



瞬变电压抑制二极管 Transient Voltage Suppressor Diodes

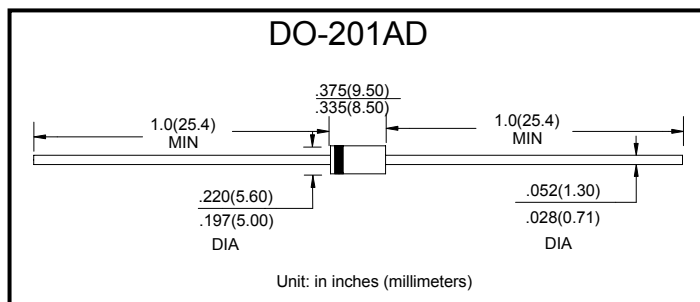
■特征 Features

- P_{PP} 1500W
- V_{BR} 6.8V-600V

■用途 Applications

- 箝位电压用 Clamping Voltage

■外形尺寸和印记 Outline Dimensions and Mark



■极限值（绝对最大额定值）

Limiting Values (Absolute Maximum Rating)

参数名称 Item	符号 Symbol	单位 Unit	条件 Conditions	最大值 Max
最大损耗功率 Peak power dissipation	PPPM	W	在10/1000us 波形下测试 with a 10/1000us waveform	1500
最大脉冲电流 Peak pulse current	IPPM	A	在10/1000us 波形下测试 with a 10/1000us waveform	见下面表格 See Next Table
功率损耗 Power dissipation	PD	W	无限散热片@ TL=75℃ on infinite heat sink at TL=75℃	6.5
最大正向浪涌电流 Peak forward surge current	IFSM	A	8.3ms正弦半波, 仅单向型 8.3 ms single half sine-wave unidirectional only	200
工作结温和存储温度范围 Operating junction and storage temperature range	TJ,TSTG	℃		-55 to +150

■电特性（ $T_a=25^{\circ}\text{C}$ 除非另有规定）Electrical Characteristics ($T_a=25^{\circ}\text{C}$ Unless otherwise specified)

参数名称 Item	符号 Symbol	单位 Unit	条件 Conditions	最大值 Max
最大瞬间正向电压（1） Maximum instantaneous forward Voltage（1）	VF	V	在25A下测试, 仅单向型 at 25A for unidirectional only	3.5/5.0
典型热阻 Thermal resistance	$R_{\theta JA}$	℃/W	结到环境 junction to ambient	75
	$R_{\theta JL}$	℃/W	结到引线 junction to lead	15.4

备注: Notes:

1. VF=3.5V适用于1.5KE220(A)及其以下型号; VF=5.0V适用于1.5KE250(A)及其以上型号

VF = 3.5 V for 1.5KE220(A) and below; VF = 5.0 V for 1.5KE250(A) and above



1.5KE SERIES

■电性参数 (TA=25℃ 除非另有规定)

Electrical Characteristics (TA=25℃ unless otherwise noted)

