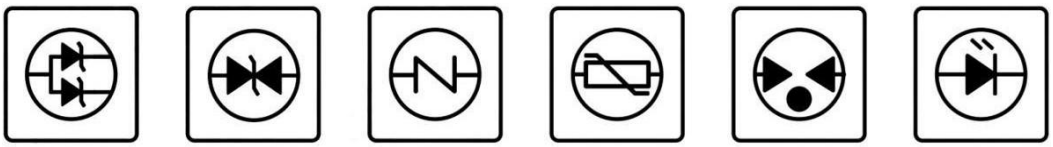
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MSESD5451X

Product specification

Features

- 120W peak pulse power per line (t_P = 8/20μs)
- DFN1006-2L package
- Replacement for MLV(0402)
- Bidirectional configurations
- Response time is typically < 1ns
- Low clamping voltage
- RoHS compliant
- Transient protection for data lines to IEC61000-4-2(ESD) ±30KV(air), ±30KV(contact); IEC61000-4-4 (EFT) 40A (5/50ns)

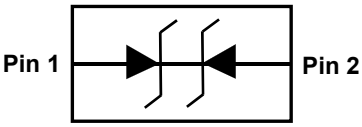
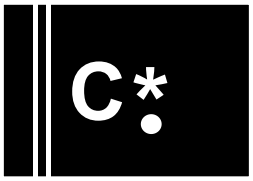
Mechanical Characteristics

- Mounting position: Any
- Qualified max reflow temperature:260℃
- Device meets MSL 1 requirements
- DFN1006-2 without plating

Applications

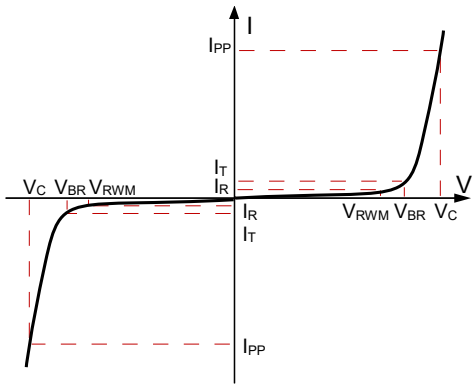
- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

Reference News

DFN1006-2	PIN Configuration	Marking
	 Pin 1 Pin 2 Circuit Diagram	 C*

Electronics Parameter

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F



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Electrical characteristics per line@25℃ (unless otherwisespecified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	I_t = 1mA	5.5	6.4	7.8	V
Reverse Leakage Current	I_R	V_{RWM} = 5V T=25℃			1.0	μA
Clamping Voltage	V_{CL}	I_{PP}= 16A t_p=100ns		8.5		V
Clamping Voltage	V_C	I_{PP}=3A			7.5	V
Clamping Voltage	V_C	I_{PP}=5A			8.0	V
Clamping Voltage	V_C	I_{PP}=10A			12.0	V
Junction Capacitance	C_j	V_R=0V f = 1MHz		15		pF

Absolute maximum rating@25℃

Rating	Symbol	Value	Units
Peak Pulse Power (t_p=8/20μs)	P_{pp}	120	W
Peak Pulse Current (t_p=8/20μs)	I_{PP}	10	A
Operating Temperature	T_J	-55 to 150	℃
Storage Temperature	T_{STG}	-55 to 150	℃

