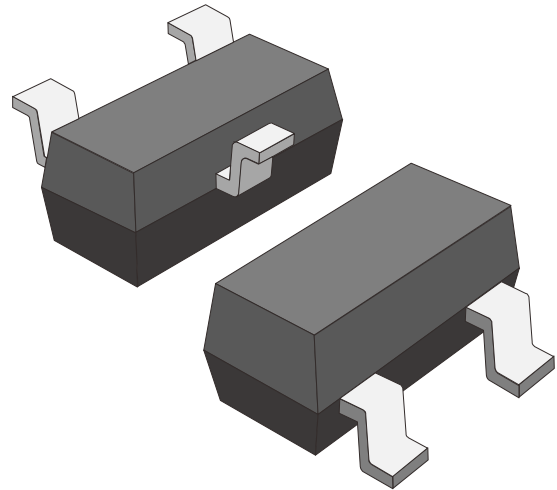


## Normal Capacitance 2-Line ESD Protection Device

### Features

- ◆ 400Watts peak pulse power ( $t_p = 8/20\mu s$ )
- ◆ Bi-directional configurations
- ◆ Solid-state silicon-avalanche technology
- ◆ Capacitance: 26pF typical
- ◆ Low clamping voltage
- ◆ Low leakage current
- ◆ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30KV$
    - Contact discharge:  $\pm 30KV$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 8A (8/20us)
- AEC-Q 101 qualified (Automotive grade with suffix "Q ".)
- Exsemi technology

SOT-23



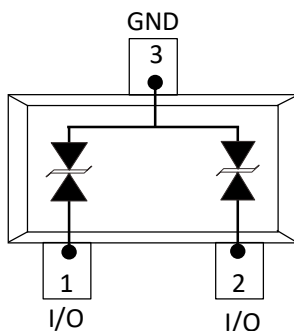
### Applications

- Cellular Handsets and Accessories
- Notebook and Handhelds
- Portable Instrumentation
- Set Top Box
- Industrial Controls
- Server and Desktop PC

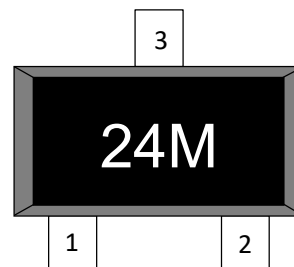
### Mechanical Data

- Package: SOT-23
- UL Flammability Classification Rating 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

### Schematic & PIN Configuration



### Marking



## Absolute Maximum Ratings

Parameter	Symbol	Value	Units
Reverse Working Voltage	$V_{RWM}$	24	V
Peak Pulse Power (tp=8/20μs)	$P_{PP}$	400	W
Peak Pulse Current (tp=8/20μs)	$I_{PP}$	8	A
ESD per IEC 61000-4-2 (Air)	$V_{ESD-Air}$	30	KV
ESD per IEC 61000-4-2 (Contact)	$V_{ESD-Contact}$	30	KV
Lead Soldering Temperature (10s)	$T_L$	260	°C
Operating Temperature Range	$T_J$	-55 to 125	°C
Storage Temperature Range	$T_{STG}$	-55 to 150	°C

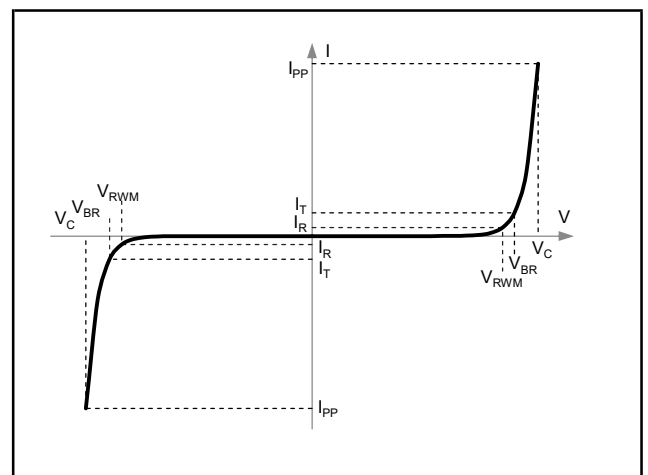
## Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Leakage Current	$I_R$	$V_{RWM} = 24V$			0.5	uA
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	26.7			V
Clamping Voltage	$V_C$	$I_{PP} = 1A, tp=8/20\mu s$			35	V
		$I_{PP} = 8A, tp=8/20\mu s$			45	V
Junction Capacitance	$C_J$	$V_{DC} = 0V, f=1MHz$		26		pF

Notes: The default test is I/O pin to ground.