产品型号 (单向) Part Number(U ni)	产品型号 (双向) Part Number(Bi)	击穿电压 $V_{BR}@I_T$ Breakdown Voltage $V_{BR}@I_T$			最大反向漏电流 I_R Maximum Reverse Leakage $I_R@$ $V_{WM}(\mu A)$	最大工作电压 V_{RWM} Working Peak Reverse Voltage $V_{RWM}(V)$	最大反向浪涌 电流 IPP Maximum Reverse Surge Current IPP (A)	最大箝位电压 Maximum Clamping Voltage Vc @ IPP (V)
		最小 Min(V)	最大 Max (V)	测试电流 IT(mA)				
1.5KE6.8	1.5KE6.8C	6.12	7.48	10	1000	5.50	139	10.8
1.5KE6.8A	1.5KE6.8CA	6.45	7.14	10	1000	5.80	143	10.5
1.5KE7.5	1.5KE7.5C	6.75	8.25	10	500	6.05	128	11.7
1.5KE7.5A	1.5KE7.5CA	7.13	7.88	10	500	6.40	133	11.3
1.5KE8.2	1.5KE8.2C	7.38	9.02	10	200	6.63	120	12.5
1.5KE8.2A	1.5KE8.2CA	7.79	8.61	10	200	7.02	124	12.1
1.5KE9.1	1.5KE9.1C	8.19	10.0	1.0	50	7.37	109	13.8
1.5KE9.1A	1.5KE9.1CA	8.65	9.55	1.0	50	7.78	112	13.4
1.5KE10	1.5KE10C	9.00	11.0	1.0	10	8.10	100	15.0
1.5KE10A	1.5KE10CA	9.50	10.5	1.0	10	8.55	103	14.5
1.5KE11	1.5KE11C	9.90	12.1	1.0	5.0	8.92	92.6	16.2
1.5KE11A	1.5KE11CA	10.5	11.6	1.0	5.0	9.40	96.2	15.6
1.5KE12	1.5KE12C	10.8	13.2	1.0	5.0	9.72	86.7	17.3
1.5KE12A	1.5KE12CA	11.4	12.6	1.0	5.0	10.2	89.8	16.7
1.5KE13	1.5KE13C	11.7	14.3	1.0	5.0	10.5	78.9	19.0
1.5KE13A	1.5KE13CA	12.4	13.7	1.0	5.0	11.1	82.4	18.2
1.5KE15	1.5KE15C	13.5	16.5	1.0	5.0	12.1	68.2	22.0
1.5KE15A	1.5KE15CA	14.3	15.8	1.0	5.0	12.8	70.8	21.2
1.5KE16	1.5KE16C	14.4	17.6	1.0	5.0	12.9	63.8	23.5
1.5KE16A	1.5KE16CA	15.2	16.8	1.0	5.0	13.6	66.7	22.5
1.5KE18	1.5KE18C	16.2	19.8	1.0	5.0	14.5	56.6	26.5
1.5KE18A	1.5KE18CA	17.1	18.9	1.0	5.0	15.3	59.5	25.2
1.5KE20	1.5KE20C	18.0	22.0	1.0	5.0	16.2	51.5	29.1
1.5KE20A	1.5KE20CA	19.0	21.0	1.0	5.0	17.1	54.2	27.7
1.5KE22	1.5KE22C	19.8	24.2	1.0	5.0	17.8	47.0	31.9
1.5KE22A	1.5KE22CA	20.9	23.1	1.0	5.0	18.8	49.0	30.6
1.5KE24	1.5KE24C	21.6	26.4	1.0	5.0	19.4	43.2	34.7
1.5KE24A	1.5KE24CA	22.8	25.2	1.0	5.0	20.5	45.2	33.2
1.5KE27	1.5KE27C	24.3	29.7	1.0	5.0	21.8	38.4	39.1
1.5KE27A	1.5KE27CA	25.7	28.4	1.0	5.0	23.1	40.0	37.5
1.5KE30	1.5KE30C	27.0	33.0	1.0	5.0	24.3	34.5	43.5
1.5KE30A	1.5KE30CA	28.5	31.5	1.0	5.0	25.6	36.2	41.4
1.5KE33	1.5KE33C	29.7	36.3	1.0	5.0	26.8	31.4	47.7
1.5KE33A	1.5KE33CA	31.4	34.7	1.0	5.0	28.2	32.8	45.7
1.5KE36	1.5KE36C	32.4	39.6	1.0	5.0	29.1	28.8	52.0
1.5KE36A	1.5KE36CA	34.2	37.8	1.0	5.0	30.8	30.1	49.9



1.5KE SERIES

■电性参数 (TA=25℃ 除非另有规定)

Electrical Characteristics (TA=25℃ unless otherwise noted)

