

1.5KE6.8A(CA) THRU 1.5KE600A(CA)

PPPM 1500 W
VRRM 6.8 V to 600 V

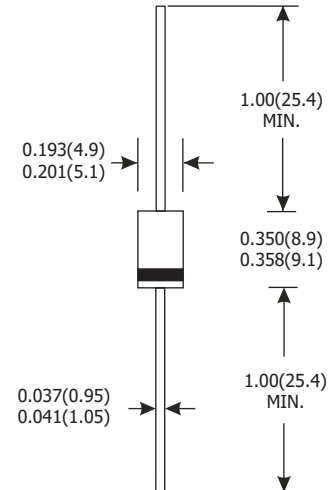
Features

- Glass Passivated Die Construction
- 1500W Peak Pulse Power Dissipation
- 5.5V – 513V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Voltage
- Typical Response Time < 1ns
- Plastic Case Material has UL Flammability Classification Rating 94V-0

Mechanical Data

- Case : DO-201AE, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity : Cathode Band Except Bi-Directional
- Weight : 1.20 grams (approx.)
- Mounting Position: Any
- Marking : Type Number
- Lead Free : For RoHS / Lead Free Version

DO-201AE



Dimensions in inches and (millimeters)

Maximum Ratings And Thermal Characteristics (TA=25°C unless otherwise specified)

Items	Symbols	Value	Units
Peak pulse power dissipation with a 10/1000μs waveform (Note 1, 2, 5)	PPPM	1500	W
Peak pulse current with a 10/1000μs waveform (Note 1)	IPPM	See Next Table	A
Peak forward surge current (Note2, 3)	IFSM	200	A
Maximum instantaneous forward voltage at 100A (Note 3, 4)	VF	3.5 / 5.0	V
Power dissipation at TL=75°C (Note 2)	PD	6.5	W
Typical thermal resistance, junction to ambient (Note 2)	RθJA	75	°C / W
Typical thermal resistance, junction to lead (Note 2)	RθJL	15	°C / W
Operating junction and storage temperature range	TJ, TSTG	-55 to +150	°C

Notes:

- (1) Non-repetitive current pulse per Figure 5. and derated above TA=25°C per Figure 1.
- (2) Mounted on 40 x 40 x 1.0mm thick copper pads to each terminal that maintained at a distance of 9.5mm from the case.
- (3) Measured on 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum. For uni-directional devices only.
- (4) VF < 3.5V for VBR ≤ 200V and VF < 5.0V for VBR ≥ 201V.
- (5) Peak pulse power waveform is 10/1000μs.

ELECTRICAL CHARACTERISTICS 1.5KE6.8A(CA) THRU 1.5KE600A(CA)

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

Uni-Directional Part No.	Bi-Directional Part No.	Reverse Stand-off Voltage VRWM (V)	Breakdown Voltage @IT V(BR) (V)		Test Current IT (mA)	Typical Clamping Voltage @IPP VC (V)	Peak Pulse Current IPP (A)	Reverse Leakage* @VRWM IR (μA)
			Min.	Max.				
1.5KE6.8	1.5KE6.8C	5.5	6.12	7.48	10	10.8	138.89	1000
1.5KE6.8A	1.5KE6.8CA	5.8	6.46	7.14	10	10.5	142.86	1000
1.5KE7.5	1.5KE7.5C	6.1	6.75	8.25	10	11.7	128.21	500
1.5KE7.5A	1.5KE7.5CA	6.4	7.13	7.88	10	11.3	132.74	500
1.5KE8.2	1.5KE8.2C	6.6	7.38	9.02	10	12.5	120.00	200
1.5KE8.2A	1.5KE8.2CA	7.0	7.79	8.61	10	12.1	123.97	200
1.5KE9.1	1.5KE9.1C	7.4	8.19	10.01	1	13.8	108.70	50
1.5KE9.1A	1.5KE9.1CA	7.8	8.65	9.56	1	13.4	111.94	50
1.5KE10	1.5KE10C	8.1	9.00	11.00	1	15.0	100.00	10
1.5KE10A	1.5KE10CA	8.6	9.50	10.50	1	14.5	103.45	10
1.5KE11	1.5KE11C	8.9	9.90	12.10	1	16.2	92.59	5
1.5KE11A	1.5KE11CA	9.4	10.45	11.55	1	15.6	96.15	5
1.5KE12	1.5KE12C	9.7	10.80	13.20	1	17.3	86.71	5
1.5KE12A	1.5KE12CA	10.2	11.40	12.60	1	16.7	89.82	5
1.5KE13	1.5KE13C	10.5	11.70	14.30	1	19.0	78.95	1
1.5KE13A	1.5KE13CA	11.1	12.35	13.65	1	18.2	82.42	1
1.5KE15	1.5KE15C	12.1	13.50	16.50	1	22.0	68.18	1
1.5KE15A	1.5KE15CA	12.8	14.25	15.75	1	21.2	70.75	1
1.5KE16	1.5KE16C	12.9	14.40	17.60	1	23.5	63.83	1
1.5KE16A	1.5KE16CA	13.6	15.20	16.80	1	22.5	66.67	1
1.5KE18	1.5KE18C	14.5	16.20	19.80	1	26.5	56.60	1
1.5KE18A	1.5KE18CA	15.3	17.10	18.90	1	25.2	59.52	1
1.5KE20	1.5KE20C	16.2	18.00	22.00	1	29.1	51.55	1
1.5KE20A	1.5KE20CA	17.1	19.00	21.00	1	27.7	54.15	1
1.5KE22	1.5KE22C	17.8	19.80	24.20	1	31.9	47.02	1
1.5KE22A	1.5KE22CA	18.8	20.90	23.10	1	30.6	49.02	1
1.5KE24	1.5KE24C	19.4	21.60	26.40	1	34.7	43.23	1
1.5KE24A	1.5KE24CA	20.5	22.80	25.20	1	33.2	45.18	1
1.5KE27	1.5KE27C	21.8	24.30	29.70	1	39.1	38.36	1
1.5KE27A	1.5KE27CA	23.1	25.65	28.35	1	37.5	40.00	1
1.5KE30	1.5KE30C	24.3	27.00	33.00	1	43.5	34.48	1
1.5KE30A	1.5KE30CA	25.6	28.50	31.50	1	41.4	36.23	1
1.5KE33	1.5KE33C	26.8	29.70	36.30	1	47.7	31.45	1
1.5KE33A	1.5KE33CA	28.2	31.35	34.65	1	45.7	32.82	1
1.5KE36	1.5KE36C	29.1	32.40	39.60	1	52.0	28.85	1
1.5KE36A	1.5KE36CA	30.8	34.20	37.80	1	49.9	30.06	1

