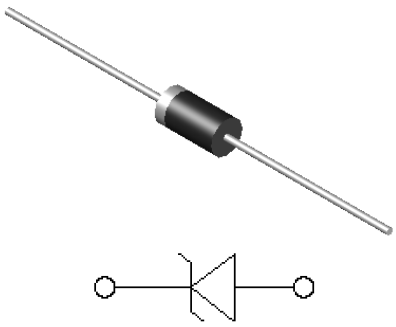
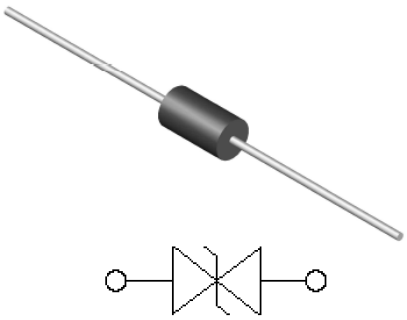
Transient Voltage Suppressor Diodes

Uni-directional



Bi-directional



Features

- Excellent clamping capability
- Low dynamic impedance
- Solder dip 275 °C max. 7 s, per JESD 22-B106

Mechanical Data

- **Package**: DO-201AE

Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant

- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** For uni-directional types the band denotes cathode end, no marking on bi-directional types

■Maximum Ratings (Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform(1)	P_{PPM}	W	1500
Peak pulse current, with a 10/1000us waveform(1)	I_{PPM}	A	See Next Table
Power dissipation, on infinite heat sink at TL=75℃	P_D	W	6.5
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only(2)	I_{FSM}	A	200
Operating junction and storage temperature range	T_J,T_{STG}	℃	-55 to +150

■Electrical Characteristics（Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage at 25A for unidirectional only(3)	V_{FM}	V	3.5/5.0

■Thermal Characteristics （Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal Resistance(Typical)	$R_{\theta J-A}$	℃/W	junction to ambient	75
	$R_{\theta J-L}$	℃/W	junction to lead	15.4

Notes:

(1) Non-repetitive current pulse, per Fig. 3 and derated above T_A= 25℃per Fig.2.

(2) Measured on 8.3ms single half sine-wave or equivalent square wave,duty cycle=4 pulses per minute maximum.

(3) VF=3.5V Max for devices of VBR≤220V，and VF=5.0V Max for devices of VBR＞220V.

■Ordering Information (Example)

PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
1.5KE SERIES	D1	Approximate 0.95	1250	1250	12500	Tape
1.5KE SERIES	C1	Approximate 0.95	250	250	12500	Bulk

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R @ V_{WM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
		Min (V)	Max (V)	I_T (mA)				
1.5KE6.8A	1.5KE6.8CA	6.45	7.14	10	1000	5.8	143	10.5
1.5KE7.5A	1.5KE7.5CA	7.13	7.88	10	500	6.4	133	11.3
1.5KE8.2A	1.5KE8.2CA	7.79	8.61	10	200	7.02	124	12.1
1.5KE9.1A	1.5KE9.1CA	8.65	9.55	1	50	7.78	112	13.4
1.5KE10A	1.5KE10CA	9.5	10.5	1	10	8.55	103	14.5
1.5KE11A	1.5KE11CA	10.5	11.6	1	5	9.4	96.2	15.6
1.5KE12A	1.5KE12CA	11.4	12.6	1	5	10.2	89.8	16.7
1.5KE13A	1.5KE13CA	12.4	13.7	1	5	11.1	82.4	18.2
1.5KE15A	1.5KE15CA	14.3	15.8	1	5	12.8	70.8	21.2
1.5KE16A	1.5KE16CA	15.2	16.8	1	5	13.6	66.7	22.5
1.5KE18A	1.5KE18CA	17.1	18.9	1	5	15.3	59.5	25.2
1.5KE20A	1.5KE20CA	19	21	1	5	17.1	54.2	27.7
1.5KE22A	1.5KE22CA	20.9	23.1	1	5	18.8	49	30.6
1.5KE24A	1.5KE24CA	22.8	25.2	1	5	20.5	45.2	33.2
1.5KE27A	1.5KE27CA	25.7	28.4	1	5	23.1	40	37.5
1.5KE30A	1.5KE30CA	28.5	31.5	1	5	25.6	36.2	41.4
1.5KE33A	1.5KE33CA	31.4	34.7	1	5	28.2	32.8	45.7
1.5KE36A	1.5KE36CA	34.2	37.8	1	5	30.8	30.1	49.9
1.5KE39A	1.5KE39CA	37.1	41	1	5	33.3	27.8	53.9
1.5KE43A	1.5KE43CA	40.9	45.2	1	5	36.8	25.3	59.3
1.5KE47A	1.5KE47CA	44.7	49.4	1	5	40.2	23.1	64.8
1.5KE51A	1.5KE51CA	48.5	53.6	1	5	43.6	21.4	70.1
1.5KE56A	1.5KE56CA	53.2	58.8	1	5	47.8	19.5	77
1.5KE62A	1.5KE62CA	58.9	65.1	1	5	53	17.6	85
1.5KE68A	1.5KE68CA	64.6	71.4	1	5	58.1	16.3	92
1.5KE75A	1.5KE75CA	71.3	78.8	1	5	64.1	14.6	104
1.5KE82A	1.5KE82CA	77.9	86.1	1	5	70.1	13.3	113
1.5KE91A	1.5KE91CA	86.5	95.5	1	5	77.8	12	125
1.5KE100A	1.5KE100CA	95	105	1	5	85.5	10.9	137
1.5KE110A	1.5KE110CA	105	116	1	5	94	9.9	152
1.5KE120A	1.5KE120CA	114	126	1	5	102	9.1	165
1.5KE130A	1.5KE130CA	124	137	1	5	111	8.4	179
1.5KE150A	1.5KE150CA	143	158	1	5	128	7.2	207
1.5KE160A	1.5KE160CA	152	168	1	5	136	6.8	219
1.5KE170A	1.5KE170CA	162	179	1	5	145	6.4	234

