7.38	9.02	10.0	6.63	200	120	12.5
1.5KE8.2A	1.5KE8.2CA	7.79	8.61	10.0	7.02	200	124	12.1
1.5KE9.1	1.5KE9.1C	8.19	10.00	1.0	7.37	50	109	13.8
1.5KE9.1A	1.5KE9.1CA	8.65	9.55	1.0	7.78	50	112	13.4
1.5KE10	1.5KE10C	9.0	11.0	1.0	8.10	10	100	15.0
1.5KE10A	1.5KE10CA	9.5	10.5	1.0	8.55	10	103	14.5
1.5KE11	1.5KE11C	9.9	12.1	1.0	8.92	5.0	92.6	16.2
1.5KE11A	1.5KE11CA	10.5	11.6	1.0	9.40	5.0	96.2	15.6
1.5KE12	1.5KE12C	10.8	13.2	1.0	9.72	5.0	86.7	17.3
1.5KE12A	1.5KE12CA	11.4	12.6	1.0	10.2	5.0	89.8	16.7
1.5KE13	1.5KE13C	11.7	14.3	1.0	10.5	5.0	78.9	19.0
1.5KE13A	1.5KE13CA	12.4	13.7	1.0	11.1	5.0	82.4	18.2
1.5KE15	1.5KE15C	13.5	16.5	1.0	12.1	1.0	68.2	22.0
1.5KE15A	1.5KE15CA	14.3	15.8	1.0	12.8	1.0	70.8	21.2
1.5KE16	1.5KE16C	14.4	17.6	1.0	12.9	1.0	63.8	23.5
1.5KE16A	1.5KE16CA	15.2	16.8	1.0	13.6	1.0	66.7	22.5
1.5KE18	1.5KE18C	16.2	19.8	1.0	14.5	1.0	56.6	26.5
1.5KE18A	1.5KE18CA	17.1	18.9	1.0	15.3	1.0	59.5	25.2
1.5KE20	1.5KE20C	18.0	22.0	1.0	16.2	1.0	51.5	29.1
1.5KE20A	1.5KE20CA	19.0	21.0	1.0	17.1	1.0	54.2	27.7
1.5KE22	1.5KE22C	19.8	24.2	1.0	17.8	1.0	47.0	31.9
1.5KE22A	1.5KE22CA	20.9	23.1	1.0	18.8	1.0	49.0	30.6
1.5KE24	1.5KE24C	21.6	26.4	1.0	19.4	1.0	43.2	34.7
1.5KE24A	1.5KE24CA	22.8	25.2	1.0	20.5	1.0	45.2	33.2
1.5KE27	1.5KE27C	24.3	29.7	1.0	21.8	1.0	38.4	39.1
1.5KE27A	1.5KE27CA	25.7	28.4	1.0	23.1	1.0	40.0	37.5
1.5KE30	1.5KE30C	27.0	33.0	1.0	24.3	1.0	34.5	43.5
1.5KE30A	1.5KE30CA	28.5	31.5	1.0	25.6	1.0	36.2	41.4
1.5KE33	1.5KE33C	29.7	36.3	1.0	26.8	1.0	31.4	47.7
1.5KE33A	1.5KE33CA	31.4	34.7	1.0	28.2	1.0	32.8	45.7