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TypicalCharacteristics

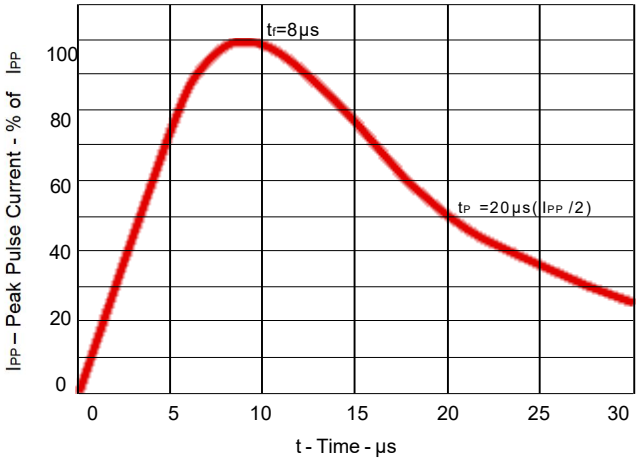


Fig 1.Pulse Waveform

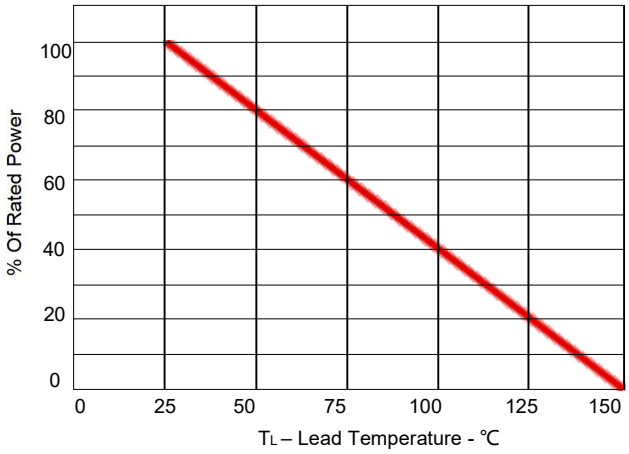


Fig 2.Power Derating Curve

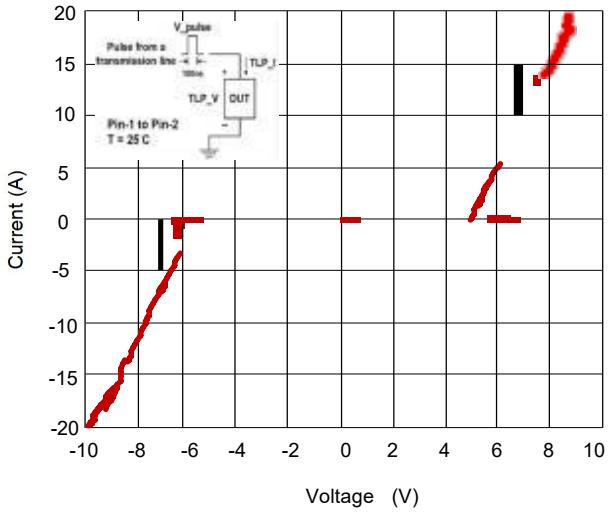


Fig 3.TLP Measurement

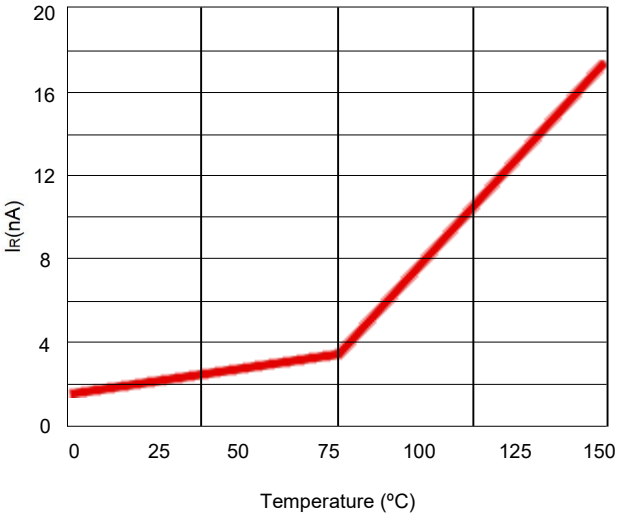


Fig 4.Typical Leakage Current vs. Temperature

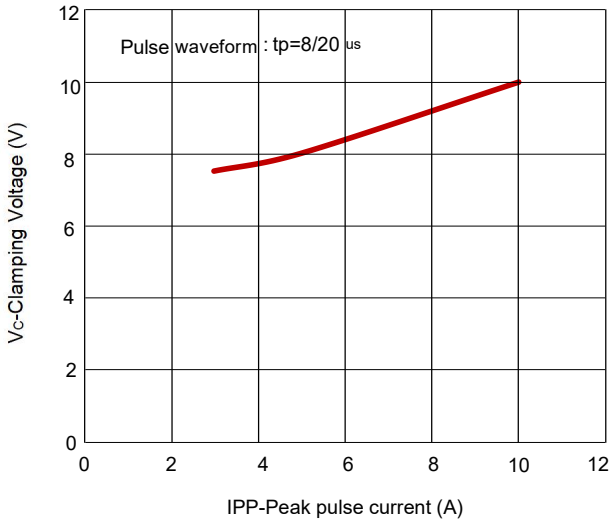


Fig 5. Clamping voltage vs. Peak pulse current

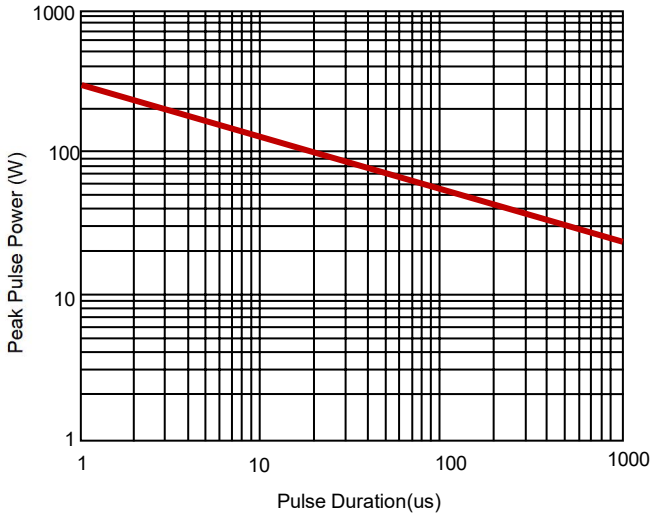


Fig 6. Non-Repetitive Peak Pulse Power vs. Pulse time

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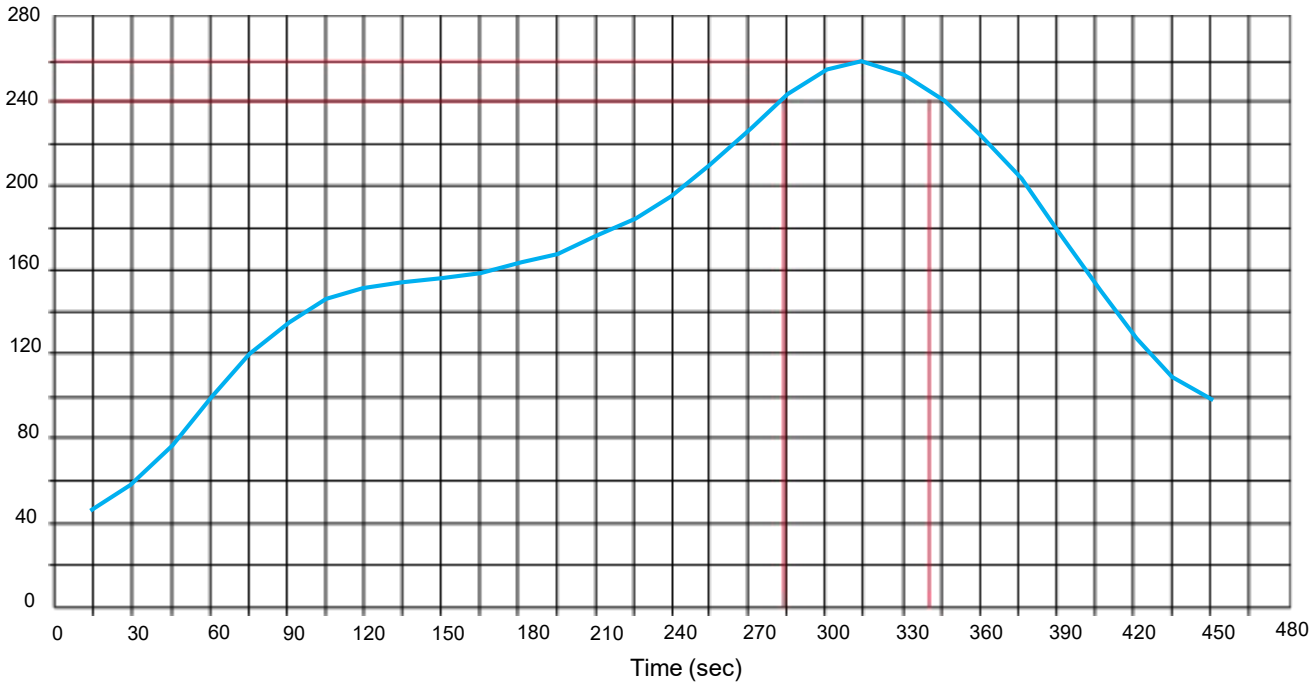


ESD clamping

Fig 7. (8kV contact discharge per IEC61000-4-2)

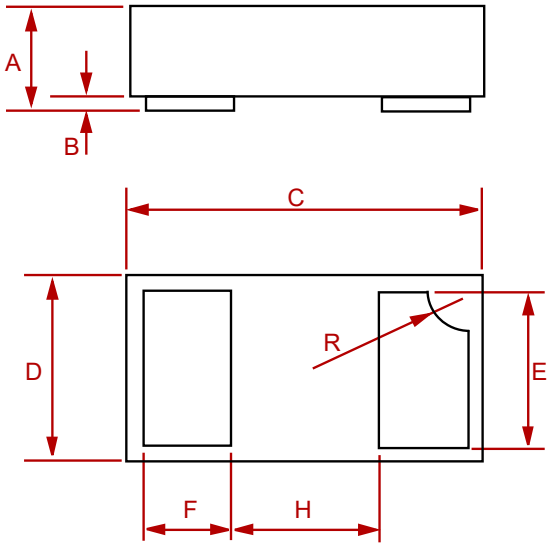
