5.5KP10-5.5KP43A Series

TOP-EMC

DO-218AB

RoHS
COMPLIANT

FEATURES

- 5500 W peak pulse power capability with a 10/1000us waveform
- For surface mounted applications in order to optimize board space.
- Excellent clamping capability
- Very fast response time
- TJ = 175 °C capability suitable for high reliability and automotive requirement
- Low leakage current
- Low forward voltage drop
- Available in uni-directional polarity only
- Meets ISO7637-2 surge specification (varied by test condition)
- High Temperature soldering:260°C/10 seconds atterminals.

PRIMARY CHARACTERISTICS	
V_{WM}	10V to 43 V
P_{PPM}	5500 W
P_D	8.0W
I_{FSM}	700 A
T_J max.	175 °C

TYPICAL APPLICATIONS

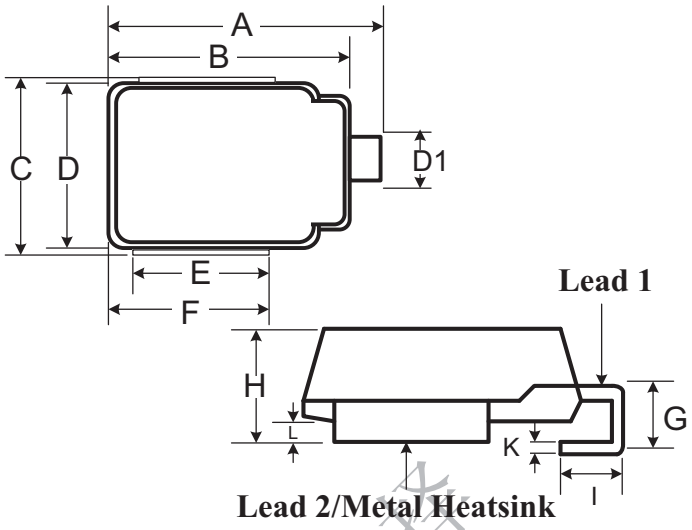
Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive and telecommunication.

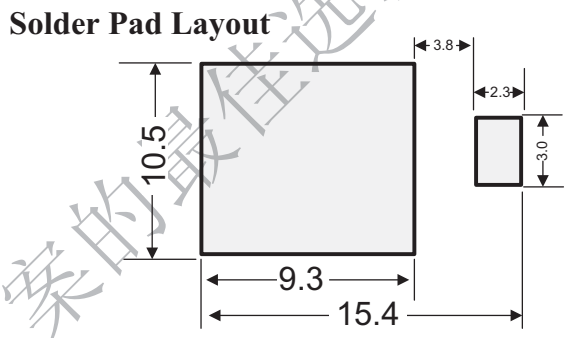
CHARACTERISTICS

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation with a 10/1000 µs waveform	P_{PPM}	5500	W
Peak pulse current with a 10/1000 µs waveform	I_{PPM}	See next table	A
Power dissipation on infinite heatsink at T_L = 75 °C (Fig. 5)	P_D	8.0	W
Peak forward surge current 8.3 ms single half sine-wave (Fig. 6)	I_{FSM}	700	A
Operating junction and storage temperature range	T_J, T_{STG}	-55 to + 175	°C

■ PACKAGE DIMENSIONS

Ref.（mm）	Millimeters	
	Min.	Max.
A	15.0	16.0
B	13.3	13.7
C	9.5	10.5
D	8.3	8.7
D1	2.4	3.0
E	8.7	9.3
F	9.7	10.3
G	2.5	3.5
H	4.7	5.0
I	1.5	2.5
K	0.5	0.7
L	0.4	





