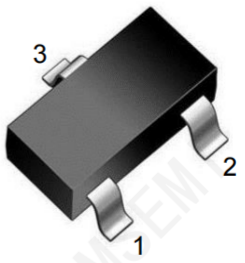
Features

◇200W(8/20μs) Peak Pulse Power
◇High ESD Protection Level
◇ SOT-323ThinSMDPackage
◇ RoHS compliant
◇ Matte Tin Lead finish (Pb-Free)
◇Protect Tw SM24CBW us Lines



SOT-323 top view

Applications

◇ DeviceNet
◇ Low and High Speed SM24CBW
◇ Smart Distribution Systems (SDS)
◇ Controlled Area Network – ESD 1.1 / ESD FD

Circuit Diagram

Maximum Ratings (Ta = 25℃)

Parameter		Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	Air Model	$V_{ESD(1)}$	±25	kV
	Contact Model		±25	
JESD22-A114-B ESD Voltage	Per Human Body Model		±16	
ESD Voltage	Machine Model		±0.4	
Peak Pulse Power		$P_{PP(2)}$	200	W
Peak Pulse Current		$I_{PP(2)}$	3	A
Lead Solder Temperature – Maximum (10 Second Duration)		T_L	260	℃
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55 ~ +150	℃

(1).Device stressed with ten non-repetitive ESD pulses.

(2).Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

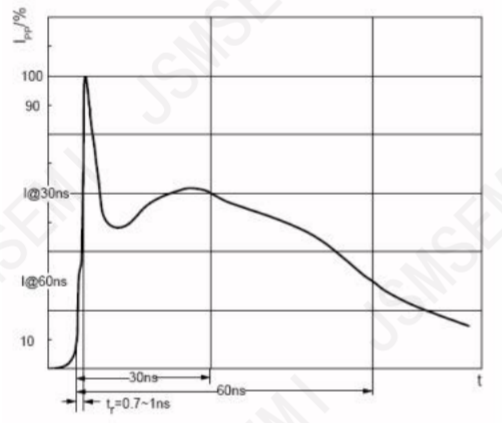
ESD standards compliance

IEC61000-4-2 Standard

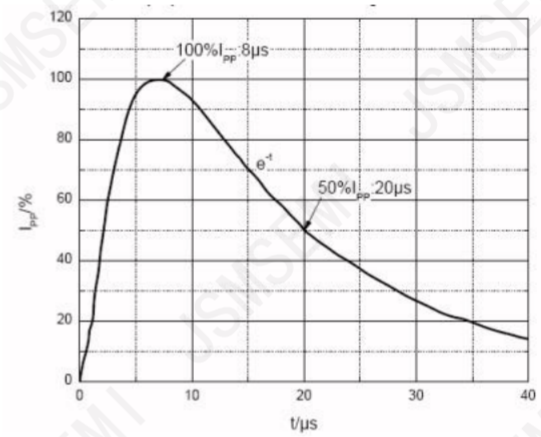
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

JESD22-A114-B Standard

ESD Class	Human Body Discharge V
0	0～249
1A 1B 1C	250～499 500～999 1000～1999
2	2000～3999
3A 3B	4000～7999 8000～15999

