

## 1500W Transient Voltage Suppressors

### FEATURES

- Glass passivated junction
- 1500W peak pulse power capability at 1.0ms
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: Typically < 1.0ps from 0 V to BV for uni-directional, 5.0 ns for bidirectional
- Typical  $I_R$ : 1.0 $\mu$ A above 10V
- UL certified: UL #E258596
- Bi-directional types use CA suffix
- Electrical characteristics apply in both directions



### DO-201AE

COLOR BAND DENOTES CATHODE  
ON UNIDIRECTIONAL DEVICES ONLY. NO  
COLOR BAND ON BIDIRECTIONAL DEVICES.

### ABSOLUTE MAXIMUM RATINGS

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation $t_p=1\text{ms}$	$P_{PPM}$	1500	W
Peak pulse current	$I_{PPM}$	see table	A
Non-Repetitive Peak Forward Surge Current Superimposed on Rated Load (JEDEC Method) <sup>(1)</sup>	$I_{FSM}$	200	A
Junction temperature	$T_J$	-55 to +175	$^\circ\text{C}$
Storage temperature	$T_{STG}$	-55 to +175	$^\circ\text{C}$

#### Note:

1. Measured on 8.3ms single half-sine wave; duty cycle = 4 pulses per minute maximum.

### THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation .375 inch lead length at $T_A=75^\circ\text{C}$	$P_D$	5.0	W

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Uni-directional Bi-directional (C) Device	Reverse Stand-Off Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$ (V)		Test Current $I_T$ (mA)	Clamping Voltage at $I_{PPM}$ $V_C$ (V)	Peak Pulse Current $I_{PPM}$ (A)	Reverse Leakage Current at $V_{RWM}$ $I_R$ ( $\mu\text{A}$ ) <sup>(2)</sup>
		Min.	Max.				
1V5KE6V8(C)A	5.80	6.45	7.14	10	10.5	143	1000
1V5KE7V5(C)A	6.40	7.13	7.88	10	11.3	133	500
1V5KE8V2(C)A	7.02	7.79	8.61	10	12.1	124	200
1V5KE9V1(C)A	7.78	8.65	9.55	1	13.4	112	50
1V5KE10(C)A	8.55	9.5	10.5	1	14.5	103	10
1V5KE11(C)A	9.40	10.5	11.6	1	15.6	96.2	5
1V5KE12(C)A	10.2	11.4	12.6	1	16.7	90.0	5
1V5KE13(C)A	11.1	12.4	13.7	1	18.2	82.0	5
1V5KE15(C)A	12.8	14.3	15.8	1	21.2	71.0	5
1V5KE16(C)A	13.6	15.2	16.8	1	22.5	67.0	5
1V5KE18(C)A	15.3	17.1	18.9	1	26.2	59.5	5
1V5KE20(C)A	17.1	19.0	21.0	1	27.7	54.2	5
1V5KE22(C)A	18.8	20.9	23.1	1	30.6	49.0	5
1V5KE24(C)A	20.5	22.8	25.2	1	33.2	45.2	5
1V5KE27(C)A	23.1	25.7	28.4	1	37.5	40.0	5
1V5KE30(C)A	25.6	28.5	31.5	1	41.4	36.2	5
1V5KE33(C)A	28.2	31.4	34.7	1	45.7	33.0	5
1V5KE36(C)A	30.8	34.2	37.8	1	49.9	30.1	5
1V5KE39(C)A	33.3	37.1	41	1	53.9	28.0	5
1V5KE43(C)A	36.8	40.9	45.2	1	59.3	25.3	5
1V5KE47(C)A	40.2	44.7	49.4	1	64.8	23.2	5
1V5KE51(C)A	43.6	48.5	53.6	1	70.1	21.4	5
1V5KE56(C)A	47.8	53.2	58.8	1	77.0	19.5	5
1VKE62(C)A	53.0	58.9	65.1	1	85.0	17.7	5
1V5KE68(C)A	58.1	64.6	71.4	1	92.0	16.3	5
1V5KE75(C)A	64.1	71.3	78.8	1	104	14.6	5
1V5KE82(C)A	70.1	77.9	86.1	1	113	13.3	5
1V5KE91(C)A	77.8	86.5	95.5	1	125	12.0	5
1V5KE100(C)A	85.5	95	105	1	137	11.0	5
1V5KE110(C)A	94.0	106	116	1	152	9.9	5
1V5KE120(C)A	102	114	126	1	165	9.1	5
1V5KE130(C)A	111	124	137	1	179	8.4	5
1V5KE150(C)A	128	143	158	1	207	7.2	5
1V5KE160(C)A	136	152	168	1	219	6.8	5