Dimensions in mm

■ ELECTRICAL CHARACTERISTICS

Part Number	Reverse Stand off Voltage V_{RWM} (Volts)	Breakdown Voltage V_{BR}(Volts)@I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_c@I_{PP} (Volts)	Maximum PeakPulse Current I_{pp} (Amps)	Maximum Reverse Leakage IR@VRWM (μA)
		MIN	MAX				
5.5KP10	10	11.1	13.6	5	18.8	351	15
5.5KP10A	10	11.1	12.3	5	17.0	388	15
5.5KP11	11	12.2	14.9	5	20.1	328	10
5.5KP11A	11	12.2	13.5	5	18.2	363	10
5.5KP12	12	13.3	16.3	5	22.0	300	10
5.5KP12A	12	13.3	14.7	5	19.9	332	10
5.5KP13	13	14.4	17.6	5	23.8	277	10
5.5KP13A	13	14.4	15.9	5	21.5	307	10
5.5KP14	14	15.6	19.1	5	25.8	256	10
5.5KP14A	14	15.6	17.2	5	23.2	284	10

Part Number	Reverse Stand off Voltage V_{RWM} (Volts)	Breakdown Voltage V_{BR}(Volts)@I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_c@I_{PP} (Volts)	Maximum PeakPulse Current I_{pp} (Amps)	Maximum Reverse Leakage IR@VRWM (μA)
		MIN	MAX				
5.5KP15	15	16.7	20.4	5	26.9	245	10
5.5KP15A	15	16.7	18.5	5	24.4	270	10
5.5KP16	16	17.8	21.8	5	28.8	229	10
5.5KP16A	16	17.8	19.7	5	26.0	254	10
5.5KP17	17	18.9	23.1	5	30.5	216	10
5.5KP17A	17	18.9	20.9	5	27.6	239	10
5.5KP18	18	20.0	24.4	5	32.2	205	10
5.5KP18A	18	20.0	22.1	5	29.2	226	10
5.5KP20	20	22.2	27.1	5	35.8	184	10
5.5KP20A	20	22.2	24.5	5	32.4	204	10
5.5KP22	22	24.4	29.8	5	39.4	168	10
5.5KP22A	22	24.4	26.9	5	35.5	186	10
5.5KP24	24	26.7	32.6	5	43.0	153	10
5.5KP24A	24	26.7	29.5	5	38.9	170	10
5.5KP26	26	28.9	35.3	5	46.6	142	10
5.5KP26A	26	28.9	31.9	5	42.1	157	10
5.5KP28	28	31.1	38.0	5	50.1	132	10
5.5KP28A	28	31.1	34.4	5	45.4	145	10
5.5KP30	30	33.3	40.7	5	53.5	123	10
5.5KP30A	30	33.3	36.8	5	48.4	136	10
5.5KP33	33	36.7	44.9	5	59.0	112	10
5.5KP33A	33	36.7	40.6	5	53.3	124	10
5.5KP36	36	40.0	48.9	5	64.3	103	10
5.5KP36A	36	40.0	44.2	5	58.1	114	10
5.5KP40	40	44.4	54.3	5	71.4	92.4	10
5.5KP40A	40	44.4	49.1	5	64.5	102	10
5.5KP43	43	47.7	58.4	5	76.7	86	10
5.5KP43A	43	47.8	52.8	5	69.4	95.1	10

RATINGS AND CHARACTERISTIC CURVES (TA=25℃ unless otherwise noted)