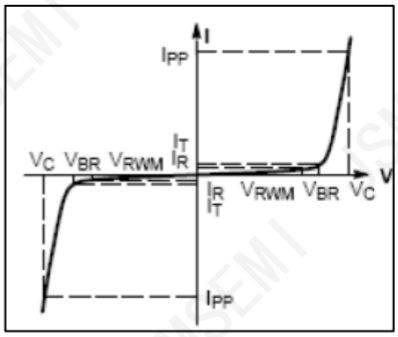


ESD pulse waveform according to IEC61000-4-2



8/20μs pulse waveform according to IEC 61000-4-5

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage

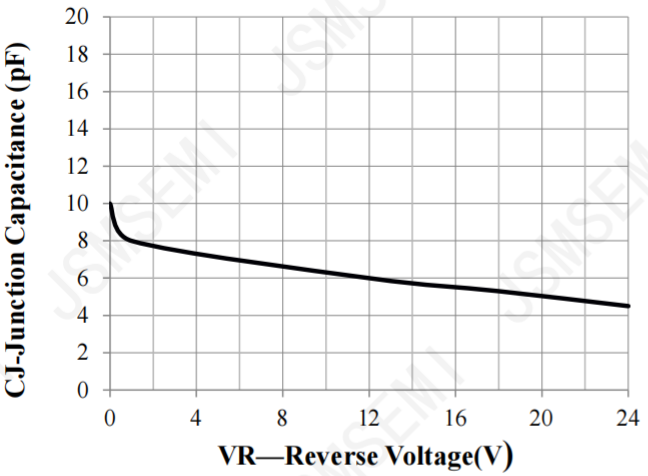


V-I characteristics for a Bi-directional TVS

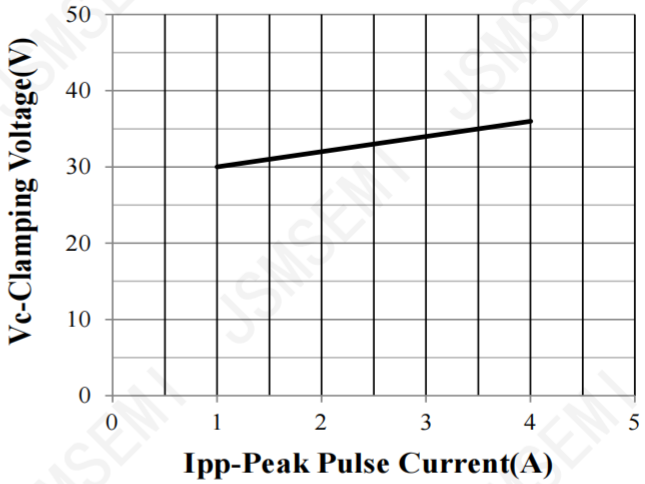
Electrical Characteristics (Ta = 25℃)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VRWM	Reverse Working Peak Voltage				24	V
VBR	Reverse Breakdown Voltage	IT = 1mA	26.7	28	33	V
IR	Reverse Leakage Current	VRWM = 2 4 V			1	μA
VC	Clamping Voltage	IPP = 1 A (8/20μs		35	40	V
VC	Clamping Voltage	)IPP = 3 A (8/20μs)		38	60	V
Ipp	Peak Pulse Current	□p = 8/20μs			3	A
CJ	Capacitance	VR = 0V, f = 1MHz		20		pF

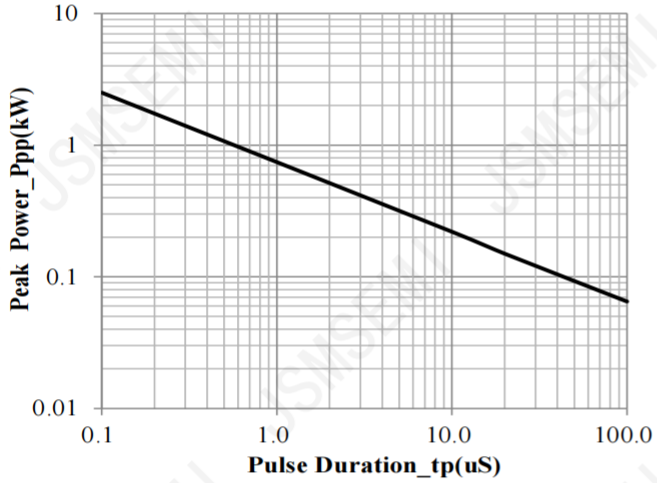
Typical Performance Characteristics (T A =25°C unless otherwise Specified)



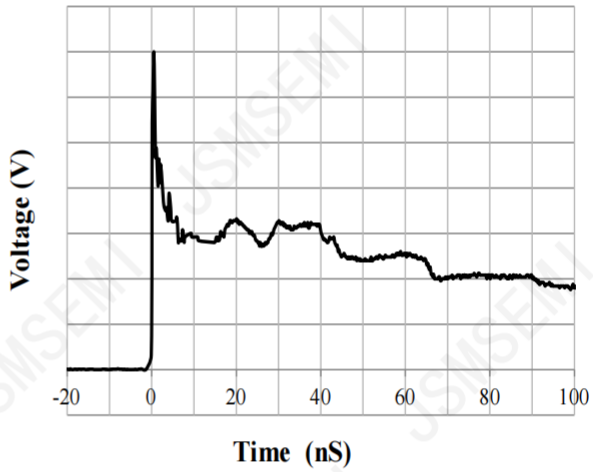
Junction Capacitance vs. Reverse Voltage