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)							
Uni-directional Bi-directional (C) Device	Reverse Stand-Off Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$ (V)		Test Current $I_T$ (mA)	Clamping Voltage at $I_{PPM}$ $V_C$ (V)	Peak Pulse Current $I_{PPM}$ (A)	Reverse Leakage Current at $V_{RWM}$ $I_R$ ( $\mu\text{A}$ ) <sup>(2)</sup>
		Min.	Max.				
1V5KE170(C)A	145	162	179	1	234	6.4	5
1V5KE180(C)A	154	171	189	1	246	6.1	5
1V5KE200(C)A	171	190	210	1	274	5.5	5
1V5KE220(C)A	185	209	231	1	328	4.6	5
1V5KE250(C)A	214	237	263	1	344	4.5	5
1V5KE300(C)A	256	285	315	1	414	3.8	5
1V5KE350(C)A	300	333	368	1	482	3.2	5
1V5KE400(C)A	342	380	420	1	548	2.8	5
1V5KE440(C)A	376	418	462	1	602	2.6	5

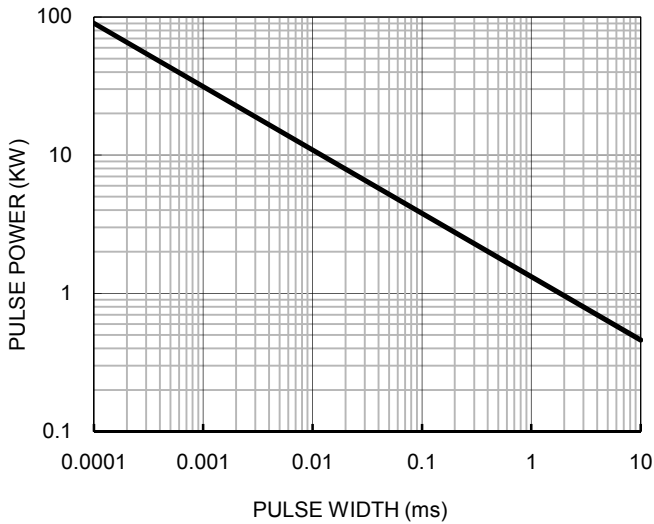
**Note:**

2. .For bi-directional parts with  $V_{RWM} < 10$  V, the  $I_R$  maximum limit is doubled.

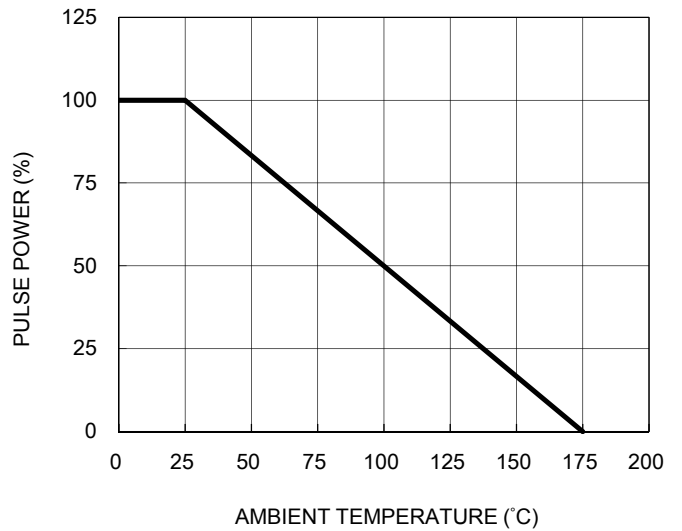
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