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R @ V_{WM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
		Min (V)	Max (V)	I_T (mA)				
1.5KE180A	1.5KE180CA	171	189	1	5	154	6.1	246
1.5KE200A	1.5KE200CA	190	210	1	5	171	5.5	274
1.5KE220A	1.5KE220CA	209	231	1	5	185	4.6	328
1.5KE250A	1.5KE250CA	237	263	1	5	214	4.4	344
1.5KE300A	1.5KE300CA	285	315	1	5	256	3.6	414
1.5KE350A	1.5KE350CA	333	368	1	5	300	3.1	482
1.5KE400A	1.5KE400CA	380	420	1	5	342	2.7	548
1.5KE440A	1.5KE440CA	418	462	1	5	376	2.5	602
1.5KE480A	1.5KE480CA	456	504	1	5	408	2.28	658
1.5KE500A	1.5KE500CA	475	525	1	5	427.5	2.17	690
1.5KE510A	1.5KE510CA	485	535	1	5	434	2.15	698
1.5KE520A	1.5KE520CA	494	546	1	5	444.6	2.09	717.6
1.5KE540A	1.5KE540CA	513	567	1	5	459	2.03	740
1.5KE550A	1.5KE550CA	522.5	577.5	1	5	470.3	1.98	759
1.5KE600A	1.5KE600CA	570	630	1	5	513	1.81	828

Notes:

For bi-directional types having VWM of 10V and less, the I_R limit is doubled.

■ Characteristics (Typical)

FIG1:Peak Pulse Power Rating Curve

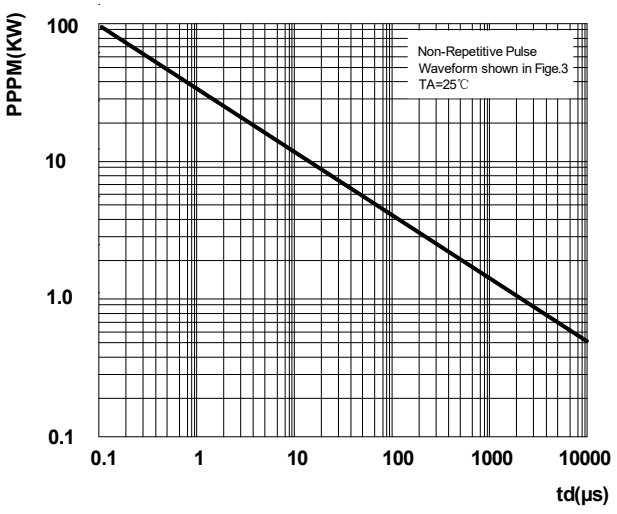
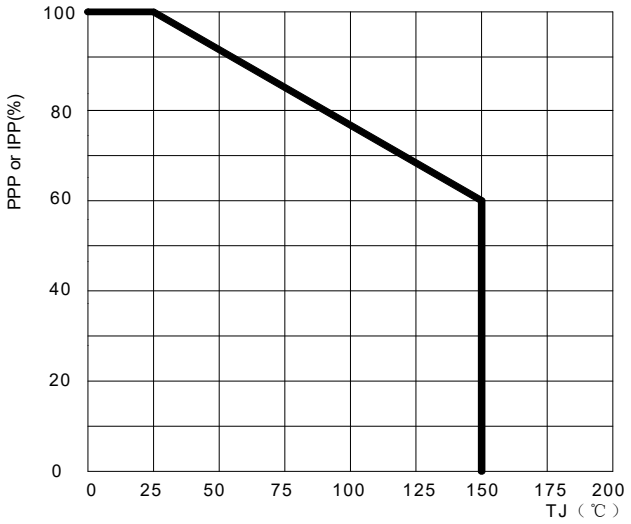


FIG2: Pulse Power or Current vs. Initial Junction Temperature



■ Characteristics (Typical)

