



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

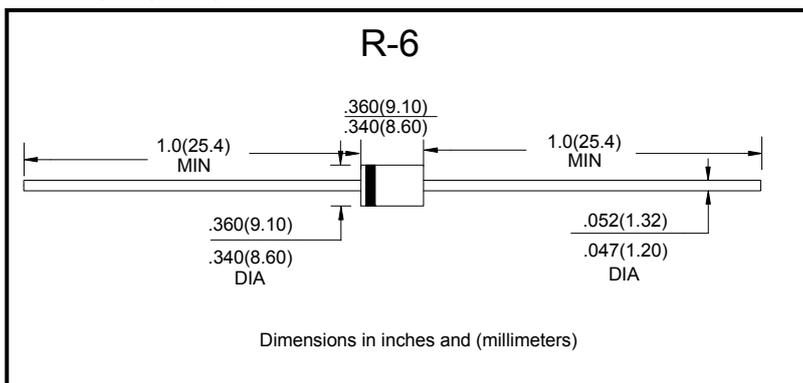
## ■特征 Features

- $P_{PP}$  3000W
- $V_{BR}$  5.0V-188V

## ■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	3000
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@ $T_L=75^\circ\text{C}$ on infinite heat sink at $T_L=75^\circ\text{C}$	8.0
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	300
工作结温和存储温度范围 Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	$^\circ\text{C}$		-55 to +175

■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100A下测试, 仅单向型 at 100A for unidirectional only	3.5

## 备注: Notes:

1. 测试在8.3ms正弦半波或相等的方波下, 占空系数=最大4个脉冲每分钟

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

■ 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 $I_R$ @ $V_{RWM}$ ( $\mu A$ )	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)	最大温度系数 Maximum Temperature Coefficient of $V_{BR}$ (%/°C)
		最小 Min(V)	最大 Max (V)	测试电流 $I_T$ (mA)					
3KP5.0	3KP5.0C	6.40	7.30	50	2000	5.0	312.5	9.6	0.057
3KP5.0A	3KP5.0CA	6.40	7.00	50	2000	5.0	326.1	9.2	0.057
3KP6.0	3KP6.0C	6.67	8.15	50	5000	6.0	263.2	11.4	0.061
3KP6.0A	3KP6.0CA	6.67	7.37	50	5000	6.0	291.3	10.3	0.061
3KP6.5	3KP6.5C	7.22	8.82	50	2000	6.5	243.9	12.3	0.065
3KP6.5A	3KP6.5CA	7.22	7.98	50	2000	6.5	267.9	11.2	0.065
3KP7.0	3KP7.0C	7.78	9.51	50	1000	7.0	225.6	13.3	0.068
3KP7.0A	3KP7.0CA	7.78	8.60	50	1000	7.0	250.0	12.0	0.068
3KP7.5	3KP7.5C	8.33	10.2	5.0	250	7.5	209.8	14.3	0.073
3KP7.5A	3KP7.5CA	8.33	9.21	5.0	250	7.5	232.6	12.9	0.073
3KP8.0	3KP8.0C	8.89	10.9	5.0	150	8.0	200.0	15.0	0.075
3KP8.0A	3KP8.0CA	8.89	9.83	5.0	150	8.0	220.6	13.6	0.075
3KP8.5	3KP8.5C	9.44	11.5	5.0	50	8.5	188.7	15.9	0.078
3KP8.5A	3KP8.5CA	9.44	10.4	5.0	50	8.5	208.3	14.4	0.078
3KP9.0	3KP9.0C	10.0	12.2	5.0	20	9.0	177.5	16.9	0.081
3KP9.0A	3KP9.0CA	10.0	11.1	5.0	20	9.0	194.8	15.4	0.081
3KP10	3KP10C	11.1	13.6	5.0	15	10.0	159.6	18.8	0.084
3KP10A	3KP10CA	11.1	12.3	5.0	15	10.0	176.5	17.0	0.084
3KP11	3KP11C	12.2	14.9	5.0	10	11.0	149.3	20.1	0.086
3KP11A	3KP11CA	12.2	13.5	5.0	10	11.0	164.8	18.2	0.086
3KP12	3KP12C	13.3	16.3	5.0	5.0	12.0	136.4	22.0	0.088
3KP12A	3KP12CA	13.3	14.7	5.0	5.0	12.0	150.8	19.9	0.088
3KP13	3KP13C	14.4	17.6	5.0	2.0	13.0	126.1	23.8	0.090
3KP13A	3KP13CA	14.4	15.9	5.0	2.0	13.0	139.5	21.5	0.090
3KP14	3KP14C	15.6	19.1	5.0	2.0	14.0	116.3	25.8	0.092
3KP14A	3KP14CA	15.6	17.2	5.0	2.0	14.0	129.3	23.2	0.092
3KP15	3KP15C	16.7	20.4	5.0	2.0	15.0	111.5	26.9	0.094
3KP15A	3KP15CA	16.7	18.5	5.0	2.0	15.0	123.0	24.4	0.094
3KP16	3KP16C	17.8	21.8	5.0	2.0	16.0	104.2	28.8	0.096
3KP16A	3KP16CA	17.8	19.7	5.0	2.0	16.0	115.4	26.0	0.096
3KP17	3KP17C	18.9	23.1	5.0	2.0	17.0	98.4	30.5	0.097
3KP17A	3KP17CA	18.9	20.9	5.0	2.0	17.0	108.7	27.6	0.097
3KP18	3KP18C	20.0	24.4	5.0	2.0	18.0	93.2	32.2	0.098
3KP18A	3KP18CA	20.0	22.1	5.0	2.0	18.0	102.7	29.2	0.098
3KP20	3KP20C	22.2	27.1	5.0	2.0	20.0	83.8	35.8	0.099
3KP20A	3KP20CA	22.2	24.5	5.0	2.0	20.0	92.6	32.4	0.099



