

DESCRIPTION

The ST25T50B8.0 is targeted for the tertiary or line driver side protection position for VDSL2+, ADSL2 applications and general I/O protection functions. This new low capacitance over voltage protection does not require a bias voltage and is sufficiently robust for the chip-side position behind the coupling transformer.

This SOT23-5 solution, with its flow-through design, minimizes PCB trace layout routing, while its four different stand-off voltage values offer compatibility with a variety of line drivers. Its low capacitance makes it compatible with ADSL2 and VDSL2, and the 30MHz bandplan of VDSL2+.

FEATURES

- >Lower overshooting protection than clamping
- >SOT23-5 surface mount package
- >Low insertion loss
- >Low capacitance
- >Bidirectional transient voltage protection
- >Robust surge rating
- >Starts to switch in nanoseconds

APPLICABLE GLOBAL STANDARDS

- >YD/T 950
- >YD/T 993
- >YD/T 1082
- >GR 1089 Inter-building
- >GR 1089 Intra-building
- >IEC 61000-4-2
- >IEC 61000-4-5
- >ITU K.20/21 Basic Level
- >ITU K.20/21 Enhanced Level
- >TIA-968-A
- >TIA-968-B

IEC COMPATIBILITY

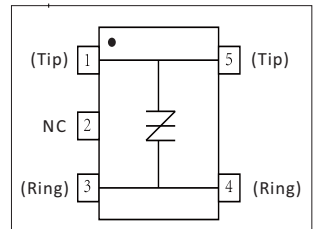
- >IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- >IEC61000-4-4 (EFT) 40A (5/50ns)

MAXIMUM RATINGS @ 25°C UNLESS OTHERWISE SPECIFIED

PARAMETER	SYMBOL	VALUE	UNIT
Lightning surge waveforms(8/20uS)	I _{PP}	50	A
Operating Free Temperature Range	T _A	-40~85	°C
Operating Temperature Range	T _J	-40~150	°C
Storage Temperature Range	T _{STG}	-40~150	°C

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C UNLESS OTHERWISE SPECIFIED

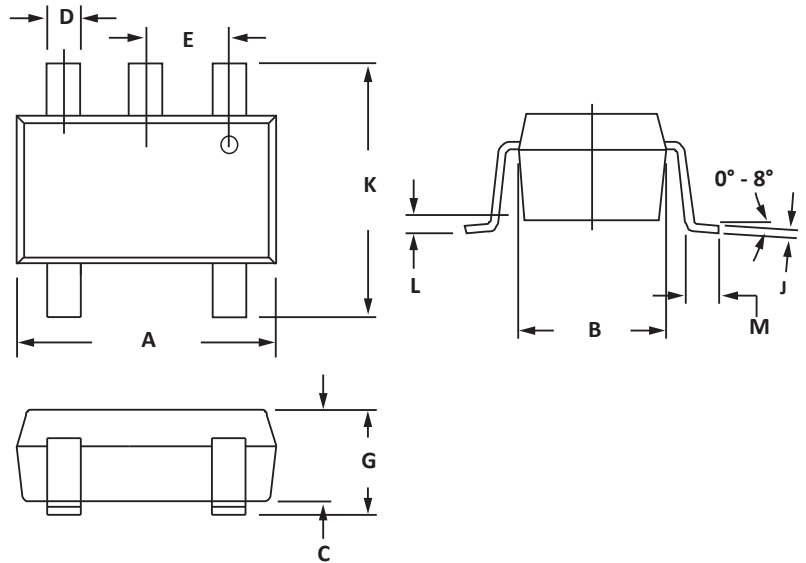
PART NUMBER	V _{DRM} @ I _{DRM} =5μA (V) Min.	V _S @250V/μs (V) Max.	V _T @I _T =1.0 Amps (V) Max.	Co@f=1MHz,2V (pF) Typ.	I _H (mA) Typ.	I _S (mA) Max.
ST25T50B8.0	8.0	15.0	4.0	6.5	30	500