## Electrical Parameters

Symbol	Definition
$I_{PP}$	Peak Pulse Current
$V_C$	Clamping Voltage
$V_{RWM}$	Reverse Working Voltage
$I_R$	Reverse Leakage Current
$V_{BR}$	Breakdown Voltage
$I_T$	Test Current



## Typical Characteristics

Fig.1 - Peak Pulse Power Rating

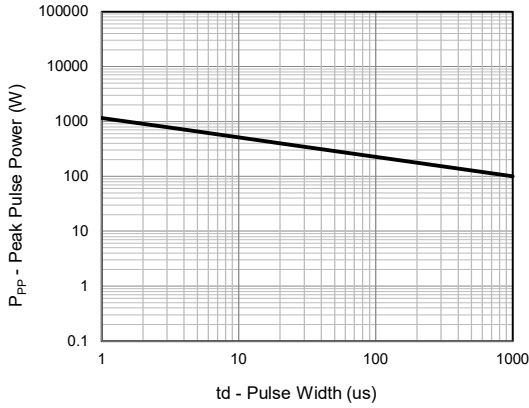


Fig.2 - Pulse Derating Curve

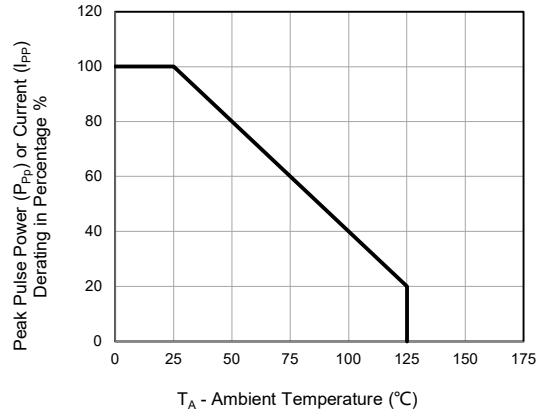


Fig.3 - 8/20us Pulse Waveform

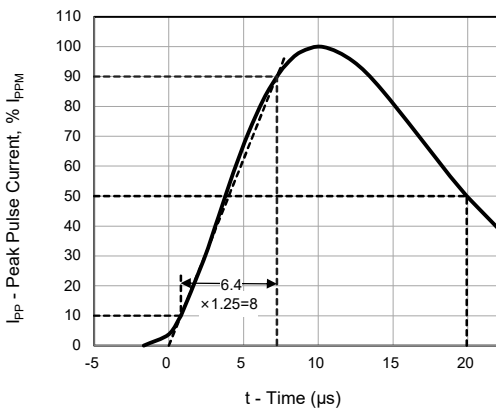


Fig.4 - Typical Clamping Voltage

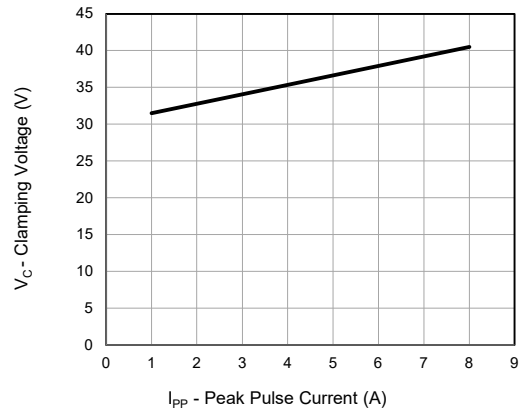


Fig.5 - ESD Pulse Waveform (IEC61000-4-2)