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage VBR (Volts)		Test Current I_T (mA)	Stand off Voltage V_{WM} (Volts)	Maximum reverse leakage at VWM I_D (μA)	Maximum Peak Pulse Current I_{ppM} (A)	Maximum Clamping Voltage at I_{PPM} V_C(Volts)
		Min	Max					
1.5KE36	1.5KE36C	32.4	39.6	1.0	29.1	1.0	28.8	52.0
1.5KE36A	1.5KE36CA	34.2	37.8	1.0	30.8	1.0	30.1	49.9
1.5KE39	1.5KE39C	35.1	42.9	1.0	31.6	1.0	26.6	56.4
1.5KE39A	1.5KE39CA	37.1	41.0	1.0	33.3	1.0	27.8	53.9
1.5KE43	1.5KE43C	38.7	47.3	1.0	34.8	1.0	24.2	61.9
1.5KE43A	1.5KE43CA	40.9	45.2	1.0	36.8	1.0	25.3	59.3
1.5KE47	1.5KE47C	42.3	51.7	1.0	38.1	1.0	22.1	67.8
1.5KE47A	1.5KE47CA	44.7	49.4	1.0	40.2	1.0	23.1	64.8
1.5KE51	1.5KE51C	45.9	56.1	1.0	41.3	1.0	20.4	73.5
1.5KE51A	1.5KE51CA	48.5	53.6	1.0	43.6	1.0	21.4	70.1
1.5KE56	1.5KE56C	50.4	61.6	1.0	45.4	1.0	18.6	80.5
1.5KE56A	1.5KE56CA	53.2	58.8	1.0	47.8	1.0	19.5	77.0
1.5KE62	1.5KE62C	55.8	68.2	1.0	50.2	1.0	16.9	89.0
1.5KE62A	1.5KE62CA	58.9	65.1	1.0	53.0	1.0	17.6	85.0
1.5KE68	1.5KE68C	61.2	74.8	1.0	55.1	1.0	15.3	98.0
1.5KE68A	1.5KE68CA	64.6	71.4	1.0	58.1	1.0	16.3	92.0
1.5KE75	1.5KE75C	67.5	82.5	1.0	60.7	1.0	13.9	108
1.5KE75A	1.5KE75CA	71.3	78.8	1.0	64.1	1.0	14.6	103
1.5KE82	1.5KE82C	73.8	90.2	1.0	66.4	1.0	12.7	118
1.5KE82A	1.5KE82CA	77.9	86.1	1.0	70.1	1.0	13.3	113
1.5KE91	1.5KE91C	81.9	100	1.0	73.7	1.0	11.5	131
1.5KE91A	1.5KE91CA	86.5	95.5	1.0	77.8	1.0	12.0	125
1.5KE100	1.5KE100C	90	110	1.0	81.0	1.0	10.4	144
1.5KE100A	1.5KE100CA	95	105	1.0	85.5	1.0	10.9	137
1.5KE110	1.5KE110C	99	121	1.0	89.2	1.0	9.5	158
1.5KE110A	1.5KE110CA	105	116	1.0	94.0	1.0	9.9	152
1.5KE120	1.5KE120C	108	132	1.0	97.2	1.0	8.7	173
1.5KE120A	1.5KE120CA	114	126	1.0	102	1.0	9.1	165
1.5KE130	1.5KE130C	117	143	1.0	105	1.0	8.0	187
1.5KE130A	1.5KE130CA	124	137	1.0	111	1.0	8.4	179
1.5KE150	1.5KE150C	135	165	1.0	121	1.0	7.0	215
1.5KE150A	1.5KE150CA	143	158	1.0	128	1.0	7.2	207
1.5KE160	1.5KE160C	144	176	1.0	130	1.0	6.5	230
1.5KE160A	1.5KE160CA	152	168	1.0	136	1.0	6.8	219