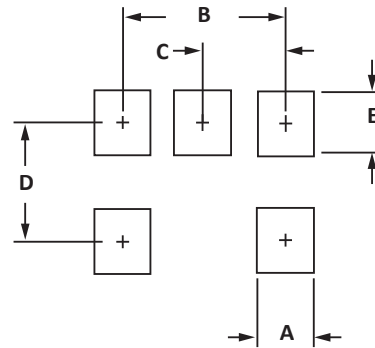
PIN CONFIGURATIONS

SOT-23-5 PACKAGE INFORMATION

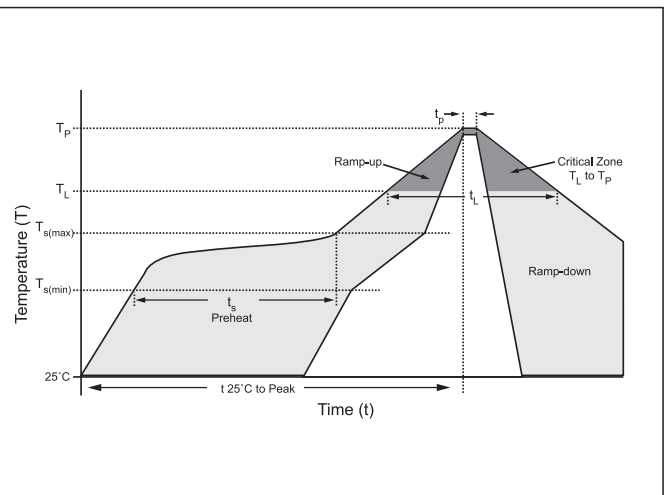
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.05	0.110	0.120
B	1.50	1.75	0.059	0.070
C	0.90	1.30	0.036	0.051
D	0.30	0.40	0.012	0.016
E	0.85	1.05	0.033	0.040
G	0.90	1.45	0.036	0.057
J	0.09	0.20	0.003	0.008
K	2.60	3.00	0.102	0.118
L	0.0	0.15	0.0	0.006
M	0.30	0.60	0.012	0.024



PAD LAYOUT DIMENSIONS		
DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	0.70	0.028
B	1.90	0.074
C	0.95	0.037
D	2.40	0.094
E	1.00	0.039


SOLDERING PARAMETERS

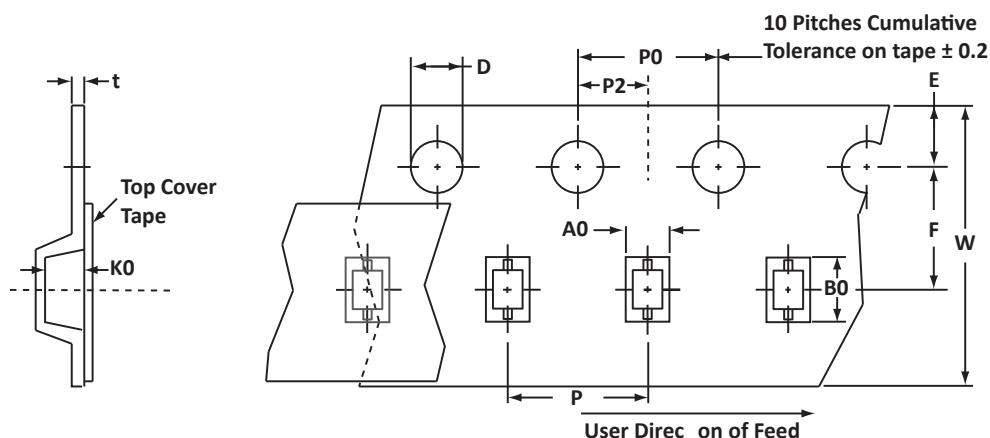
Reflow Condition		Lead-free assembly
Pre Heat	Temperature Min (Ts(min))	150°C
	Temperature Max (Ts(max))	200°C
	Time (min to max) (ts)	60 – 180 secs
Average ramp up rate (Liquidus Temp (TL) to peak)		3°C/second max
Ts(max) to TL - Ramp-up Rate		3°C/second max
Reflow	Temperature (TL) (Liquidus)	217°C
	Time (min to max) (ts)	60 – 150 seconds
Peak Temperature (TP)		260°C
Time within 5°C of actual peak Temperature (tp)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (TP)		8 minutes Max.
Do not exceed		260°C



ENVIRONMENTAL CHARACTERISTICS

Testing Items	Technical Standards
High Temperature Reverse Bias Test	Temperature:150±3°C,Bias=80%V _{DRM} ;Time:168H
High Temperature Life Test	Temperature:150°C;Time:168H
High-Low Temperature Cycle Test	Temperature:From -40°C to 150°C;Dwell Time:30min,10-100 Cycles
High Temperature&High Humidity Test	Temperature:85°C.Humidity:85%; Time:168H
Pressure Cooker Test	Temperature:121°C,2 atm.Humidity:100%; Time:24H To 168H
Resistance Of Soldering Heat	Temperature:260±5°C;Time Of Dip Soldering:10s,3 Times

TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	t _{max}
178mm (7")	8mm	1.55 ± 0.10	2.90 ± 0.10	1.35 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	0.25

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
ST25T50B8.0	SOT-23-5	3000PCS	7"

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