Figure 1 - Peak Pulse Power Rating Curve

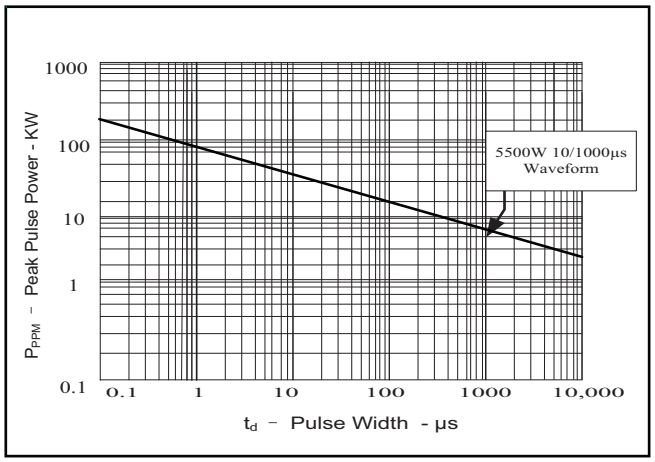


Figure 2 - Pulse Derating Curve

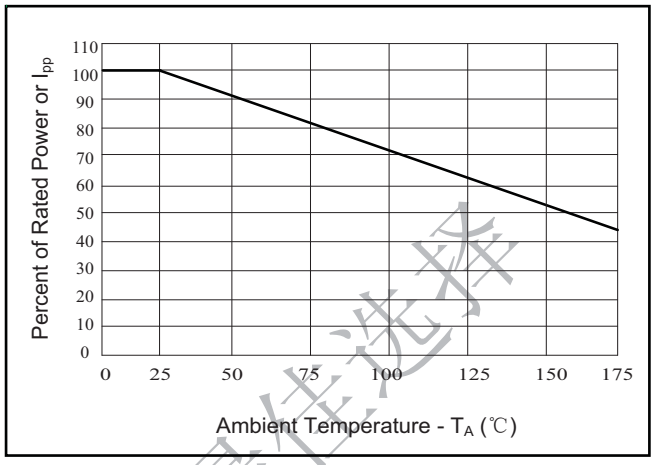


Figure 3 - Pulse Waveform

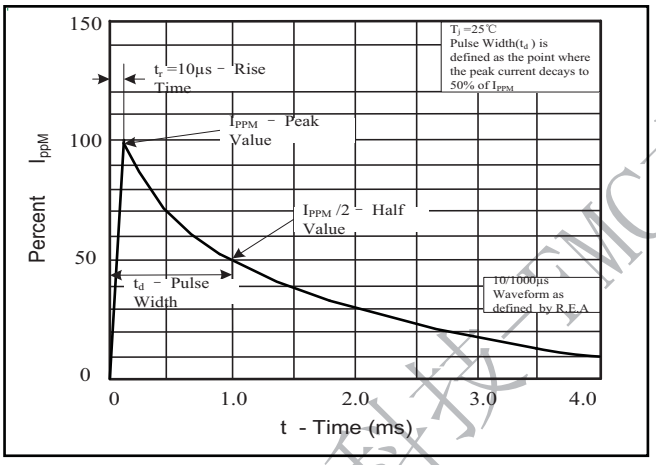


Figure 4 - Typical Junction Capacitance

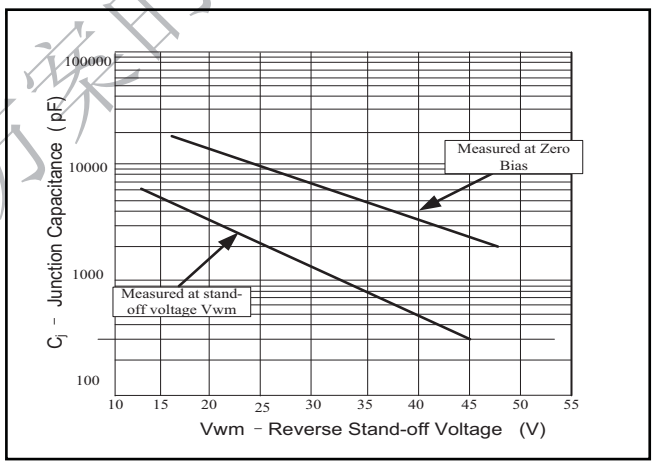


Figure 5 - Steady State Power Dissipation Derating Curve

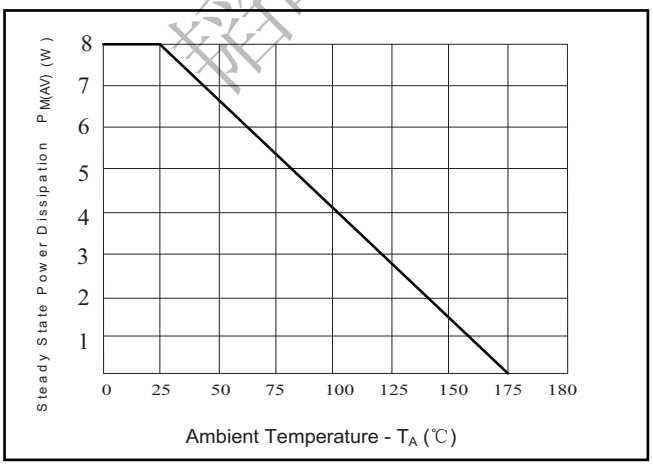
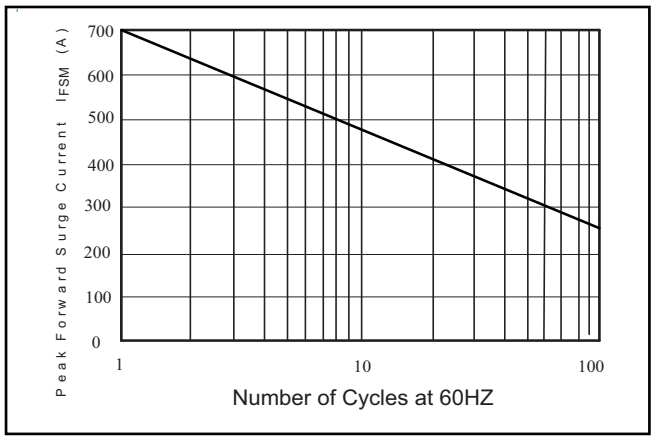


Figure 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



