TPSE33T20B24B

Electrostatic Discharge Protection Device

FEATURES

- 200W Peak Pulse Power (tp=8/20μs)
- Protects tow I/O lines
- Working voltages : 24 V
- Low leakage current
- Low clamping voltage
- Response time is < 1 ns
- Meet AEC-Q101 Requirements

APPLICATIONS

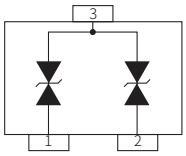
- High-Speed Data Transmission Interfaces
- Cellular Phones
- Portable Electronics
- Wireless Bus Protection



SOT-323



Marking



Schematic Symbol

IEC COMPATIBILITY

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

THERMAL CONSIDERATIONS

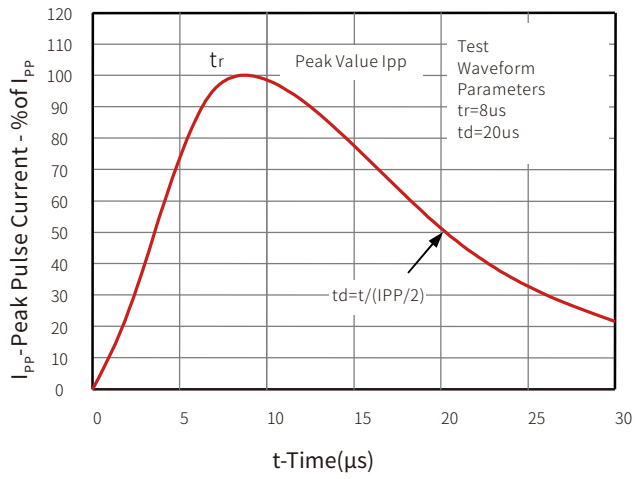
Symbol	Parameter	Value	Unit
P_{PP}	Peak Pulse Power (tp=8/20μs waveform)	200	Watts
T_J	Operating Temperature Range	-55 ~ +150	°C
T_{STG}	Storage Temperature Range	-55 ~ +150	°C

ELECTRICAL CHARACTERISTICS

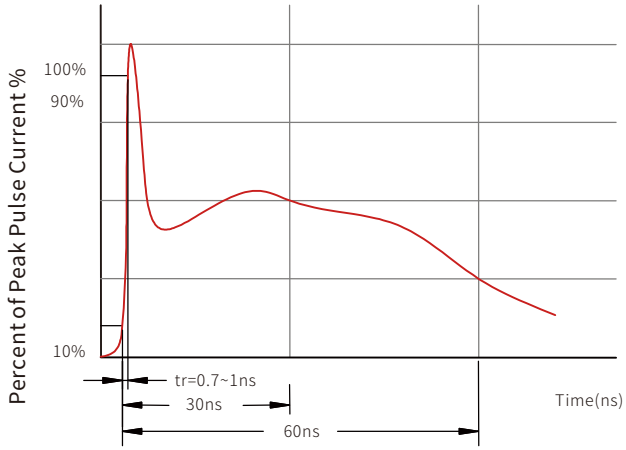
Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
V_{RWM}	Reverse Stand-off Voltage				24	V
V_{BR}	Reverse Breakdown Voltage	I_T=1mA	26.7			V
I_R	Reverse Leakage Current	V_{RWM}=24V			1	μA
V_C	Clamping Voltage	I_{PP}=1A,tp=8/20μs			43	V
V_C	Clamping Voltage	I_{PP}=4A,tp=8/20μs			50	V
I_{PP}	Peak Pulse Current	tp=8/20μs			4	A
C_J	Off State Junction Capacitance	V_R=0V, f=1MHz		12	18	pF

CHARACTERISTIC CURVES

8/20μs Pulse Waveform

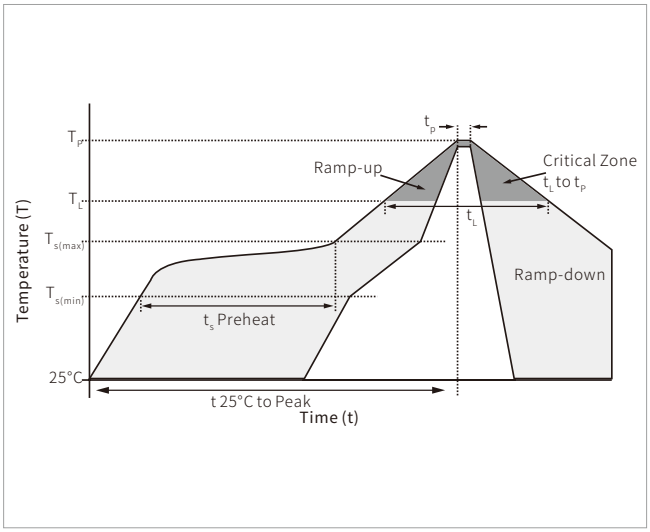


ESD Pulse Waveform (according to IEC 61000-4-2)

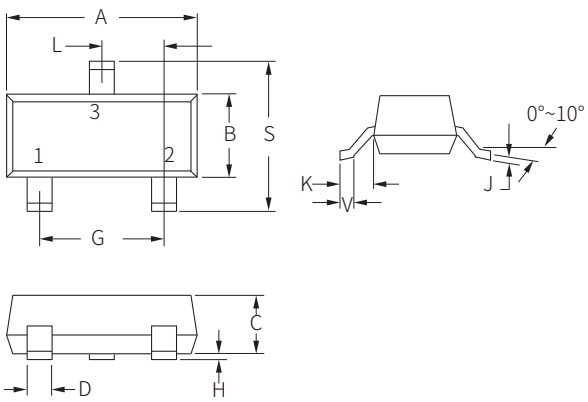


SOLDERING PARAMETERS

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_L)	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

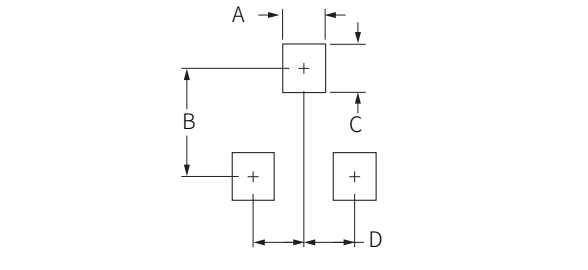


SOT-323 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.00	2.20	0.079	0.087
B	1.15	1.35	0.045	0.053
C	0.80	1.10	0.031	0.043
D	0.20	0.40	0.008	0.016
G	1.20	1.40	0.047	0.055
H	0.00	0.10	0.000	0.004
J	0.08	0.15	0.003	0.006
K	0.525REF		0.021REF	
L	0.650TYP		0.026TYP	
S	2.15	2.45	0.085	0.096
V	0.26	0.46	0.010	0.018

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
	NOR	NOR
A	0.50	0.020
B	2.20	0.087
C	0.80	0.031
D	1.30	0.051

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
TPSE33T20B24B	SOT-323	3000PCS	7”

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