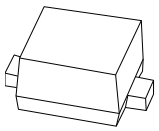
mSD05CMJ

FEATURES

- 100Watts peak pulse power (tp = 8/20μs)
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current



IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 ESD air ±25KV，contact ±25KV
- IEC 61000-4-4 EFT 40A (5/50ns)
- IEC 61000-4-5 Surge 10A (8/20μs)

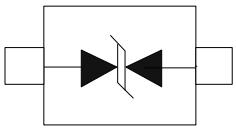
APPLICATIONS

- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Pagers Peripherals

MECHANICAL CHARACTERISTICS

- JEDEC SOD523 package
- RoHS Compliant

SCHEMATIC & PIN CONFIGURATION



SOD523

ABSOLUTE MAXIMUM RATING

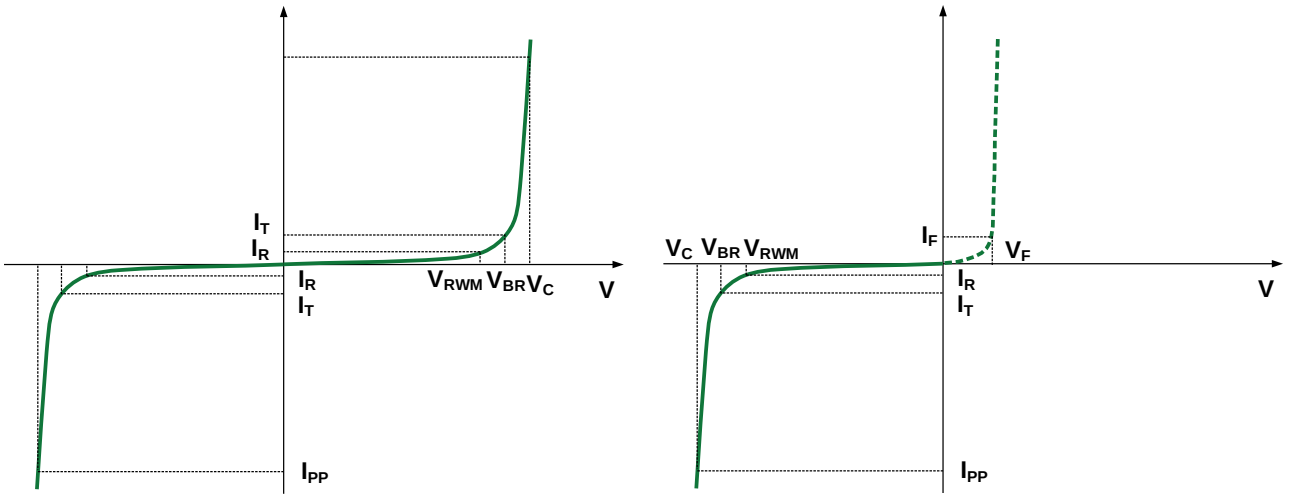
Rating	Symbol	Value	Units
Peak Pulse Power (t_p = 8/20μs)	P_{PK}	100	Watts
Lead Soldering Temperature	T_L	260 (10sec)	℃
Operating Temperature	T_J	-55~150	℃
Storage Temperature	T_{STG}	-55~150	℃
IEC61000-4-2	V_{PP}	Air 25	KV
IEC61000-4-2	V_{PP}	Contact 25	KV

ELECTRICAL CHARACTERISTICS

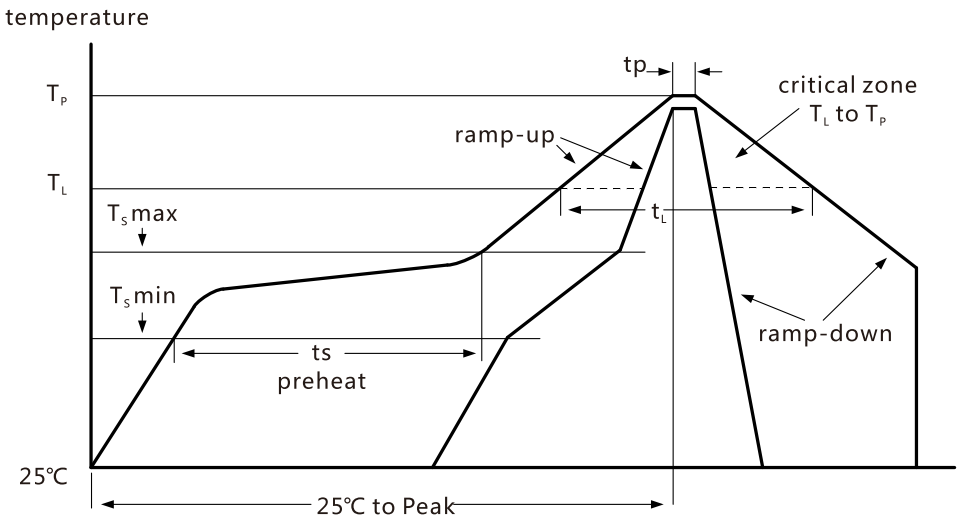
mSD05CMJ

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	It=1mA	6.0			V
Leakage Current	I_R	@V_{RWM}			1.0	μA
Clamping Voltage	V_C	@10A			10	V
Peak Pulse Current	I_{PP}	8/20μs			10	A
Junction Capacitance	C_J	V_R=0V, f=1Mhz		13	15	pf

