

Features

- ◆ 100W Peak Pulse Power per Line ($t_p=8/20\mu s$)
- ◆ Protects one unidirectional I/O line
- ◆ Low clamping voltage
- ◆ Working voltages : 5 V
- ◆ Low leakage current
- ◆ RoHS and HF Compliant
- ◆ IEC Compatibility
IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
IEC61000-4-4 (EFT) 40A (5/50ns)

Applications

- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants (PDA's)
- ◆ Parallel & Serial Port Protection
- ◆ Portable Instrumentation
- ◆ Microcontroller Input Protection
- ◆ ISDN S/T Interface
- ◆ WAN/LAN Equipment

Package and PIN Configuration



(SOD-923)



Schematic Symbol

Marking Information



Product and Packing Information

Part Number	QTY/Reel	Reel Size
MSE9D10U5.0A	8,000	7 inch

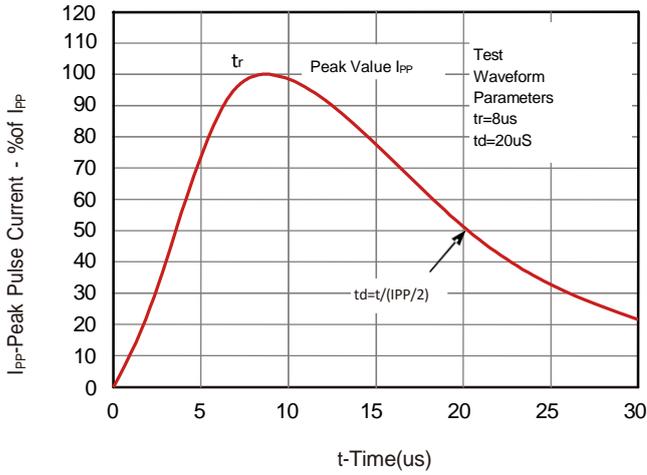
Thermal Considerations

Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p=8/20\mu s$ waveform)	P_{PP}	100	W
Operating Temperature Range	T_J	-55 to +125	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}C$
Lead Soldering Temperature	T_L	260 (10 sec.)	$^{\circ}C$

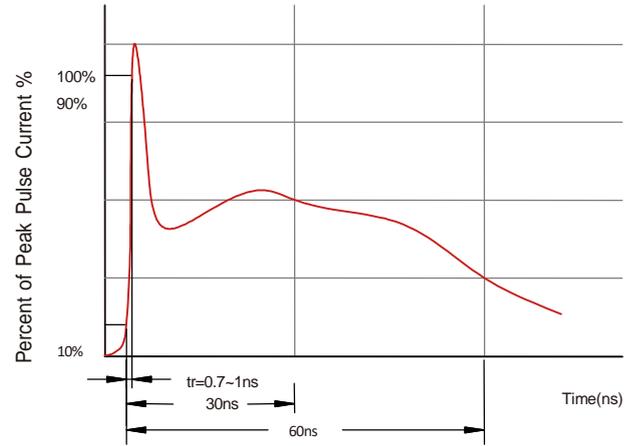
Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Reverse Stand-off Voltage	V_{RWM}			5	V	
Reverse Breakdown Voltage	V_{BR}	6.2			V	$I_T=1mA$
Reverse Leakage Current	I_R			1	μA	$V_{RWM}=5V$
Clamping Voltage	V_C			12.3	V	$I_{PP}=7.5A, t_p=8/20\mu s$
Peak Pulse Current	I_{PP}			7.5	A	$t_p=8/20\mu s$
Off State Junction Capacitance	C_J		40		pF	$V_R=0V, f=1MHz$

Characteristic Curves



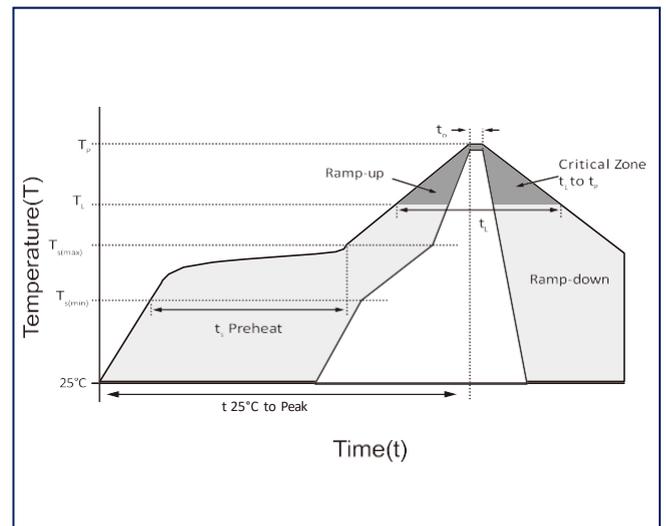
8/20µs Pulse Waveform



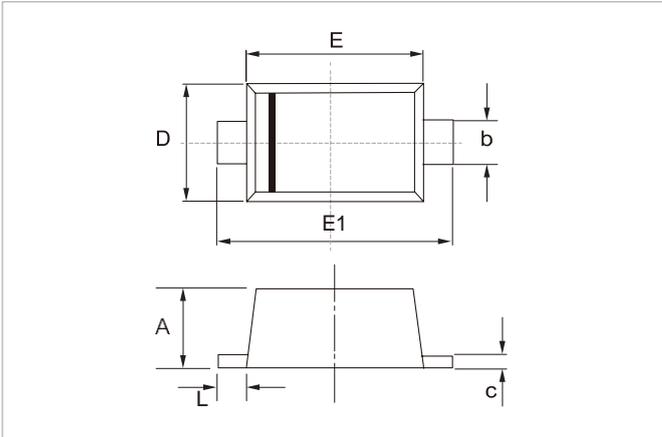
ESD Pulse Waveform (according to IEC)

Soldering Parameters

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_r)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

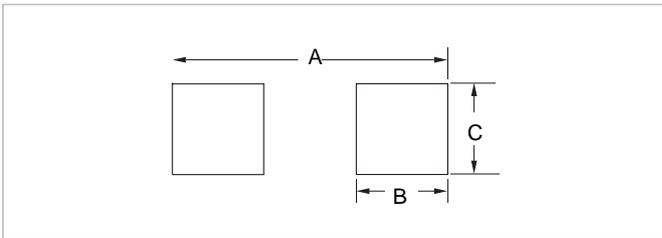


SO-923 Package Information



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.34	0.50	0.013	0.020
b	0.15	0.3	0.006	0.012
c	0.07	0.15	0.003	0.006
D	0.50	0.70	0.020	0.028
E	0.70	0.90	0.028	0.036
E1	0.90	1.10	0.036	0.044
L	0.05	0.15	0.002	0.006

Recommended Pad Lay Out Dimensions



Ref.	Millimeters	Inches
A	1.10	0.043
B	0.30	0.012
C	0.40	0.016