# 3KP SERIES

## ■电性参数 (TA=25°C 除非另有规定)

### Electrical Characteristics (TA=25°C 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 @ $I_{PP}$ (V)	最大温度系数 Maximum Temperature Coefficient of $V_{BR}$ (%/°C)
		最小 Min(V)	最大 Max (V)	测试电流 IT(mA)					
3KP22	3KP22C	24.4	29.8	5.0	2.0	22.0	76.1	39.4	0.100
3KP22A	3KP22CA	24.4	26.9	5.0	2.0	22.0	84.5	35.5	0.100
3KP24	3KP24C	26.7	32.6	5.0	2.0	24.0	69.8	43.0	0.101
3KP24A	3KP24CA	26.7	29.5	5.0	2.0	24.0	77.1	38.9	0.101
3KP26	3KP26C	28.9	35.3	5.0	2.0	26.0	64.4	46.6	0.101
3KP26A	3KP26CA	28.9	31.9	5.0	2.0	26.0	71.3	42.1	0.101
3KP28	3KP28C	31.1	38.0	5.0	2.0	28.0	59.9	50.1	0.102
3KP28A	3KP28CA	31.1	34.4	5.0	2.0	28.0	66.1	45.4	0.102
3KP30	3KP30C	33.3	40.7	5.0	2.0	30.0	56.1	53.5	0.103
3KP30A	3KP30CA	33.3	36.8	5.0	2.0	30.0	62.0	48.4	0.103
3KP33	3KP33C	36.7	44.9	5.0	2.0	33.0	50.8	59.0	0.104
3KP33A	3KP33CA	36.7	40.6	5.0	2.0	33.0	56.3	53.3	0.104
3KP36	3KP36C	40.0	48.9	5.0	2.0	36.0	46.7	64.3	0.104
3KP36A	3KP36CA	40.0	44.2	5.0	2.0	36.0	51.6	58.1	0.104
3KP40	3KP40C	44.4	54.3	5.0	2.0	40.0	42.0	71.4	0.105
3KP40A	3KP40CA	44.4	49.1	5.0	2.0	40.0	46.5	64.5	0.105
3KP43	3KP43C	47.8	58.4	5.0	2.0	43.0	39.1	76.7	0.105
3KP43A	3KP43CA	47.8	52.8	5.0	2.0	43.0	43.2	69.4	0.105
3KP45	3KP45C	50.0	61.1	5.0	2.0	45.0	37.4	80.3	0.106
3KP45A	3KP45CA	50.0	55.3	5.0	2.0	45.0	41.3	72.7	0.106
3KP48	3KP48C	53.3	65.2	5.0	2.0	48.0	35.1	85.5	0.106
3KP48A	3KP48CA	53.3	58.9	5.0	2.0	48.0	38.8	77.4	0.106
3KP51	3KP51C	56.1	69.3	5.0	2.0	51.0	32.9	91.1	0.107
3KP51A	3KP51CA	56.7	62.7	5.0	2.0	51.0	36.4	82.4	0.107
3KP54	3KP54C	60.0	73.3	5.0	2.0	54.0	31.2	96.3	0.107
3KP54A	3KP54CA	60.0	66.3	5.0	2.0	54.0	34.4	87.1	0.107
3KP58	3KP58C	64.4	78.7	5.0	2.0	58.0	29.1	103	0.107
3KP58A	3KP58CA	64.4	71.2	5.0	2.0	58.0	31.9	94	0.107
3KP60	3KP60C	66.7	81.5	5.0	2.0	60.0	28.0	107	0.108
3KP60A	3KP60CA	66.7	73.7	5.0	2.0	60.0	30.9	97	0.108
3KP64	3KP64C	71.1	96.9	5.0	2.0	64.0	26.3	114	0.108
3KP64A	3KP64CA	71.1	78.6	5.0	2.0	64.0	29.1	103	0.108
3KP70	3KP70C	77.6	95.1	5.0	2.0	70.0	24.0	125	0.108
3KP70A	3KP70CA	77.8	86.0	5.0	2.0	70.0	26.5	113	0.108
3KP75	3KP75C	83.3	102	5.0	2.0	75.0	22.4	134	0.108
3KP75A	3KP75CA	83.3	92.1	5.0	2.0	75.0	24.8	121	0.108

