

特性/机械性能:
FEATURES/MECHANICAL DATA

- ◆ 400W 峰值脉冲功率 400W peak pulse power capability
- ◆ 优良的箝制能力 Excellent clamping capability
- ◆ 较小的箝位因子 Smaller clamping factor
- ◆ 快速响应时间: 从: 0 v到 VBR, 单向型小于1.0ps, 双向型小于5.0ns
Fast response time: typically less than 1.0ps from 0v to VBR for unidirectional and 5.0ns for bidirectional types.
- ◆ 耐焊接热: 250℃/10S, 引出端0.375" (9.5mm) 处
Resistance to soldering heat: 250 °C /10S, terminal 0.375" (9.5mm) mm.
- ◆ 封装: 模塑封装 Case: Molded plastic
- ◆ 塑封材料: 用UL94V-0认可的阻燃环氧料 Epoxy: UL94V-0 rate flame retardant
- ◆ 引线: 电镀轴式引线可焊性符合MIL-STD-202,方法208
Lead: Axial lead solderable per MIL-STD-202, method 208
- ◆ 极性: 色带表示阴极, Polarity: Color band denotes cathode except Bipolar
- ◆ 安装位置: 任意 Mounting position: Any



D0-41

最大额定值及电气特性:
MAXIMUM RATINGS AND CHARACTERISTICS

测量环境温度为25℃, 除非另有规定。

Rating at 25℃ ambient temperature unless otherwise specified.

参数名称 Part Number	符号Symbol	额定值 Value	单位Unit
最大峰值脉冲功率 Peak power dissipation	P _{ppm}	最小 (Min) 400	W
最大峰值反向脉冲电流 (注释1) Peak pulse reverse current (Note1)	I _{ppm}	见表 (See Table)	A
稳态功率 (注释2) Steady state power dissipation (Note2)	P _{m(AV)}	1.0	W
最大峰值正向浪涌电流(注释3) 仅对单向型 Maximum Peak Forward surge Current (Note3)For unidirectional only	I _{FSM}	40.0	A
最大瞬态正向电压 @25A 仅对单向型 (注释4) Maximum instantaneous forward voltage @ 25A, For unidirectional only(Note4)	V _F	3.5/6.5/9.0	V
工作及储存温度 Operating and Storage Temperature Range	T _J , T _{STG}	-55~+175	℃

注 释: NOTES:

1. 脉冲电流时间10 / 1000μs。 10 / 1000μs waveform non-repetitive current pulse
2. T₁=75℃, 在引线9.5mm处, 安装面积为 (40×40×1mm) 的散热铜片。
T₁=75℃, lead lengths 0.375inches, Mounted on copper pad area of (40×40×1mm)
3. 使用单相正弦半波, 时间10ms; 或使用等效的方波, 4周波/分。
Measured on 10ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.
4. V(BR) ≤ 200V, V_F最大值为3.5V; 200V < V(BR) < 440V, V_F最大值为6.5V, V(BR) ≥ 440V, V_F最大值为9.0V。
V_F=3.5V max. for devices of V(BR) ≤ 200V, and V_F= 6.5V max. for devices of 200V < V(BR) < 440V, V_F= 9.0V max. for devices of V(BR) ≥ 440V

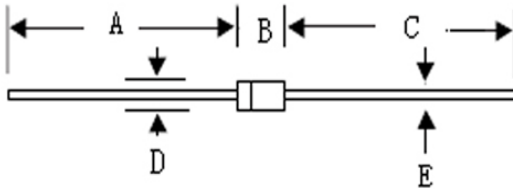
双向型器件应用说明: DEVICES FOR BIDIRECTIONAL APPLICATIONS:

1. 在型号名称后注有C或CA, 表示双向型。 For bidirectional use C or CA suffix for types
2. 电气特性适用于两个方向。 Electrical characteristics apply in both directions.

