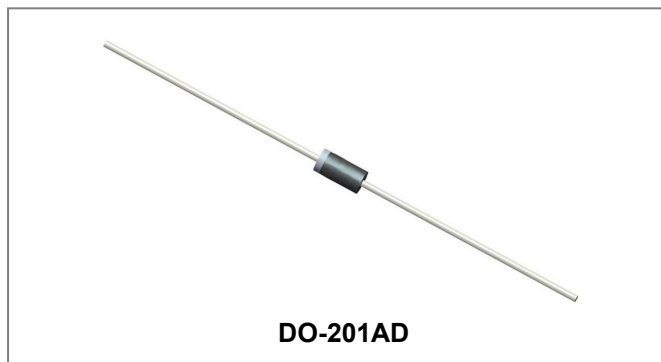


## 1.5KE6.8A THRU 1.5KE250A TRANSIENT VOLTAGE SUPPRESSOR



### Features

- Glass Passivated Die Construction
- 1500W Peak Pulse Power Dissipation
- Uni-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0
- This is a Pb – Free Device
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

### Circuit Diagram



### Mechanical Data

- Case: JEDEC DO-201AD Low Profile Molded Plastic
- Terminals: Axial Leads, Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band or Cathode Notch
- Weight: 1.10 grams(approx.)

### Maximum Ratings and Thermal Characteristics@ $T_A=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at $T_A=25^{\circ}\text{C}$ (Fig.1)(Note 1, 2, 5)	$P_{PPM}$	1500	W
Peak Forward Surge Current (Note 3)	$I_{FSM}$	200	A
Steady State Power Dissipation(Note 2, 4)	$P_{M(AV)}$	5.0	W
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	15	$^{\circ}\text{C/W}$
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	75	$^{\circ}\text{C/W}$
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-65 to 175	$^{\circ}\text{C}$

- Notes:**
1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_A = 25^{\circ}\text{C}$  per Fig. 2.
  2. Mounted on 20mm<sup>2</sup> copper pad.
  3. Measured on 8.3ms single half sine wave or equivalent square wavefor unidirectional device only.
  4. Lead temperature at  $75^{\circ}\text{C}=T_L$ .
  5. Peak pulse power waveform is 10x1000  $\mu\text{s}$ .

**Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified**

UNI-POLAR	REVERSE STAND-OFF VOLTAGE V <sub>RWM</sub> (V)	BREAKDOWN VOLTAGE V <sub>BR</sub> (V) MIN. @I <sub>T</sub>	BREAKDOWN VOLTAGE V <sub>BR</sub> (V) MAX. @I <sub>T</sub>	TEST CURRE NT I <sub>T</sub> (MA)	MAXMUM CLAMPING VOLTAGE @I <sub>PP</sub> V <sub>C</sub> (V)	PEAK PULSE CURRENT I <sub>PP</sub> <sup>(1)</sup> (A)	REVERSE LEAKAGE @V <sub>RWM</sub> I <sub>R</sub> (uA)
1.5KE6.8A	5.8	6.45	7.14	10	10.5	144.8	1000
1.5KE7.5A	6.4	7.13	7.88	10	11.3	134.5	500
1.5KE8.2A	7.02	7.79	8.61	10	12.1	125.6	200
1.5KE9.1A	7.78	8.65	9.5	10	13.4	113.4	50
1.5KE10A	8.55	9.5	10.5	1	14.5	104.8	10
1.5KE11A	9.4	10.5	11.6	1	15.6	97.4	5
1.5KE12A	10.2	11.4	12.6	1	16.7	91	5
1.5KE13A	11.1	12.4	13.7	1	18.2	83.5	5
1.5KE15A	12.8	14.3	15.8	1	21.2	71.7	5
1.5KE16A	13.6	15.2	16.8	1	22.5	67.6	5
1.5KE18A	15.3	17.1	18.9	1	25.2	60.3	5
1.5KE20A	17.1	19	21	1	27.7	54.9	5
1.5KE22A	18.8	20.9	23.1	1	30.6	49.7	5
1.5KE24A	20.5	22.8	25.2	1	33.2	45.8	5
1.5KE27A	23.1	25.7	28.4	1	37.5	40.5	5
1.5KE30A	25.6	28.5	31.5	1	41.4	36.7	5
1.5KE33A	28.2	31.4	34.7	1	45.7	33.3	5
1.5KE36A	30.8	34.2	37.8	1	49.9	30.5	5
1.5KE39A	33.3	37.1	41	1	53.9	28.2	5
1.5KE43A	36.8	40.9	45.2	1	59.3	25.6	5
1.5KE47A	40.2	44.7	49.4	1	64.8	23.5	5
1.5KE51A	43.6	48.5	53.6	1	70.1	21.7	5
1.5KE56A	47.8	53.2	58.8	1	77	19.7	5
1.5KE62A	53	58.9	65.1	1	85	17.9	5
1.5KE68A	58.1	64.6	71.4	1	92	16.5	5
1.5KE75A	64.1	71.3	78.8	1	103	14.8	5
1.5KE82A	70.1	77.9	86.1	1	113	13.5	5
1.5KE91A	77.8	86.5	95.5	1	125	12.2	5
1.5KE100A	85.5	95	105	1	137	11.1	5
1.5KE110A	94	105	116	1	152	10	5
1.5KE120A	102	114	126	1	165	9.2	5
1.5KE130A	111	124	137	1	179	8.5	5
1.5KE150A	128	143	158	1	207	7.3	5
1.5KE160A	136	152	168	1	219	6.9	5
1.5KE170A	145	162	179	1	234	6.5	5
1.5KE180A	154	171	189	1	246	6.2	5
1.5KE200A	171	190	210	1	274	5.5	5
1.5KE220A	185	209	231	1	328	4.6	5
1.5KE250A	214	237	263	1	344	4.4	5