■电性参数 (TA=25℃ 除非另有规定)

Electrical Characteristics (TA=25℃ unless otherwise noted)

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		最小 Min(V)	最大 Max (V)	测试电流 $I_T(mA)$					
3KP78	3KP78C	86.7	106.0	5.0	2.0	78.0	21.6	139	0.108
3KP78A	3KP78CA	86.7	95.8	5.0	2.0	78.0	23.8	126	0.108
3KP85	3KP85C	94.4	115	5.0	2.0	85.0	19.9	151	0.108
3KP85A	3KP85CA	94.4	104	5.0	2.0	85.0	21.9	137	0.110
3KP90	3KP90C	100	122	5.0	2.0	90.0	18.8	160	0.110
3KP90A	3KP90CA	100	111	5.0	2.0	90.0	20.5	146	0.110
3KP100	3KP100C	111	136	5.0	2.0	100	16.8	179	0.110
3KP100A	3KP100CA	111	123	5.0	2.0	100	18.5	162	0.110
3KP110	3KP110C	122	149	5.0	2.0	110	15.3	196	0.112
3KP110A	3KP110CA	122	135	5.0	2.0	110	16.9	177	0.112
3KP120	3KP120C	133	163	5.0	2.0	120	14.0	214	0.112
3KP120A	3KP120CA	133	147	5.0	2.0	120	15.5	193	0.112
3KP130	3KP130C	144	176	5.0	2.0	130	13.0	230	0.112
3KP130A	3KP130CA	144	159	5.0	2.0	130	14.4	209	0.112
3KP150	3KP150C	167	204	5.0	2.0	150	11.2	268	0.112
3KP150A	3KP150CA	167	185	5.0	2.0	150	12.3	243	0.112
3KP160	3KP160C	178	218	5.0	2.0	160	10.5	287	0.112
3KP160A	3KP160CA	178	197	5.0	2.0	160	11.6	259	0.112
3KP170	3KP170C	189	231	5.0	2.0	170	9.9	304	0.112
3KP170A	3KP170CA	189	209	5.0	2.0	170	10.9	275	0.112
3KP188	3KP188C	209	255	5.0	2.0	188	8.7	344	0.112
3KP188A	3KP188CA	209	231	5.0	2.0	188	9.1	328	0.112