FIG3: Pulse Waveform

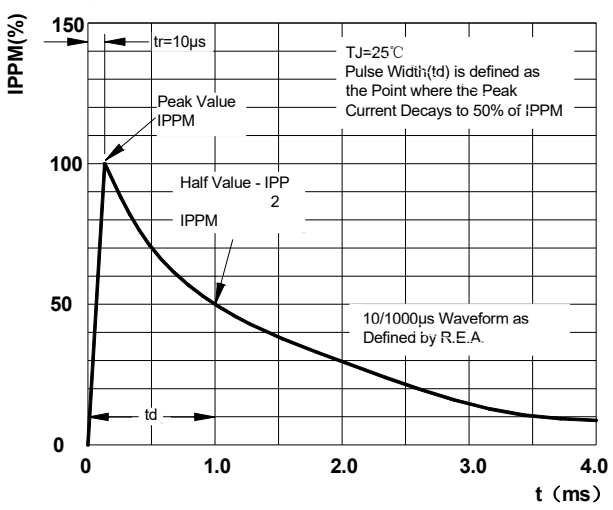


FIG4: Power Derating Curve

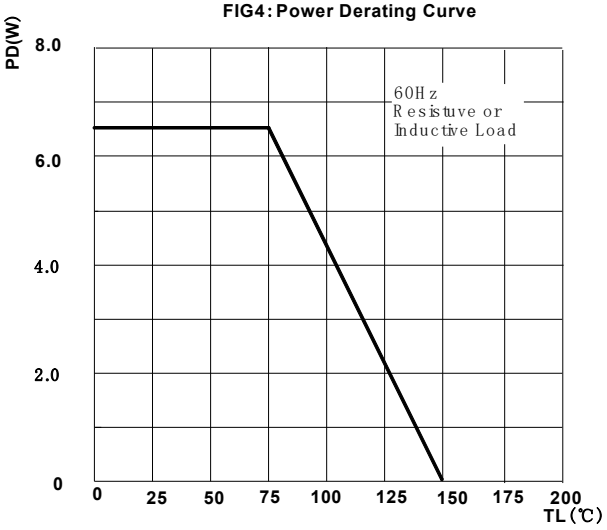


FIG5: Maximum Non-Repetitive Surge Current

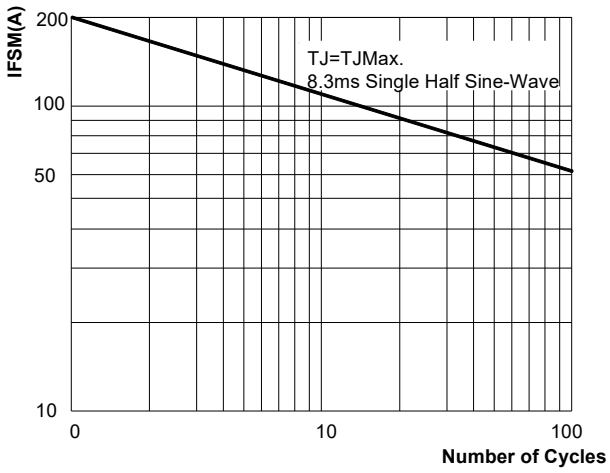
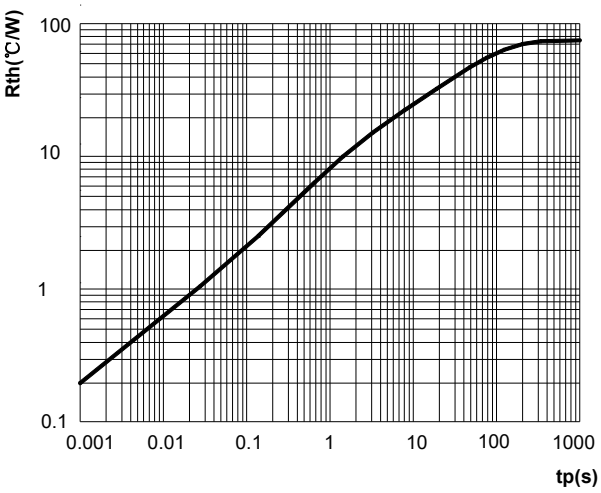
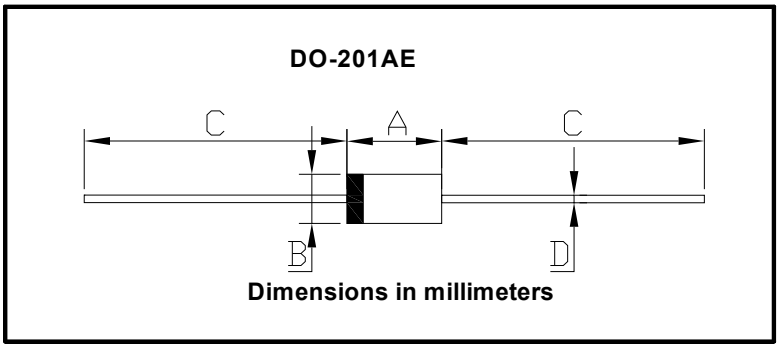


FIG6:Typical Transient Thermal Impedance



■ Outline Dimensions



DO-201AE		
Dim	Min	Max
A	8.50	9.50
B	5.00	5.60
C	25.4	/
D	0.96	1.07

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