I-V CURVE CHARACTERISTICS



REFLOW SOLDERING PROFILE



Profile Feature	SnPb eutectic assembly	Pb-free assembly
Average ramp-uprate (T_S max to Tp)	3°C/s maximum	3°C/s maximum
Preheat		
Temperature minimum (T_S min)	100°C	150°C
Temperature maximum (T_S max)	150°C	200°C
Time (T_S min to T_S max)	60 s to 120 s	60 s to 180 s
Time maintained above		
Temperature (T_L)	183°C	217°C
Time (t_L)	60 s to 150 s	60 s to 150 s
Peak/classification temperature (T_P)	235°C	260°C
Number of allowed reflow cycles	3	3
Time within 5 °C of actual peak temperature (tp)	10 s to 30 s	20 s to 40 s
Ramp-down rate	6°C/s maximum	6°C/s maximum
Time 25 °C to peak temperature	6 minutes maximum	8 minutes maximum

Figure 1. Junction Capacitance vs. Reverse Voltage

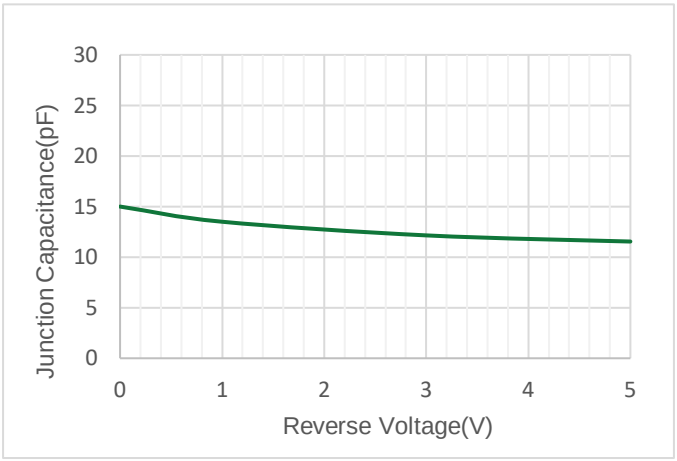


Figure 2. Peak Pulse Power vs. Pulse Time