## ■特性曲线（典型） Characteristics(Typical)

图1: 最大脉冲功率曲线

FIG1: Peak Pulse Power Rating Curve

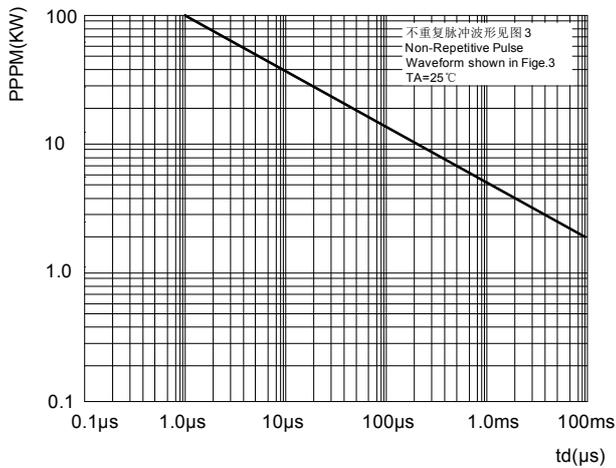


图2: 脉冲功率或电流与结温关系

FIG2: Pulse Power or Current vs. Initial Junction Temperature

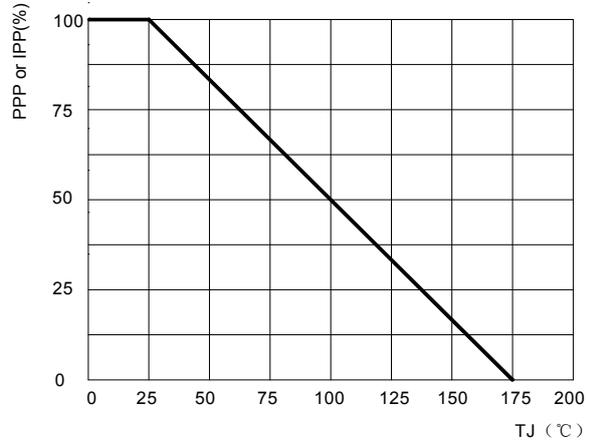


图3: 脉冲波形

FIG3: Pulse Waveform

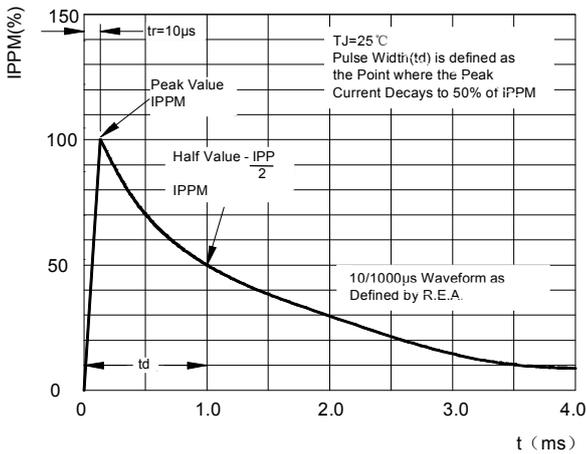


图4: 功率降额曲线

FIG4: Power Derating Curve

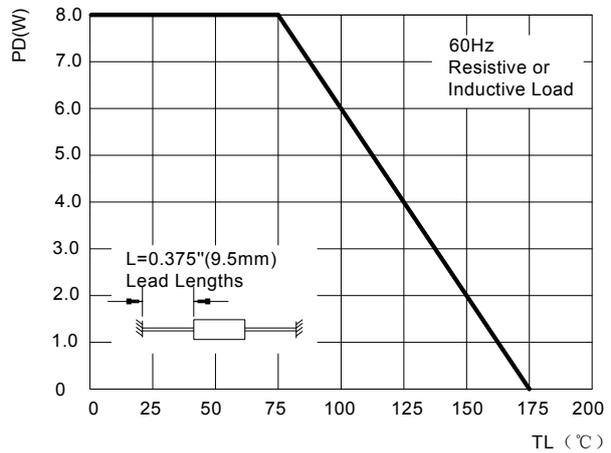


图5: 最大不重复浪涌电流

FIG5: Maximum Non-Repulsive Surge Current