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage VBR (Volts)		Test Current I_T (mA)	Stand off Voltage V_{WM} (Volts)	Maximum reverse leakage at VWM I_D (μA)	Maximum Peak Pulse Current I_{ppM} (A)	Maximum Clamping Voltage at I_{PPM} V_C(Volts)
		Min	Max					
1.5KE170	1.5KE170C	153	187	1.0	138	1.0	6.1	244
1.5KE170A	1.5KE170CA	162	179	1.0	145	1.0	6.4	234
1.5KE180	1.5KE180C	162	198	1.0	146	1.0	5.8	258
1.5KE180A	1.5KE180CA	171	189	1.0	154	1.0	6.1	246
1.5KE200	1.5KE200C	180	220	1.0	162	1.0	5.2	287
1.5KE200A	1.5KE200CA	190	210	1.0	171	1.0	5.5	274
1.5KE220	1.5KE220C	198	242	1.0	175	1.0	4.4	344
1.5KE220A	1.5KE220CA	209	231	1.0	185	1.0	4.6	328
1.5KE250	1.5KE250C	225	275	1.0	202	1.0	4.2	360
1.5KE250A	1.5KE250CA	237	263	1.0	214	1.0	4.4	344
1.5KE300	1.5KE300C	270	330	1.0	243	1.0	3.5	430
1.5KE300A	1.5KE300CA	285	315	1.0	256	1.0	3.6	414
1.5KE350	1.5KE350C	315	385	1.0	284	1.0	3.0	504
1.5KE350A	1.5KE350CA	332	368	1.0	300	1.0	3.1	482
1.5KE400	1.5KE400C	360	440	1.0	324	1.0	2.6	574
1.5KE400A	1.5KE400CA	380	420	1.0	342	1.0	2.7	548
1.5KE440	1.5KE440C	396	484	1.0	356	1.0	2.4	631
1.5KE440A	1.5KE440CA	418	462	1.0	376	1.0	2.5	602
1.5KE480A	1.5KE480CA	456	504	1.0	408	1.0	2.3	658
1.5KE510A	1.5KE510CA	485	535	1.0	434	1.0	2.1	698
1.5KE530A	1.5KE530CA	503.5	557	1.0	450	1.0	2.1	725
1.5KE540A	1.5KE540CA	513	567	1.0	459	1.0	2.0	740
1.5KE550A	1.5KE550CA	522.5	577.5	1.0	467	1.0	2.0	760

Note：

1. Valid provided that leads at a distance of 9.5 mm from case are kept at ambient temperature.

Ratings and Characteristics Curves

(TA = 25℃ unless otherwise noted)

