

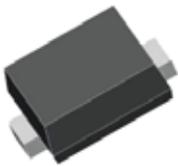
Features

- ◆ Protects one Bidirectional I/O line
- ◆ Low clamping voltage
- ◆ Working voltages : 3.3 V
- ◆ Low Leakage current
- ◆ RoHS and HF Compliant
- ◆ IEC Compatibility
IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
IEC61000-4-4 (EFT) 40A (5/50ns)

Applications

- ◆ Cellular Handsets and Accessories
- ◆ Personal Digital Assistants
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Digital Cameras
- ◆ Peripherals
- ◆ Audio Players
- ◆ Keypads, Side Keys, LCD Displays

Package and PIN Configuration

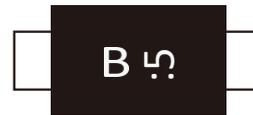


(SOD-923)



Schematic Symbol

Marking Information



Product and Packing Information

Part Number	QTY/Reel	Reel Size
MSE9D10B3.3A	8,000	7 inch

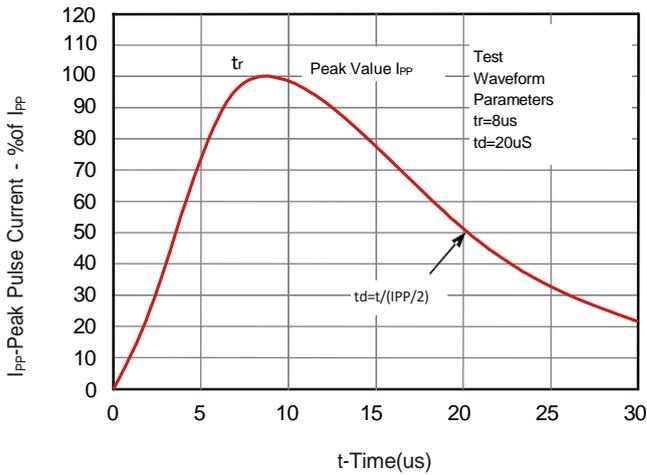
Thermal Considerations

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P _{PP}	60	W
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

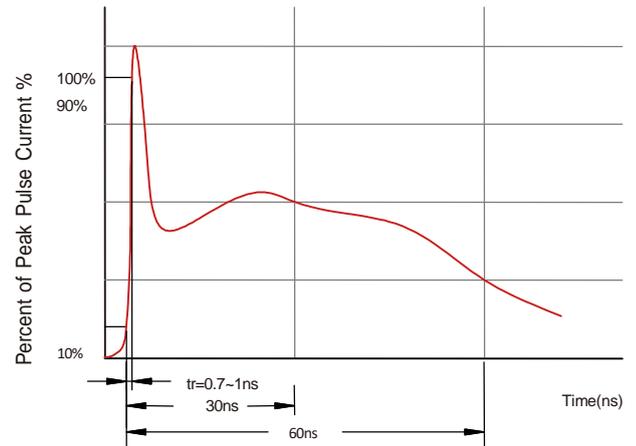
Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Reverse Stand-off Voltage	V _{RWM}			3.3	V	
Reverse Breakdown Voltage	V _{BR}	4.5	5.2	6.5	V	I _T =1mA
Reverse Leakage Current	I _R			200	nA	V _{RWM} =3.3V
Clamping Voltage	V _C			7	V	I _{PP} =1A, tp=8/20μs
Clamping Voltage	V _C			9	V	I _{PP} =8A, tp=8/20μs
Peak Pulse Current	I _{PP}			8	A	tp=8/20μs
Off State Junction Capacitance	C _J		15		pF	V _R =0V, f=1MHz

Characteristic Curves



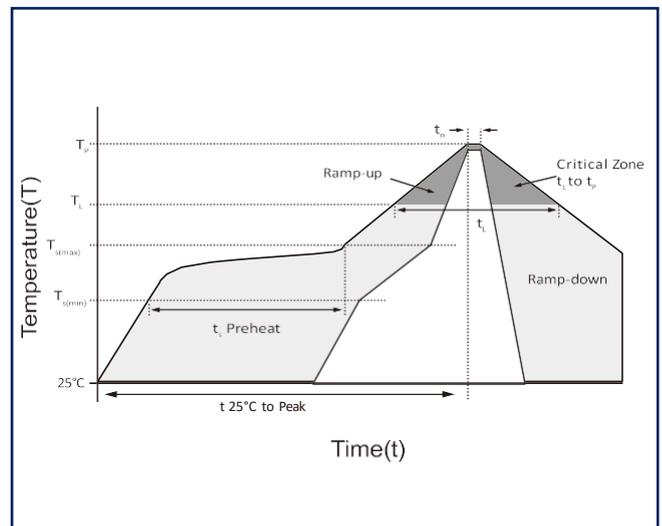
8/20µs Pulse Waveform



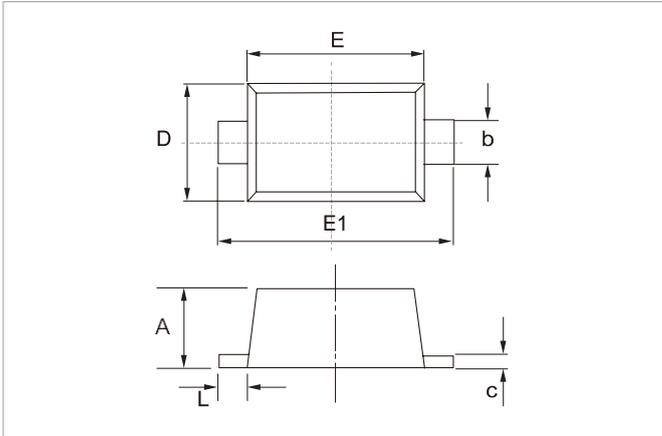
ESD Pulse Waveform (according to IEC)

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

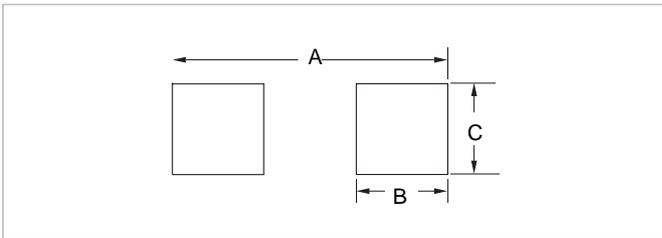


SO-923 Package Information



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