For bidirectional type having V<sub>rwm</sub> of 10 volts and less, the IR limit is double.

For parts without A, the VBR is ±10%.

Notes: 1. Surge waveform:10/1000µs.

## Ratings and Characteristics Curves

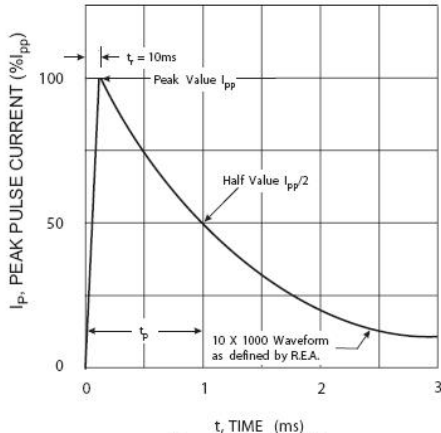


Fig. 1 Pulse Waveform

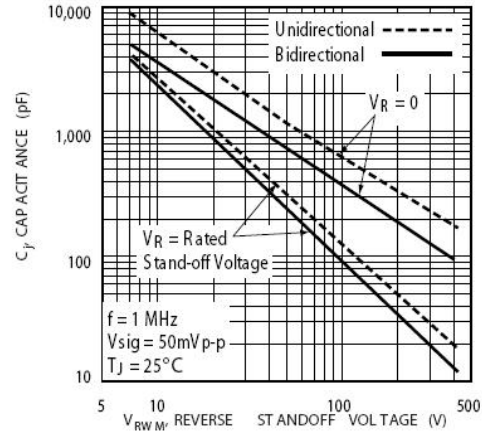


Fig. 2 Typical Junction Capacitance

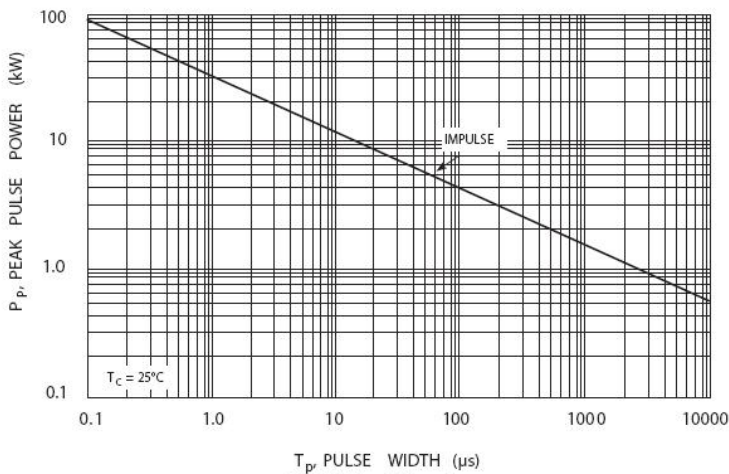


Fig. 3 Pulse Rating Curve

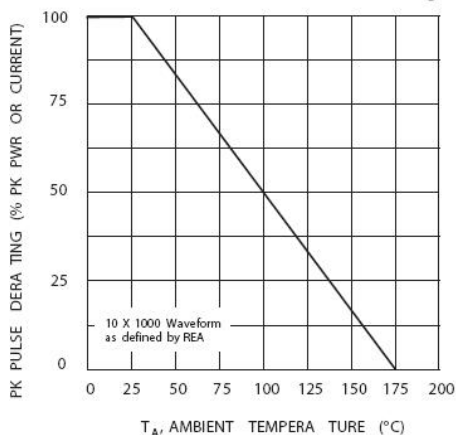


Fig. 4 Pulse Derating Curve

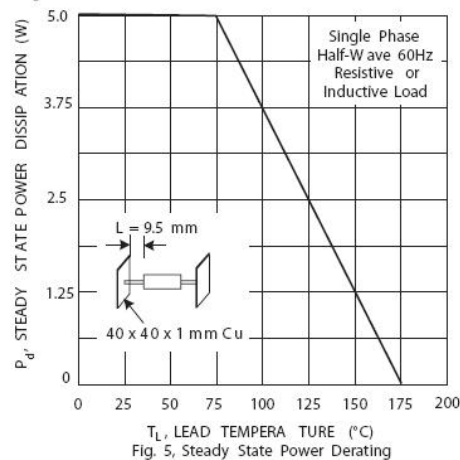
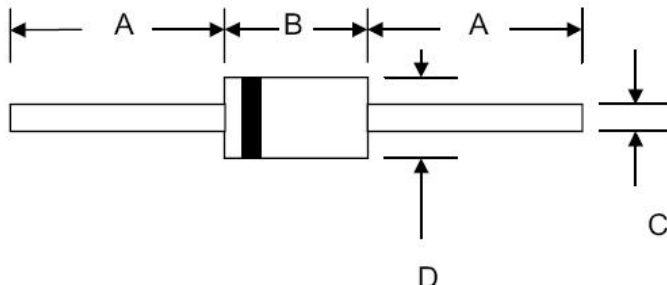


Fig. 5, Steady State Power Derating

## Mechanical Dimensions DO-201AD



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	24.0	-	0.945	-
B	7.20	9.50	0.265	0.374
C	0.96	1.07	0.038	0.042
D	4.80	5.30	0.190	0.210

## Ordering Information

Device	Package	Shipping
1.5KE6.8A THRU 1.5KE250A	DO-201AD (Pb-Free)	1250pcs / tape