ELECTRICAL CHARACTERISTICS 1.5KE6.8A(CA) THRU 1.5KE600A(CA)

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

Uni-Directional Part No.	Bi-Directional Part No.	Reverse Stand-off Voltage VRWM (V)	Breakdown Voltage @IT V(BR) (V)		Test Current IT (mA)	Typical Clamping Voltage @IPP VC (V)	Peak Pulse Current IPP (A)	Reverse Leakage* @VRWM IR (μA)
			Min.	Max.				
1.5KE39	1.5KE39C	31.6	35.10	42.90	1	56.4	26.60	1
1.5KE39A	1.5KE39CA	33.3	37.05	40.95	1	53.9	27.83	1
1.5KE43	1.5KE43C	34.8	38.70	47.30	1	61.9	24.23	1
1.5KE43A	1.5KE43CA	36.8	40.85	45.15	1	59.3	25.30	1
1.5KE47	1.5KE47C	38.1	42.30	51.70	1	67.8	22.12	1
1.5KE47A	1.5KE47CA	40.2	44.65	49.35	1	64.8	23.15	1
1.5KE51	1.5KE51C	41.3	45.90	56.10	1	73.5	20.41	1
1.5KE51A	1.5KE51CA	43.6	48.45	53.55	1	70.1	21.40	1
1.5KE56	1.5KE56C	45.4	50.40	61.60	1	80.5	18.63	1
1.5KE56A	1.5KE56CA	47.8	53.20	58.80	1	77.0	19.48	1
1.5KE62	1.5KE62C	50.2	55.80	68.20	1	89.0	16.85	1
1.5KE62A	1.5KE62CA	53.0	58.90	65.10	1	85.0	17.65	1
1.5KE68	1.5KE68C	55.1	61.20	74.80	1	98.0	15.31	1
1.5KE68A	1.5KE68CA	58.1	64.60	71.40	1	92.0	16.30	1
1.5KE75	1.5KE75C	60.7	67.50	82.50	1	108.0	13.89	1
1.5KE75A	1.5KE75CA	64.1	71.25	78.75	1	103.0	14.56	1
1.5KE82	1.5KE82C	66.4	73.80	90.20	1	118.0	12.71	1
1.5KE82A	1.5KE82CA	70.1	77.90	86.10	1	113.0	13.27	1
1.5KE91	1.5KE91C	73.7	81.90	100.10	1	131.0	11.45	1
1.5KE91A	1.5KE91CA	77.8	86.45	95.55	1	125.0	12.00	1
1.5KE100	1.5KE100C	81.0	90.00	110.00	1	144.0	10.42	1
1.5KE100A	1.5KE100CA	85.5	95.00	105.00	1	137.0	10.95	1
1.5KE110	1.5KE110C	89.2	99.00	121.00	1	158.0	9.49	1
1.5KE110A	1.5KE110CA	94.0	104.50	115.50	1	152.0	9.87	1
1.5KE120	1.5KE120C	97.2	108.00	132.00	1	173.0	8.67	1
1.5KE120A	1.5KE120CA	102.0	114.00	126.00	1	165.0	9.09	1
1.5KE130	1.5KE130C	105.0	117.00	143.00	1	187.0	8.02	1
1.5KE130A	1.5KE130CA	111.0	123.50	136.50	1	179.0	8.38	1
1.5KE150	1.5KE150C	121.0	135.00	165.00	1	215.0	6.98	1
1.5KE150A	1.5KE150CA	128.0	142.50	157.50	1	207.0	7.25	1
1.5KE160	1.5KE160C	130.0	144.00	176.00	1	230.0	6.52	1
1.5KE160A	1.5KE160CA	136.0	152.00	168.00	1	219.0	6.85	1
1.5KE170	1.5KE170C	138.0	153.00	187.00	1	244.0	6.15	1
1.5KE170A	1.5KE170CA	145.0	161.50	178.50	1	234.0	6.41	1
1.5KE180	1.5KE180C	146.0	162.00	198.00	1	258.0	5.81	1
1.5KE180A	1.5KE180CA	154.0	171.00	189.00	1	246.0	6.10	1