产品外形尺寸:

PRODUCT APPEARANCE SIZE

D0-41



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.0		25.4	
B	0.161	0.205	4.1	5.2
C	1.0		25.4	
D	0.080	0.107	2.0	2.7
E	0.028	0.034	0.71	0.86

电特性:

ELECTRICAL CHARACTERISTICS

型 号 Device Type	击穿电压 Breakdown Voltage(Note1)		测试电流 Test Current	变位电压 Stand-off Voltage	最大反向漏电流 @V _{WM} Maximum Reverse leakage @V _{WM}	最大峰值脉冲 电流 Maximum Peak Pulse Current	最大箝位电压 @I _{ppm} Maximum Clamping Voltage @I _{ppm}	击穿电压最大 温度系数 Maximum Temperature Coefficient Of V(BR)
	V(BR)(V) MIN	V(BR)(V) MAX	I _T (mA)	V _{WM} (V)	I _D (μA) (Note2)	I _{ppm} (A)	V _C (V)	%/°C
P4KE6.8	6.12	7.48	10.0	5.50	1000.0	38.0	10.8	0.057
P4KE6.8A	6.45	7.14	10.0	5.80	1000.0	40.0	10.5	0.057
P4KE7.5	6.75	8.25	10.0	6.05	500.0	35.0	11.7	0.061
P4KE7.5A	7.13	7.88	10.0	6.40	500.0	37.0	11.3	0.061
P4KE8.2	7.38	9.02	10.0	6.63	200.0	33.0	12.5	0.065
P4KE8.2A	7.79	8.61	10.0	7.02	200.0	34.0	12.1	0.065
P4KE9.1	8.19	10.0	1.0	7.37	50.0	30.0	13.8	0.068
P4KE9.1A	8.65	9.55	1.0	7.78	50.0	31.0	13.4	0.068
P4KE10	9.00	11.0	1.0	8.10	10.0	28.0	15.0	0.073
P4KE10A	9.50	10.5	1.0	8.55	10.0	29.0	14.5	0.073
P4KE11	9.90	12.1	1.0	8.92	5.0	26.0	16.2	0.075
P4KE11A	10.5	11.6	1.0	9.40	5.0	27.0	15.6	0.075
P4KE12	10.8	13.2	1.0	9.72	5.0	24.0	17.3	0.078
P4KE12A	11.4	12.6	1.0	10.2	5.0	25.0	16.7	0.078
P4KE13	11.7	14.3	1.0	10.5	5.0	22.0	19.0	0.081
P4KE13A	12.4	13.7	1.0	11.1	5.0	23.0	18.2	0.081
P4KE15	13.5	16.5	1.0	12.1	5.0	19.0	22.0	0.084
P4KE15A	14.3	15.8	1.0	12.8	5.0	20.0	21.2	0.084
P4KE16	14.4	17.6	1.0	12.9	5.0	17.8	23.5	0.086
P4KE16A	15.2	16.8	1.0	13.6	5.0	18.6	22.5	0.086
P4KE18	16.2	19.8	1.0	14.5	5.0	16.0	26.5	0.088
P4KE18A	17.1	18.9	1.0	15.3	5.0	16.5	25.5	0.088
P4KE20	18.0	22.0	1.0	16.2	5.0	14.0	29.1	0.090
P4KE20A	19.0	21.0	1.0	17.1	5.0	15.0	27.7	0.090
P4KE22	19.8	24.2	1.0	17.8	5.0	13.0	31.9	0.092
P4KE22A	20.9	23.1	1.0	18.8	5.0	13.7	30.6	0.092
P4KE24	21.6	26.4	1.0	19.4	5.0	12.0	34.7	0.094
P4KE24A	22.8	25.2	1.0	20.5	5.0	12.6	33.2	0.094