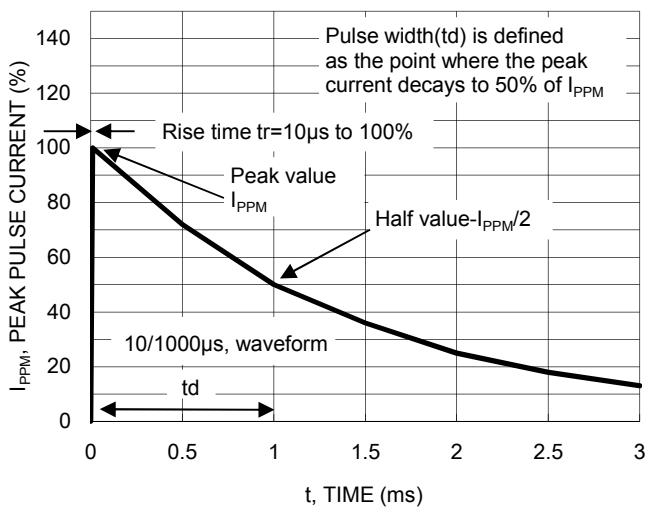
**Fig1. Peak Pulse Power Rating Curve**



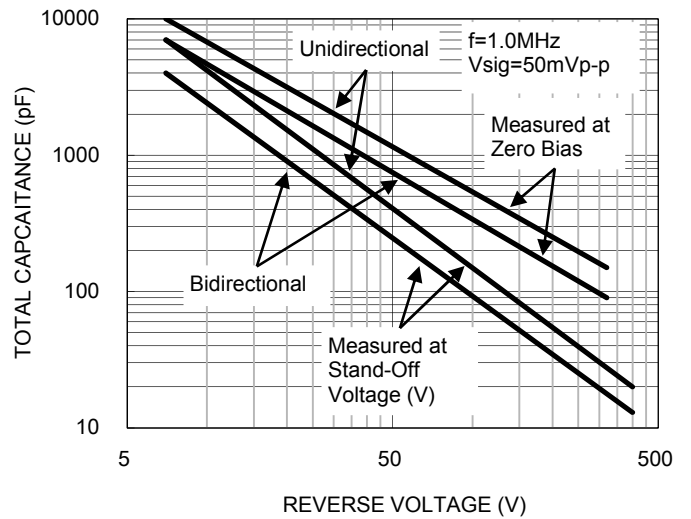
**Fig2. Pulse Derating Curve**



**Fig3. Pulse Waveform**



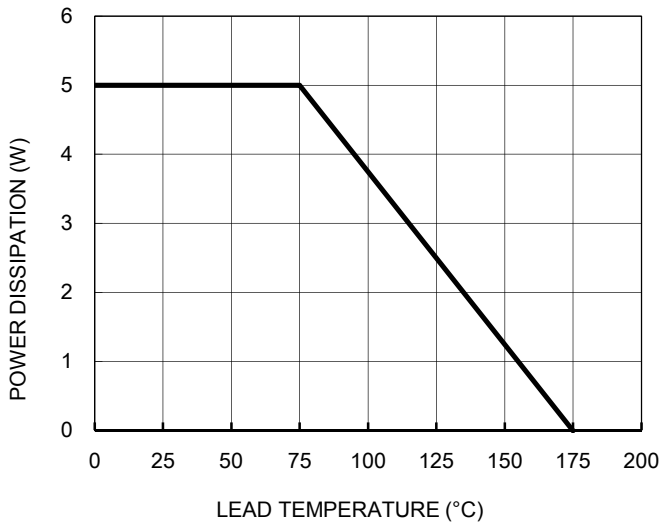
**Fig4. Total Capacitance**



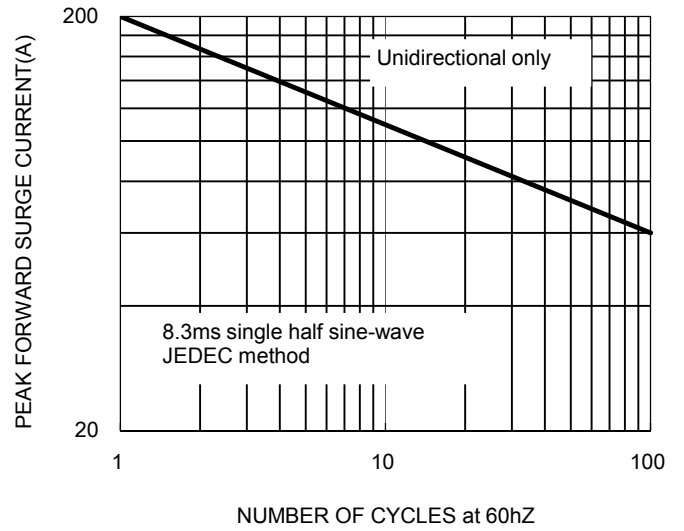
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig5. Steady State Power Derating Curve**

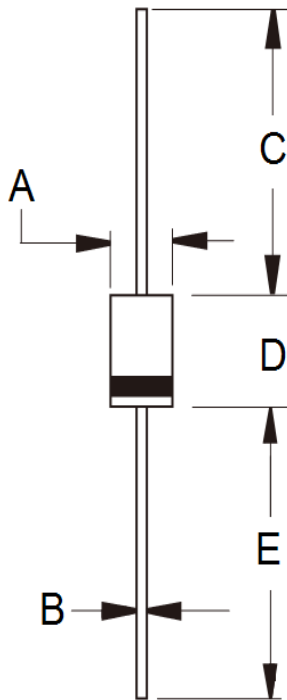


**Fig6. Non-Repetitive Surge Current**



**PACKAGE OUTLINE DIMENSIONS**

DO-201AE



DIM.	Unit (mm)	
	Min	Max
A	4.80	5.60
B	0.94	1.07
C	25.40	-
D	7.20	9.50
E	25.40	-

NOTES: UNLESS OTHERWISE SPECIFIED  
 A) PACKAGE STANDARD REFERENCE:  
 JEDEC DO-201 VARIATION AE.  
 B) PLASTIC PACKAGE BODY.  
 C) ALL DIMENSIONS ARE IN MILLIMETERS.

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