ELECTRICAL CHARACTERISTICS 1.5KE6.8A(CA) THRU 1.5KE600A(CA)

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

Uni-Directional Part No.	Bi-Directional Part No.	Reverse Stand-off Voltage VRWM (V)	Breakdown Voltage @IT V(BR) (V)		Test Current IT (mA)	Typical Clamping Voltage @IPP VC (V)	Peak Pulse Current IPP (A)	Reverse Leakage* @VRWM IR (μA)
			Min.	Max.				
1.5KE200	1.5KE200C	162.0	180.00	220.00	10	287.0	5.23	1
1.5KE200A	1.5KE200CA	171.0	190.00	210.00	10	274.0	5.47	1
1.5KE220	1.5KE220C	175.0	198.00	242.00	10	344.0	4.36	1
1.5KE220A	1.5KE220CA	185.0	209.00	231.00	10	328.0	4.57	1
1.5KE250	1.5KE250C	202.0	225.00	275.00	10	360.0	4.17	1
1.5KE250A	1.5KE250CA	214.0	237.50	262.50	10	344.0	4.36	1
1.5KE300	1.5KE300C	243.0	270.00	330.00	1	430.0	3.49	1
1.5KE300A	1.5KE300CA	256.0	285.00	315.00	1	414.0	3.62	1
1.5KE350	1.5KE350C	284.2	315.00	385.00	1	504.0	2.98	1
1.5KE350A	1.5KE350CA	299.3	332.50	367.50	1	482.0	3.11	1
1.5KE380	1.5KE380C	308.6	342.00	418.00	1	547.2	2.74	1
1.5KE380A	1.5KE380CA	324.9	361.00	399.00	1	524.4	2.86	1
1.5KE400	1.5KE400C	324.8	360.00	440.00	1	574.0	2.60	1
1.5KE400A	1.5KE400CA	342.0	380.00	420.00	1	548.0	2.72	1
1.5KE440	1.5KE440C	357.3	396.00	484.00	1	631.0	2.37	1
1.5KE440A	1.5KE440CA	376.2	418.00	462.00	1	602.0	2.47	1
1.5KE500	1.5KE500C	406.0	450.00	550.00	1	720.0	2.08	1
1.5KE500A	1.5KE500CA	427.5	475.00	525.00	1	690.0	2.17	1
1.5KE520	1.5KE520C	422.2	468.00	572.00	1	748.8	2.00	1
1.5KE520A	1.5KE520CA	444.6	494.00	546.00	1	717.6	2.09	1
1.5KE550	1.5KE550C	446.6	495.00	605.00	1	792.0	1.89	1
1.5KE550A	1.5KE550CA	470.3	522.50	577.50	1	759.0	1.98	1
1.5KE600	1.5KE600C	487.2	540.00	660.00	1	864.0	1.74	1
1.5KE600A	1.5KE600CA	513.0	570.00	630.00	1	828.0	1.81	1

*For bi-directional devices VRWM ≤ 10V, the IR limit is double.