产品型号 (单 向) Part Number(Uni)	产品型号 (双 向) Part Number(Bi)	击穿电压 $V_{BR}@I_T$ Breakdown Voltage $V_{BR}@I_T$			最大反向漏电 流 I_R Maximum Reverse Leakage $I_R @$ $V_{WM} (\mu A)$	最大工作电压 V_{RWM} Working Peak Reverse Voltage $V_{RWM} (V)$	最大反向浪涌 电流 IPP Maximum Reverse Surge Current IPP (A)	最大箝位电压 Maximum Clamping Voltage V_c @ I_{PP} (V)
		最小 Min(V)	最大 Max (V)	测试电 流 I_T (mA)				
1.5KE39	1.5KE39C	35.1	42.9	1.0	5.0	31.6	26.6	56.4
1.5KE39A	1.5KE39CA	37.1	41.0	1.0	5.0	33.3	27.8	53.9
1.5KE43	1.5KE43C	38.7	47.3	1.0	5.0	34.8	24.2	61.9
1.5KE43A	1.5KE43CA	40.9	45.2	1.0	5.0	36.8	25.3	59.3
1.5KE47	1.5KE47C	42.3	51.7	1.0	5.0	38.1	22.1	67.8
1.5KE47A	1.5KE47CA	44.7	49.4	1.0	5.0	40.2	23.1	64.8
1.5KE51	1.5KE51C	45.9	56.1	1.0	5.0	41.3	20.4	73.5
1.5KE51A	1.5KE51CA	48.5	53.6	1.0	5.0	43.6	21.4	70.1
1.5KE56	1.5KE56C	50.4	61.8	1.0	5.0	45.4	18.6	80.5
1.5KE56A	1.5KE56CA	53.2	58.8	1.0	5.0	47.8	19.5	77.0
1.5KE62	1.5KE62C	55.8	68.2	1.0	5.0	50.2	16.9	89.0
1.5KE62A	1.5KE62CA	58.9	65.1	1.0	5.0	53.0	17.6	85.0
1.5KE68	1.5KE68C	61.2	74.8	1.0	5.0	55.1	15.3	98.0
1.5KE68A	1.5KE68CA	64.6	71.4	1.0	5.0	58.1	16.3	92.0
1.5KE75	1.5KE75C	67.5	82.5	1.0	5.0	60.7	13.9	109
1.5KE75A	1.5KE75CA	71.3	78.8	1.0	5.0	64.1	14.6	104
1.5KE82	1.5KE82C	73.8	90.2	1.0	5.0	66.4	12.7	118
1.5KE82A	1.5KE82CA	77.9	86.1	1.0	5.0	70.1	13.3	113
1.5KE91	1.5KE91C	81.9	100.0	1.0	5.0	73.7	11.5	131
1.5KE91A	1.5KE91CA	86.5	95.5	1.0	5.0	77.8	12.0	125
1.5KE100	1.5KE100C	90.0	110	1.0	5.0	81.0	10.4	144
1.5KE100A	1.5KE100CA	95.0	105	1.0	5.0	85.5	10.9	137
1.5KE110	1.5KE110C	99.0	121	1.0	5.0	89.2	9.5	158
1.5KE110A	1.5KE110CA	105	116	1.0	5.0	94.0	9.9	152
1.5KE120	1.5KE120C	108	132	1.0	5.0	97.2	8.7	173
1.5KE120A	1.5KE120CA	114	126	1.0	5.0	102	9.1	165
1.5KE130	1.5KE130C	117	143	1.0	5.0	105	8.0	187
1.5KE130A	1.5KE130CA	124	137	1.0	5.0	111	8.4	179
1.5KE150	1.5KE150C	136	165	1.0	5.0	121	7.0	215
1.5KE150A	1.5KE150CA	143	158	1.0	5.0	128	7.2	207
1.5KE160	1.5KE160C	144	176	1.0	5.0	130	6.5	230
1.5KE160A	1.5KE160CA	152	168	1.0	5.0	136	6.8	219
1.5KE170	1.5KE170C	153	187	1.0	5.0	138	6.1	244
1.5KE170A	1.5KE170CA	162	179	1.0	5.0	145	6.4	234
1.5KE180	1.5KE180C	162	198	1.0	5.0	146	5.8	258
1.5KE180A	1.5KE180CA	171	189	1.0	5.0	154	6.1	246



1.5KE SERIES

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Electrical Characteristics (TA=25℃ unless otherwise noted)