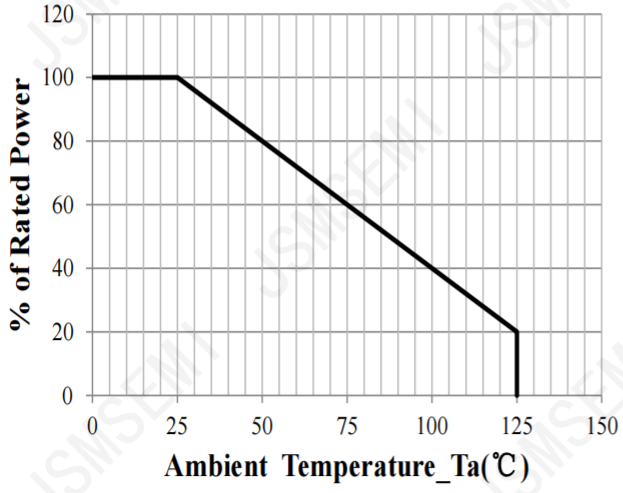
Clamping Voltage vs. Peak Pulse Current



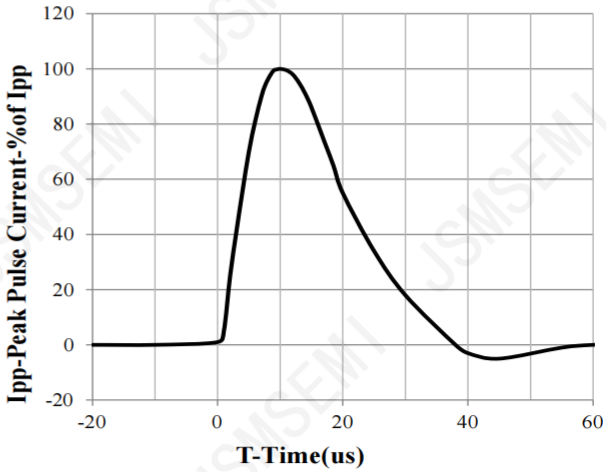
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



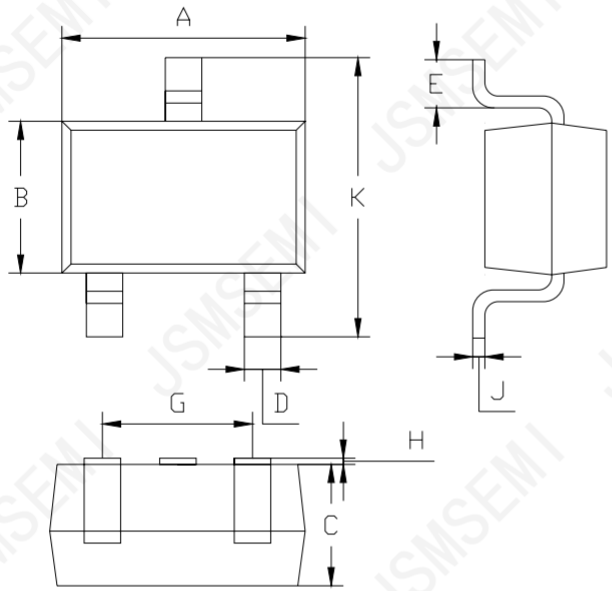
Power Derating Curve



8 X 20us Pulse Waveform

Package Information

SOT-323



SOT-323		
Dim	Min	Max
A	1.8	2.2
B	1.15	1.35
C	1.0Typical	
D	0.15	0.35
E	0.25	0.40
G	1.2	1.4
H	0.02	0.1
J	0.1Typical	
K	2.1	2.3
All Dimensions in mm		

Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

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