Solder Reflow Recommendation

Peak Temp=257℃ ,Ramp Rate=0.802deg. ℃/sec



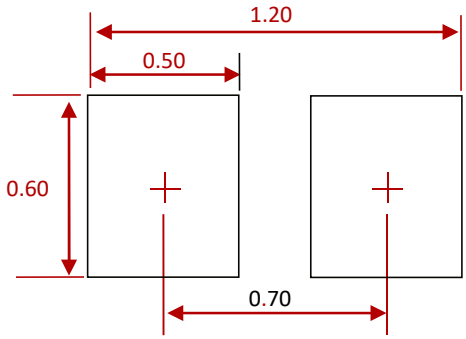
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PACKAGEMECHANICALDATA



Dim	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.0125	0.02	0.32	0.52
B	0.000	0.002	0.00	0.05
C	0.037	0.043	0.95	1.080
D	0.022	0.027	0.55	0.680
E	0.016	0.024	0.40	0.60
F	0.008	0.012	0.20	0.30
H	0.015Typ.		0.40Typ.	
R	0.001	0.005	0.05	0.15

Suggested Pad Layout



NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY.
   CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR
   COMPANY'S MANUFACTURING GUIDELINES ARE MET.

Order information

Orderable Device	Package	Packing Option
MSESD5451X	DFN1006-2	10000PCS

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