产品型号 (单向) Part Number(Uni)	产品型号 (双向) Part Number(Bi)	击穿电压 $V_{BR}@I_T$ Breakdown Voltage $V_{BR}@I_T$			最大反向漏电流 I_R Maximum Reverse Leakage $I_R @ V_{WM} (\mu A)$	最大工作电压 V_{RWM} Working Peak Reverse Voltage $V_{RWM} (V)$	最大反向浪涌电流 IPP Maximum Reverse Surge Current IPP (A)	最大箝位电压 Maximum Clamping Voltage $V_C @ I_{PP} (V)$
		最小 Min(V)	最大 Max (V)	测试电流 $I_T (mA)$				
1.5KE200	1.5KE200C	180	220	1.0	5.0	162	5.2	287
1.5KE200A	1.5KE200CA	190	210	1.0	5.0	171	5.5	274
1.5KE220	1.5KE220C	198	242	1.0	5.0	175	4.4	344
1.5KE220A	1.5KE220CA	209	231	1.0	5.0	185	4.6	328
1.5KE250	1.5KE250C	225	275	1.0	5.0	202	4.2	360
1.5KE250A	1.5KE250CA	237	263	1.0	5.0	214	4.4	344
1.5KE300	1.5KE300C	270	330	1.0	5.0	243	3.5	430
1.5KE300A	1.5KE300CA	285	315	1.0	5.0	256	3.6	414
1.5KE350	1.5KE350C	315	385	1.0	5.0	284	3.0	504
1.5KE350A	1.5KE350CA	333	368	1.0	5.0	300	3.1	482
1.5KE400	1.5KE400C	360	440	1.0	5.0	324	2.6	574
1.5KE400A	1.5KE400CA	380	420	1.0	5.0	342	2.7	548
1.5KE440	1.5KE440C	396	484	1.0	5.0	356	2.4	631
1.5KE440A	1.5KE440CA	418	462	1.0	5.0	376	2.5	602
1.5KE480	1.5KE480C	432	528	1.0	5.0	389	2.19	686
1.5KE480A	1.5KE480CA	456	504	1.0	5.0	408	2.28	658
1.5KE500	1.5KE500C	450	550	1.0	5.0	406	2.08	720
1.5KE500A	1.5KE500CA	475	525	1.0	5.0	427.5	2.17	690
1.5KE510	1.5KE510C	459	561	1.0	5.0	413	2.06	729
1.5KE510A	1.5KE510CA	485	535	1.0	5.0	434	2.15	698
1.5KE520	1.5KE520C	468	572	1.0	5.0	422.2	2.0	748.8
1.5KE520A	1.5KE520CA	494	546	1.0	5.0	444.6	2.09	717.6
1.5KE540	1.5KE540C	486	594	1.0	5.0	437	1.94	772
1.5KE540A	1.5KE540CA	513	567	1.0	5.0	459	2.03	740
1.5KE550	1.5KE550C	495	605	1.0	5.0	446.6	1.89	792
1.5KE550A	1.5KE550CA	522.5	577.5	1.0	5.0	470.3	1.98	759
1.5KE600	1.5KE600C	540	660	1.0	5.0	487.2	1.74	864
1.5KE600A	1.5KE600CA	570	630	1.0	5.0	513	1.81	828

备注: Notes:

1. 对于双向型, V_{WM} 在10V及10V以下, I_R 值加倍

For bi-directional types having V_{WM} of 10 V and less, the I_R limit is doubled



■特性曲线（典型） Characteristics(Typical)