1.5KE6.8ATA THRU 1.5KE250ATA	DO-201AD (Pb-Free)	1250pcs / tape

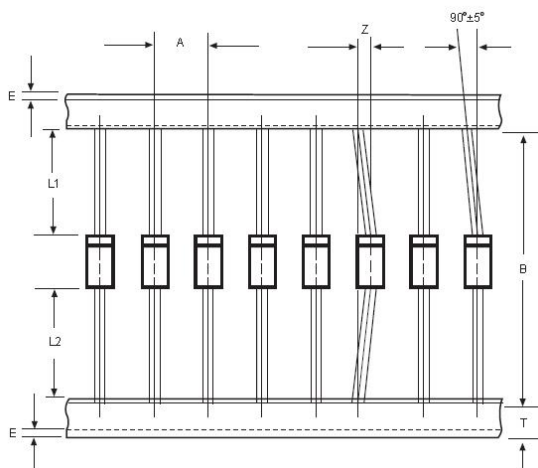
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

## Marking Diagram



1.5KE6.8A = Part Name  
Note: Starting from the 16XXX will not mark date code.

## Carrier Tape Specification DO-201AD



SYMBOL	Millimeters	
	Min.	Max.
A	9.50	10.50
B	50.9	53.9
Z	-	1.20
T	5.60	6.40
E	-	0.80
IL1-L2I	-	1.0

**DISCLAIMER:**

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC Diode Solutions sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall SMC Diode Solutions be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC Diode Solution assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall SMC Diode Solutions be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC Diode Solutions.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC Diode Solutions.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..