电特性:
ELECTRICAL CHARACTERISTICS

型 号 Device Type	击穿电压 Breakdown Voltage(Note1)		测试电流 Test Current	变位电压 Stand-off Volage	最大反向漏电流 @ V _{WM} Maximum Reverse leakage @ V _{WM}	最大峰值脉冲 电流 Maximum Peak Pulse Current	最大箝位电压 @ I _{ppm} Maximum Clamping Voltage @ I _{ppm}	击穿电压最大 温度系数 Maximum Temperature Coefficient Of V (BR)
	V (BR)(V) MIN	V (BR)(V) MAX	I _T (mA)	V _{WM} (V)	I _D (μA) (Note2)	I _{ppm} (A)	V _c (V)	%/°C
P4KE27	24.3	29.7	1.0	21.8	5.0	10.7	39.1	0.096
P4KE27A	25.7	28.4	1.0	23.1	5.0	11.0	37.5	0.096
P4KE30	27.0	33.0	1.0	24.3	5.0	9.6	43.5	0.097
P4KE30A	28.5	31.5	1.0	25.6	5.0	10.0	41.4	0.097
P4KE33	29.7	36.3	1.0	26.8	5.0	8.8	47.7	0.098
P4KE33A	31.4	34.7	1.0	28.2	5.0	9.0	45.7	0.098
P4KE36	32.4	39.6	1.0	29.1	5.0	8.0	52.0	0.099
P4KE36A	34.2	37.8	1.0	30.8	5.0	8.4	49.9	0.099
P4KE39	35.1	42.9	1.0	31.6	5.0	7.4	56.4	0.100
P4KE39A	37.1	41.0	1.0	33.3	5.0	7.7	53.9	0.100
P4KE43	38.7	47.3	1.0	34.8	5.0	6.7	61.9	0.101
P4KE43A	40.9	45.2	1.0	36.8	5.0	7.0	59.3	0.101
P4KE47	42.3	51.7	1.0	38.1	5.0	6.2	67.8	0.101
P4KE47A	44.7	49.4	1.0	40.2	5.0	6.4	64.8	0.101
P4KE51	45.9	56.1	1.0	41.3	5.0	5.7	73.5	0.102
P4KE51A	48.5	53.6	1.0	43.6	5.0	6.0	70.1	0.102
P4KE56	50.4	61.6	1.0	45.4	5.0	5.2	80.5	0.103
P4KE56A	53.2	58.8	1.0	47.8	5.0	5.4	77.0	0.103
P4KE62	55.8	68.2	1.0	50.2	5.0	4.7	89.0	0.104
P4KE62A	58.9	65.1	1.0	53.0	5.0	5.0	85.0	0.104
P4KE68	61.2	74.8	1.0	55.1	5.0	4.2	98.0	0.104
P4KE68A	64.6	71.4	1.0	58.1	5.0	4.5	92.0	0.104
P4KE75	67.5	82.5	1.0	60.7	5.0	3.8	108	0.105
P4KE75A	71.3	78.8	1.0	64.1	5.0	4.0	103	0.105
P4KE82	73.8	90.2	1.0	66.4	5.0	3.5	118	0.105
P4KE82A	77.9	86.1	1.0	70.1	5.0	3.7	113	0.105
P4KE91	81.9	100	1.0	73.7	5.0	3.2	131	0.106
P4KE91A	86.5	95.5	1.0	77.8	5.0	3.3	125	0.106
P4KE100	90.0	110	1.0	81.0	5.0	2.9	144	0.106
P4KE100A	95.0	105	1.0	85.5	5.0	3.0	137	0.106
P4KE110	99.0	121	1.0	89.2	5.0	2.6	158	0.107
P4KE110A	105	116	1.0	94.0	5.0	2.7	152	0.107
P4KE120	108	132	1.0	97.2	5.0	2.4	173	0.107
P4KE120A	114	126	1.0	102	5.0	2.5	165	0.107
P4KE130	117	143	1.0	105	5.0	2.2	187	0.107
P4KE130A	124	137	1.0	111	5.0	2.3	179	0.107
P4KE150	135	165	1.0	121	5.0	1.9	215	0.108