RATINGS AND CHARACTERISTIC CURVES 1.5KE6.8A(CA) THRU 1.5KE600A(CA)

FIG.1-PULSE DERATING CURVE

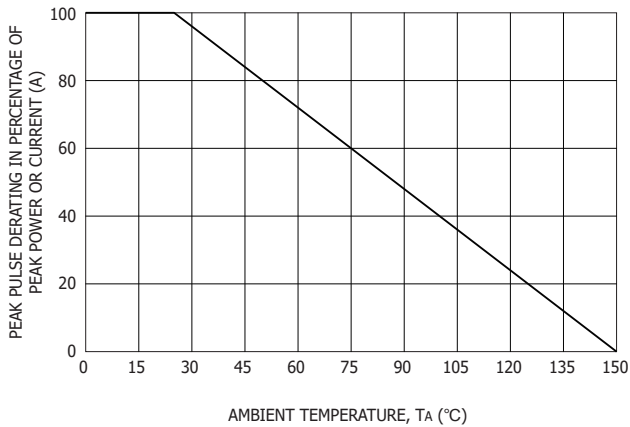


FIG.2-FORWARD SURGE CURRENT DERATING CURVE

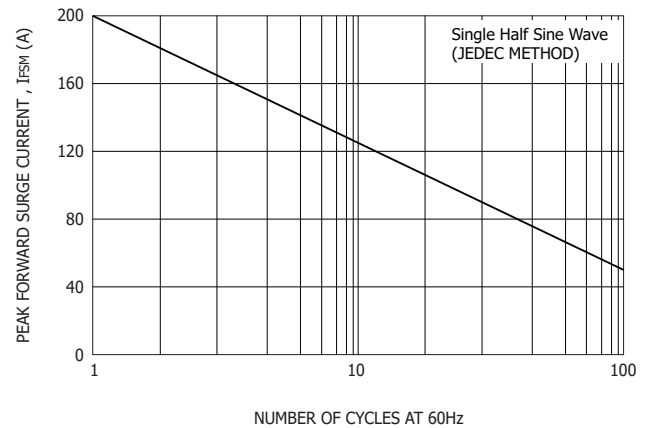


FIG.3-STEADY STATE POWER DERATING CURVE

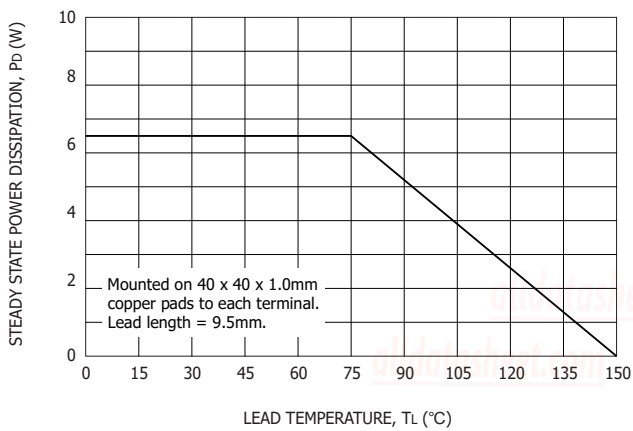


FIG.4-PEAK PULSE POWER RATING CURVE

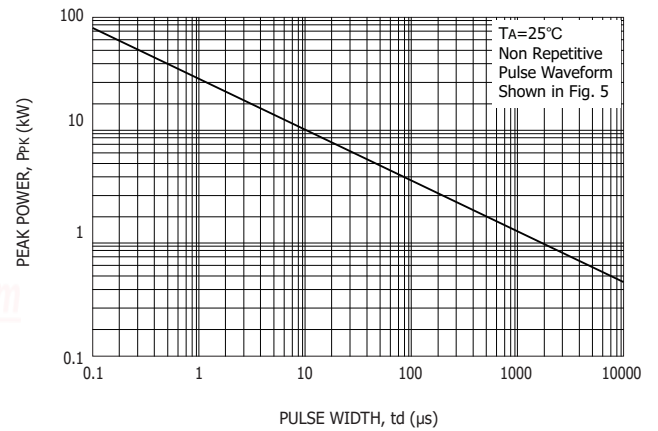


FIG.5-PULSE WAVEFORM

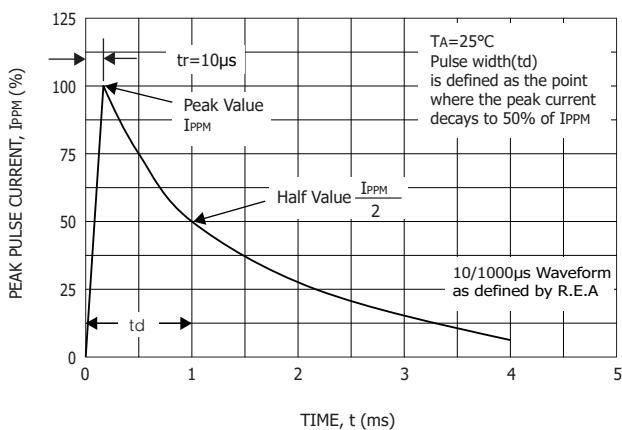


FIG.6-TYPICAL JUNCTION CAPACITANCE