图1: 最大脉冲功率曲线

FIG1: Peak Pulse Power Rating Curve

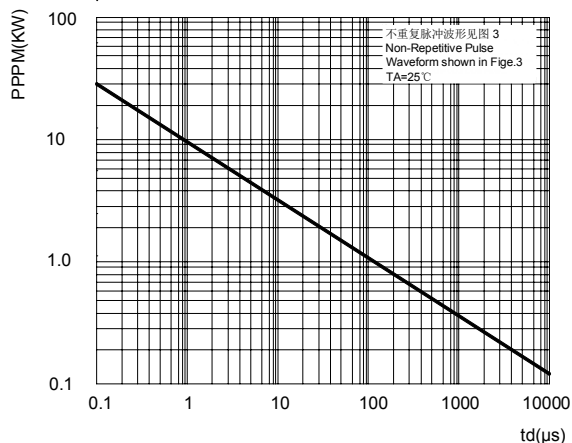


图2: 脉冲功率或电流与结温关系

FIG2: Pulse Power or Current vs. Initial Junction Temperature

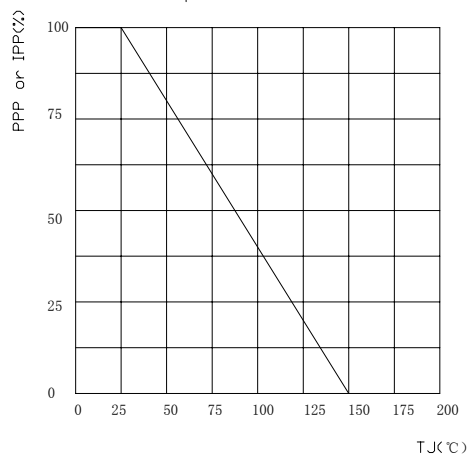


图3: 脉冲波形

FIG3: Pulse Waveform

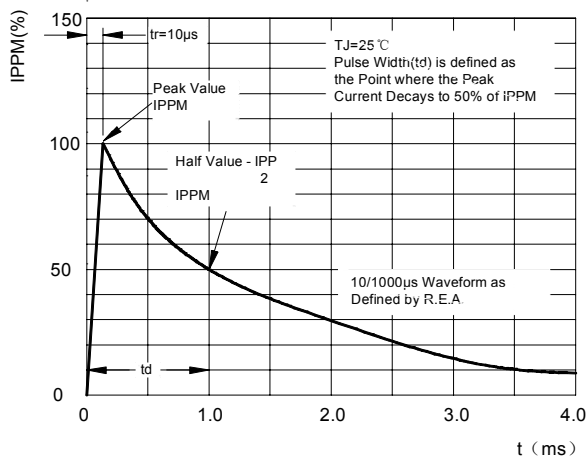


图4: 功率降额曲线

FIG4: Power Derating Curve

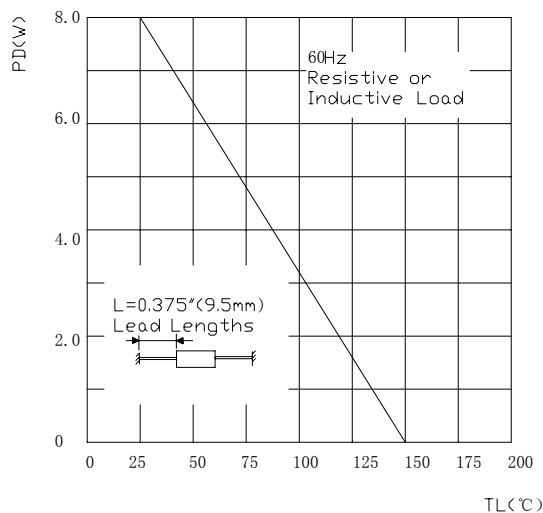


图5: 最大不重复浪涌电流

FIG5: Maximum Non-Repetitive Surge Current

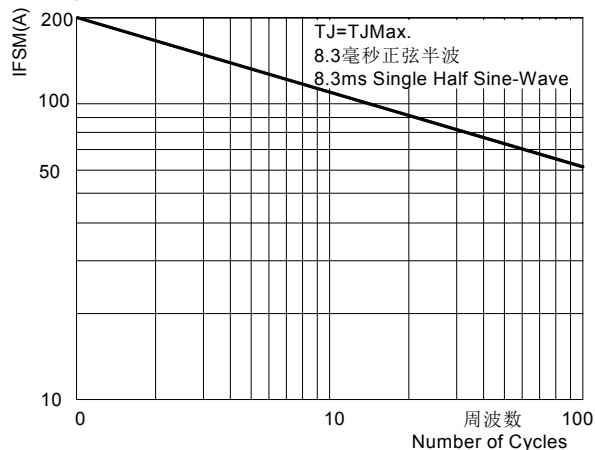


图6: 典型瞬态热阻

FIG6: Typical Transient Thermal Impedance