[P4KE Series]
Transient Voltage Suppressor 瞬变电压抑制二极管 TVS
电特性:
ELECTRICAL CHARACTERISTICS

型 号 Device Type	击穿电压 Breakdown Voltage(Note1)		测试电流 Test Current	变位电压 Stand-off Voltage	最大反向漏电流 @ V _{WM} Maximum Reverse leakage @ V _{WM}	最大峰值脉冲 电流 Maximum Peak Pulse Current	最大箝位电压 @ I _{ppm} Maximum Clamping Voltage @ I _{ppm}	击穿电压最大 温度系数 Maximum Temperature Coefficient Of V (BR)
	V (BR)(V) MIN	V (BR)(V) MAX	I _T (mA)	V _{WM} (V)	I _D (μA) (Note2)	I _{ppm} (A)	V _C (V)	%/°C
P4KE150A	143	158	1.0	128	5.0	2.0	207	0.108
P4KE160	144	176	1.0	130	5.0	1.8	230	0.108
P4KE160A	152	168	1.0	136	5.0	1.9	219	0.108
P4KE170	153	187	1.0	138	5.0	1.7	244	0.108
P4KE170A	162	179	1.0	145	5.0	1.8	234	0.108
P4KE180	162	198	1.0	146	5.0	1.6	258	0.108
P4KE180A	171	189	1.0	154	5.0	1.7	246	0.108
P4KE200	180	220	1.0	162	5.0	1.4	287	0.108
P4KE200A	190	210	1.0	171	5.0	1.51	274	0.108
P4KE220	198	242	1.0	175	5.0	1.2	344	0.108
P4KE220A	209	231	1.0	185	5.0	1.3	328	0.108
P4KE250	225	275	1.0	202	5.0	1.1	360	0.110
P4KE250A	237	263	1.0	214	5.0	1.2	344	0.110
P4KE300	270	330	1.0	243	5.0	0.97	430	0.110
P4KE300A	285	315	1.0	256	5.0	1.0	414	0.110
P4KE350	315	385	1.0	284	5.0	0.83	504	0.110
P4KE350A	332	368	1.0	300	5.0	0.87	482	0.110
P4KE400	360	440	1.0	324	5.0	0.73	574	0.110
P4KE400A	380	420	1.0	342	5.0	0.76	548	0.110
P4KE440	396	484	1.0	356	5.0	0.66	631	0.110
P4KE440A	418	462	1.0	376	5.0	0.69	602	0.110
P4KE480	432	528	1.0	389	5.0	0.61	686	0.110
P4KE480A	456	504	1.0	408	5.0	0.64	658	0.110
P4KE500	450	550	1.0	400	5.0	0.60	698	0.110
P4KE500A	475	525	1.0	428	5.0	0.63	667	0.110
P4KE510	459	561	1.0	413	5.0	0.58	729	0.110
P4KE510A	485	535	1.0	434	5.0	0.60	698	0.110
P4KE540	486	594	1.0	437	5.0	0.54	772	0.110
P4KE540A	513	567	1.0	459	5.0	0.57	740	0.110
P4KE550	495	605	1.0	440	5.0	0.52	811	0.110
P4KE550A	523	578	1.0	470	5.0	0.54	779	0.110
P4KE600	540	660	1.0	480	5.0	0.48	870	0.120
P4KE600A	570	630	1.0	513	5.0	0.49	850	0.120

注 释:Note: 1.V (BR) 值在施加IT 300μs后测量, IT 为方波或等效的脉冲波形。

2.对于双向型, V_{RWM}在10V及10V以下, I_D值加倍。

3.表面贴装型将"P4KE"改为"P4SMA"。

1. V (BR) measured after IT applied for 300μs, IT = square pulse or equivalent

2. For bidirectional types having V_{RWM} of 10 volts and 10 volts less, the I_D limit is doubled.

3. The SMT type will be "P4SMA" instead of "P4KE".

特性曲线图:

RATINGS AND CHARACTERISTIC CURVES

FIG. 1 - PEAK PULSE POWER RATING CURVE

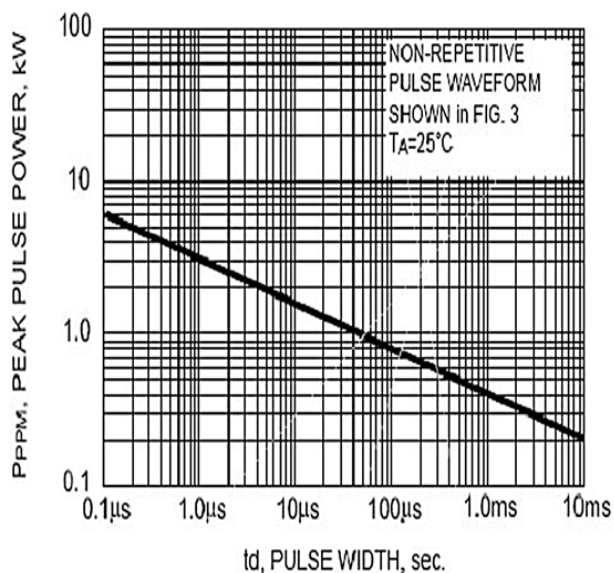


FIG. 2 - PULSE DERATING CURVE

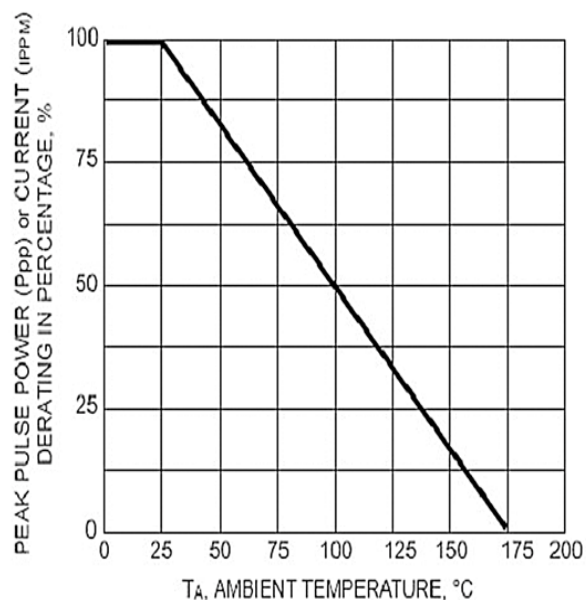


FIG. 3 - PULSE WAVEFORM

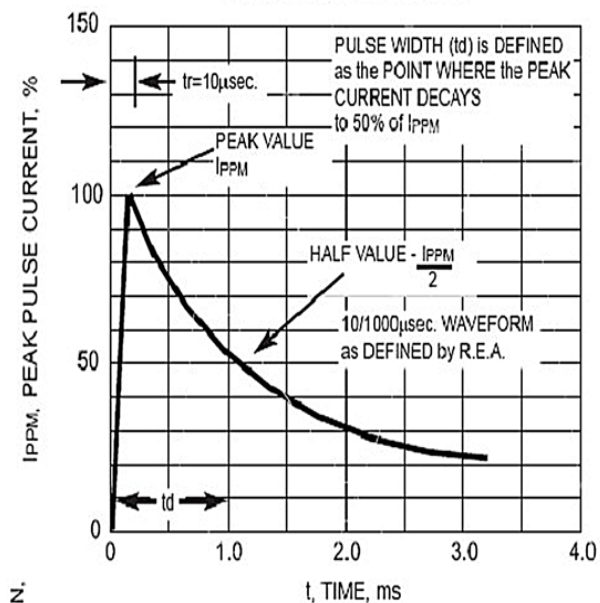
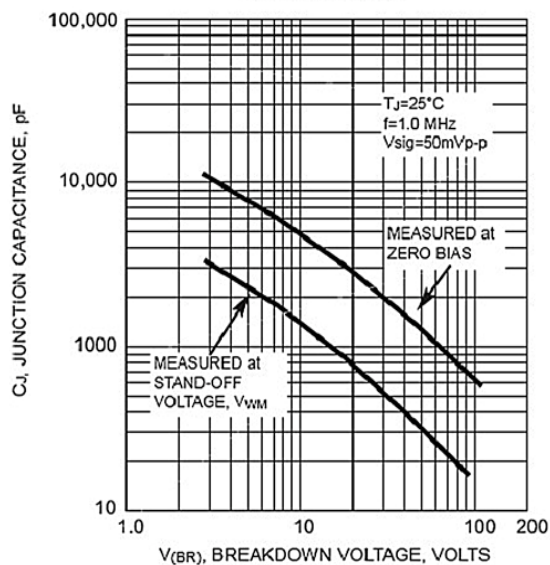