FIG.1-Peak Pulse Power Rating Curve

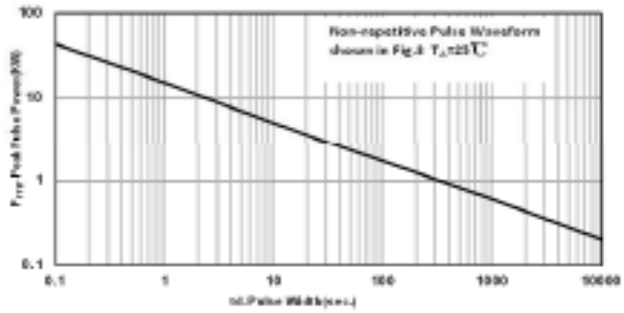


FIG.2-Pulse Derating Curve

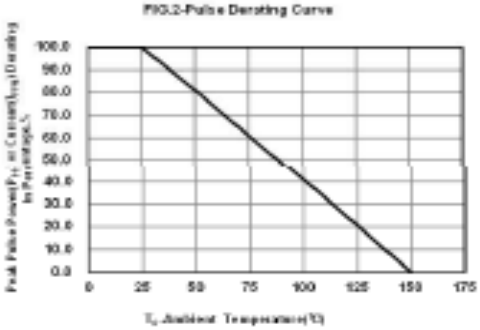


FIG.3-Pulse Waveform

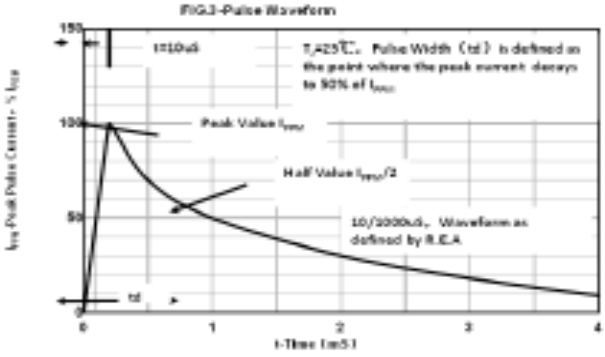


FIG.4-Typ Junction Capacitance Uni-Directional

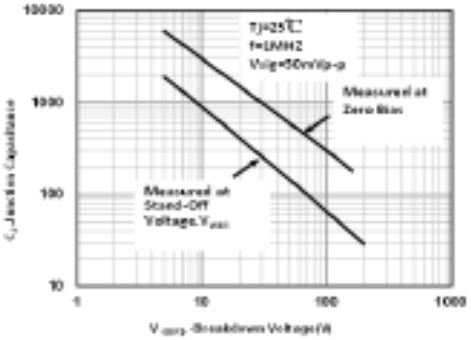


FIG5-Steady State Power Derating Curve

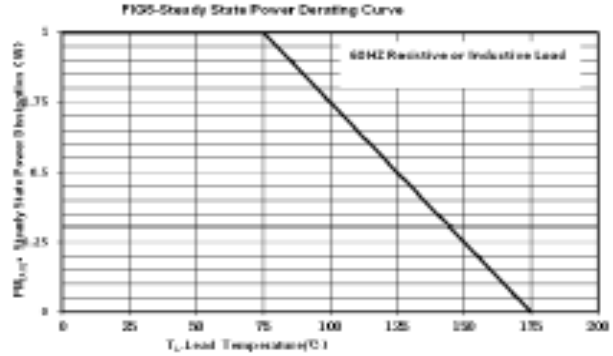


FIG6-Max.Non-Repetitive Forward Surge Current
Uni-Directional Only

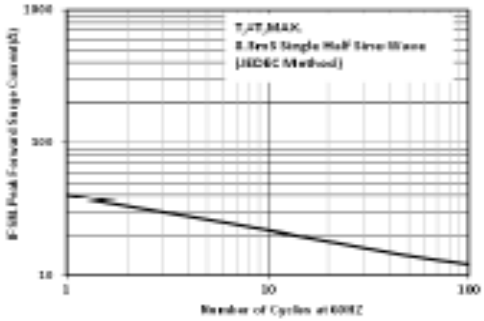


FIG7-Typ Reverse Leakage Characteristics

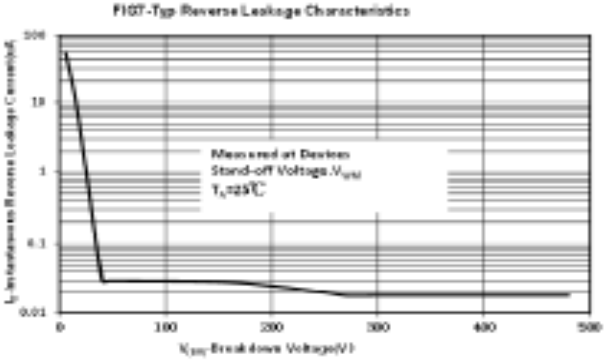
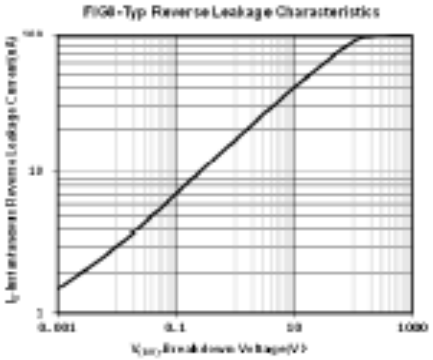


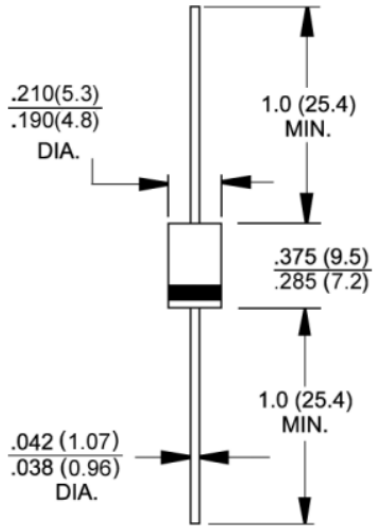
FIG8-Typ Reverse Leakage Characteristics



Package Outline Dimensions

in inches (millimeters)

DO-201AE



Dimensions in inches and (millimeters)

Revision History

Document Version	Date of release	Description of changes
Rev.A	2021.06.15	Released Datasheet
Rev.B	2023.11.28	Modify document format

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