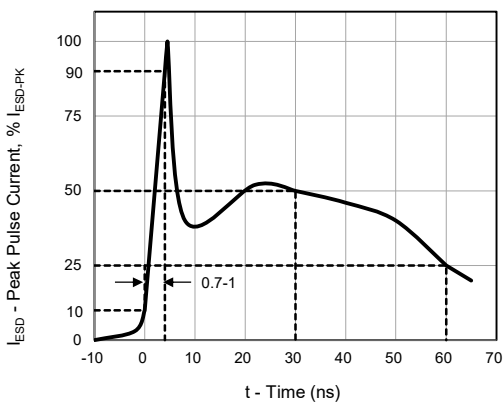
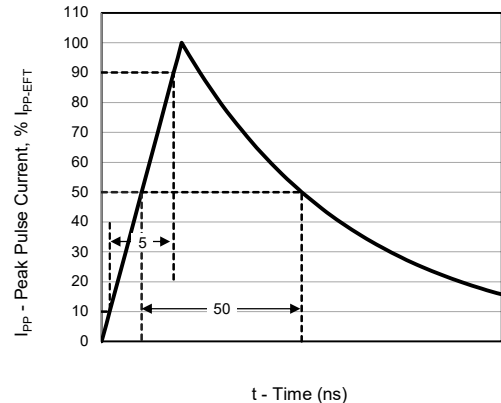
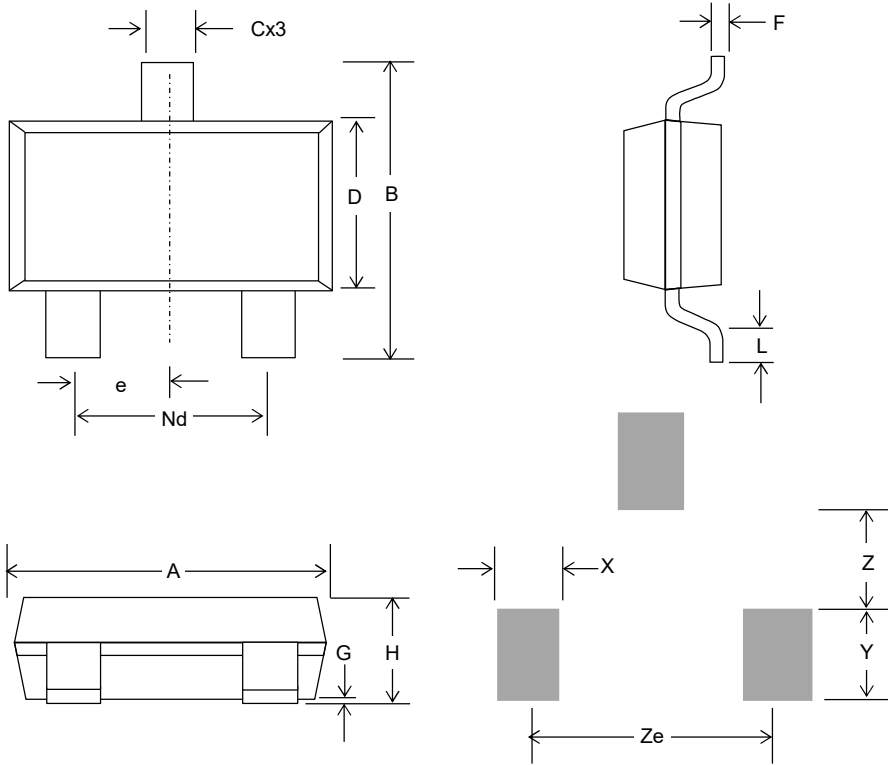


Fig.6 - 5/50ns EFT Waveform (IEC61000-4-4)



Outline Drawing



SOT-23			
SYMBOL	Millimeters		
	MIN	NOM	MAX
A	2.8	2.92	3.04
B	2.1	2.37	2.64
C	0.3		0.51
D	1.2		1.4
F	0.08		0.18
G	0.01		0.1
H	0.89	1	1.12
L	0.4	0.5	0.6
e		0.95	
Nd		1.9	
X		1	
Y		1.4	
Z		0.8	
Ze		1.9	

Ordering Information

Order Code	Package	Base Quantity	Delivery Mode
EP13C2412MS	SOT-23	3000 PCS/Reel	Tape and Reel