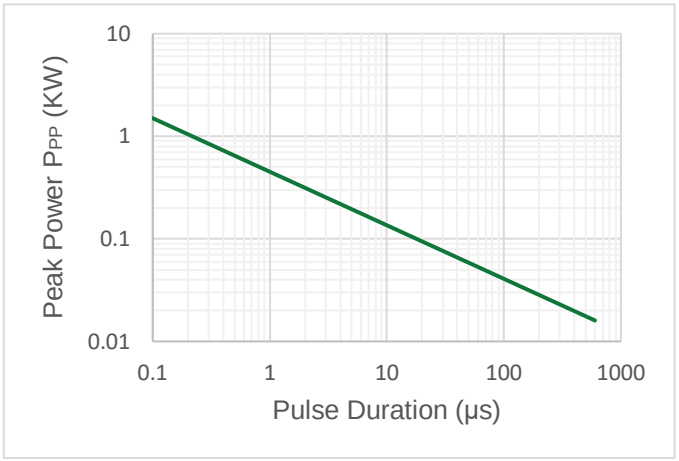


Figure 3. Clamping Voltage vs. Peak Pulse Current

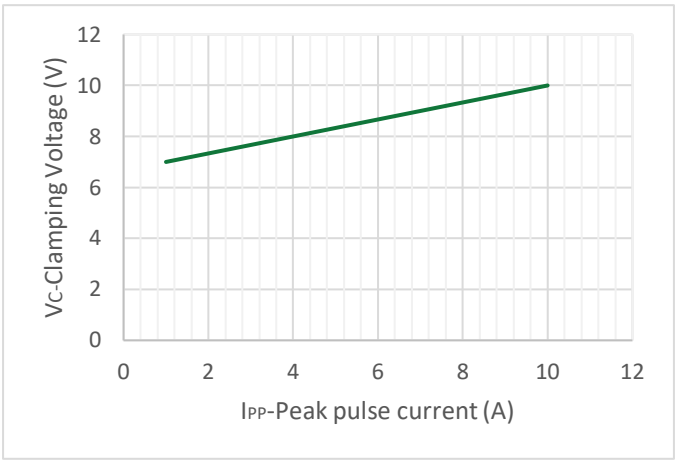


Figure 4. Power Derating Curve

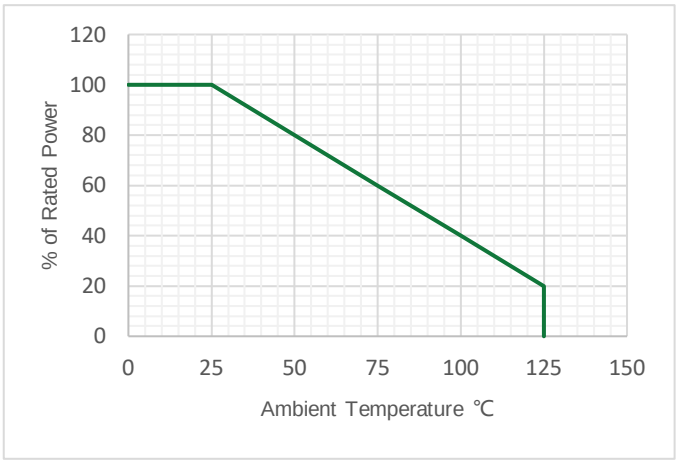
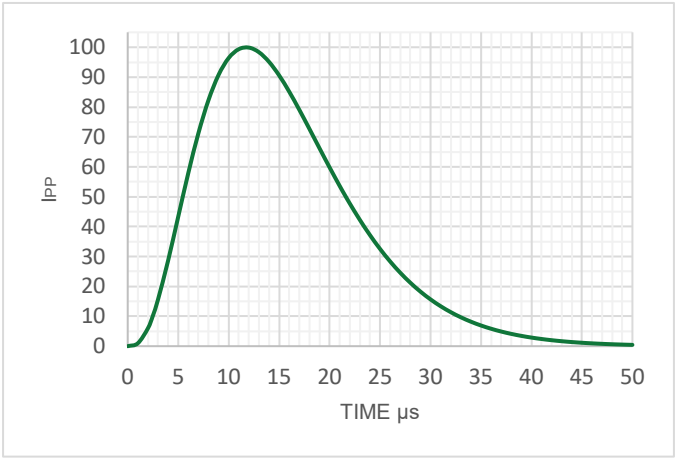
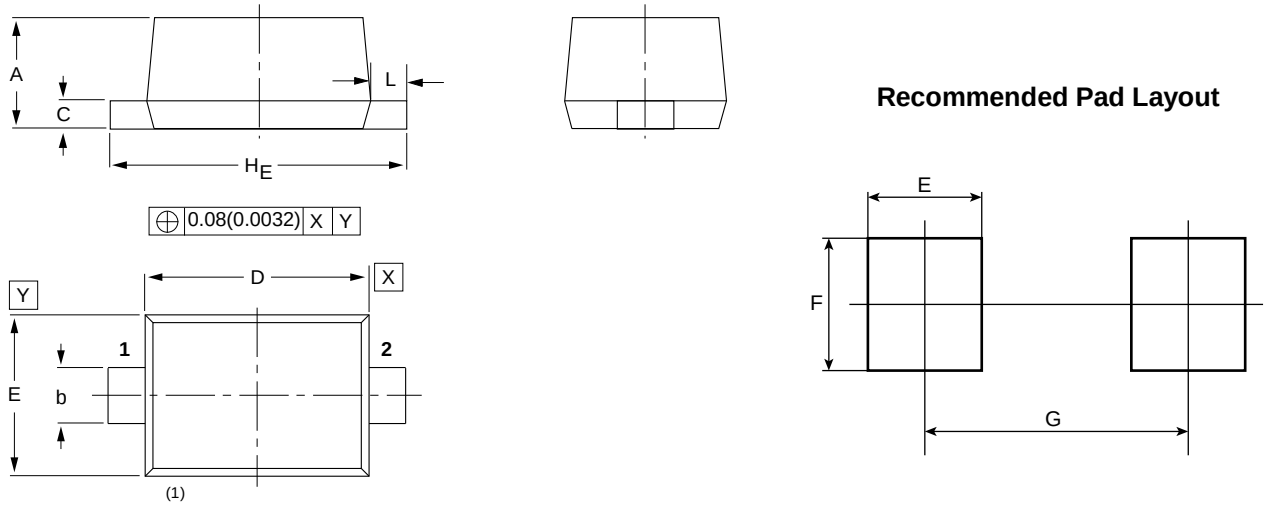


Figure 5. 8/20μs Pulse Waveform



DIMENSIONS



SOD523

DIM	Millimeters			Inch		
	Min	Typ	Max	Min	Typ	Max
A	0.500	-	0.700	0.0200	-	0.0280
b	0.250	-	0.350	0.0100	-	0.0140
C	0.070	-	0.200	0.0028	-	0.0079
D	1.100	-	1.300	0.0430	-	0.0510
E	0.700	-	0.900	0.0280	-	0.0350
H_E	1.500	-	1.700	0.0590	-	0.0670
L	0.150	-	0.250	0.0060	-	0.0100
E	-	0.600	-	-	0.0236	-
F	-	0.700	-	-	0.0276	-
G	-	1.420	-	-	0.0559	-

PACKAGING

Part Number	Marking Code	Package	Quantity	Packaging
mSD05CMJ	5C.	SOD523	5,000pcs	7" Reel