器件性能评估测试报告

（5.5KP24A，测试时间2014.7.16， SMQ实验室）

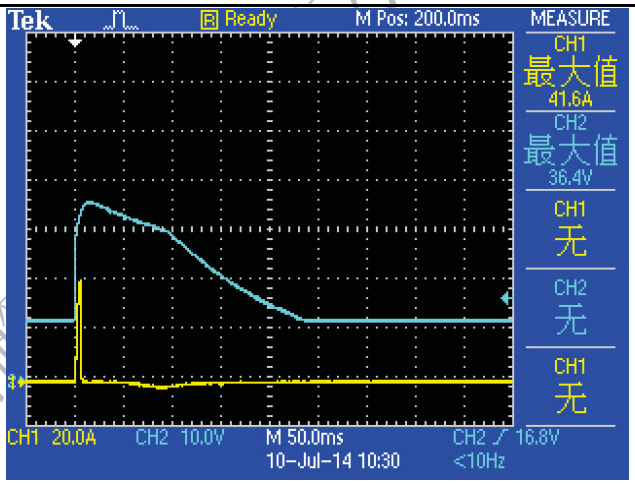
一、浪涌测试前性能评估

样品	击穿电压 VBR@1mA	漏电流 IR@VR=VRWM=12 V	直流特性正常
5.5KP24A	28V	10uA	

二、7637-2-5a波形测试(12V系统，Us=87V，Tr=5-10ms,每个样品正负冲击各10次，每次间隔60s）

测试条件	**100ms**	**200ms**	**350ms**	**400ms**
加12V电源	Vc（V）	Vc（V）	Vc（V）	Vc（V）
4Ω	30.4	30.8	31.2	31.2
2Ω	31.6	32.0	32.4	32.8
1Ω	33.8	35.6	36.4	38.5

测试波形



三、结论

1.5.5KP24A击穿电压28V，漏电流10uA;

2.该器件在7637-5a-12V系统加电条件下测试最高能通过1Ω/400ms-10次测试。

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