FIG. 4 - TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL



特性曲线图:

RATINGS AND CHARACTERISTIC CURVES

FIG. 5 - STEADY STATE POWER DERATING CURVE

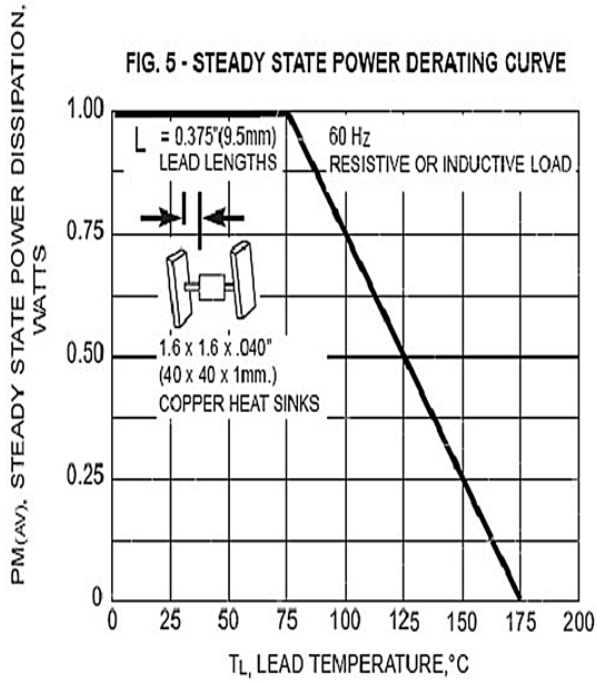


FIG. 6 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

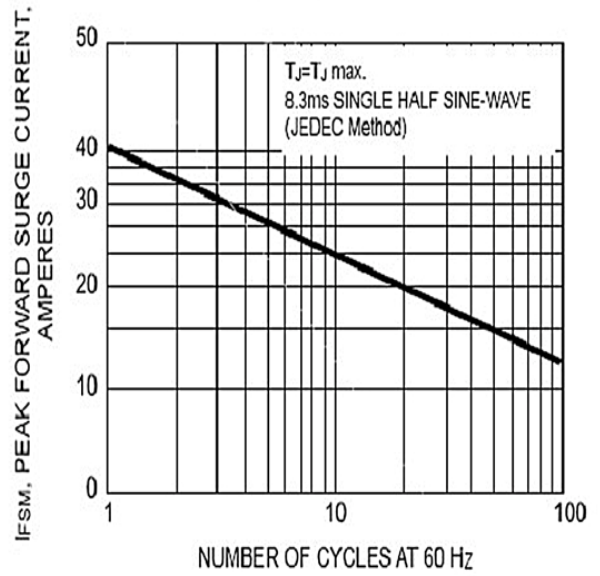


FIG. 7 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS

