S-TRCAN24T1G

ESD Protection Diode

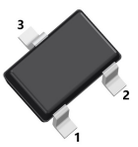
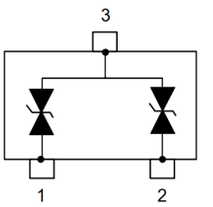
1. FEATURES

- We declare that the materials of products comply with RoHS and halogen-free requirements.
- S-prefix products are certified to the AEC-Q101/Q100 standards. PPAP is available for all these products.
- Ideal for surface mounted application.
- This product is compliant with Level 1 of the Moisture Sensitivity Test (J-STD-020).

2. APPLICATIONS

- CAN bus protection
- Automotive applications

3. PRODUCT APPEARANCE IMAGES

Product outline	Graphic symbol
 SC-70(SOT-323)	

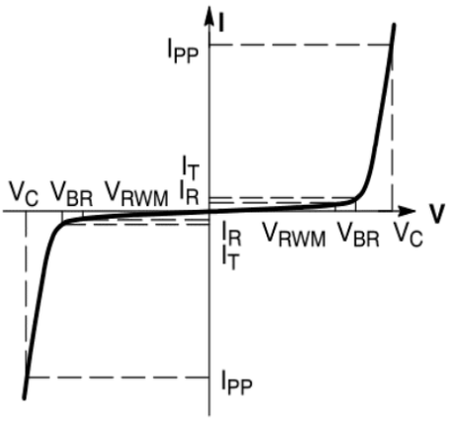
4. MAXIMUM RATINGS (Ta = 25ºC)

Symbol	Characteristic and Condition	Limits	Unit
ESD	IEC 61000-4-2 (ESD) Rating Of Contact	±30	KV
ESD	IEC 61000-4-2 (ESD) Rating Of Air	±30	KV
P_{PP}	Peak Pulse Power	250	W
I_{PPM}	Maximum Reverse Peak Pulse Current	3.7	A
T_j	Junction Temperature	−55~ +150	ºC
T_{stg}	Junction and Storage Temperature	−55~ +150	ºC

1.Surge current waveform per Figure 1 according to IEC 61000-4-5.

5. ELECTRICAL CHARACTERISTICS (Ta= 25ºC)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{pk}	Peak Power Dissipation
C	Capacitance @ V_R = 0 and f = 1.0 MHz



Symbol	Characteristic and Condition	Min	Typ.	Max.	Unit
V_{RWM}	Reverse Stand-off Voltage	-	-	24	V
V_{BR}	Breakdown Voltage@I_R				
	I_T = 1 mA,Pin 1、 2to Pin 3	26.5	-	29.7	V
	I_T = 1 mA,Pin 3 to Pin 1、 2	26.5	-	29.7	V
I_R	Reverse Leakage Current@V_R				
	V_{RWM} = 24 V,Pin 1、 2to Pin 3	-	-	200	nA
	V_{RWM} = 24 V,Pin 3 to Pin 1、 2	-	-	200	nA
V_C	Clamping Voltage @ I_{PP}				
	I_{PP} = 1A (8 x 20μs pulse)	-	-	35	V
	I_{PP} = 3.7A (8 x 20μs pulse	-	-	41	V
C_J	Junction Capacitance				
	V_R = 0V, f = 1MHz	-	-	30	pF

1.Surge current waveform per Figure 1 according to IEC 61000-4-5.

6. ELECTRICAL CHARACTERISTICS CURVES

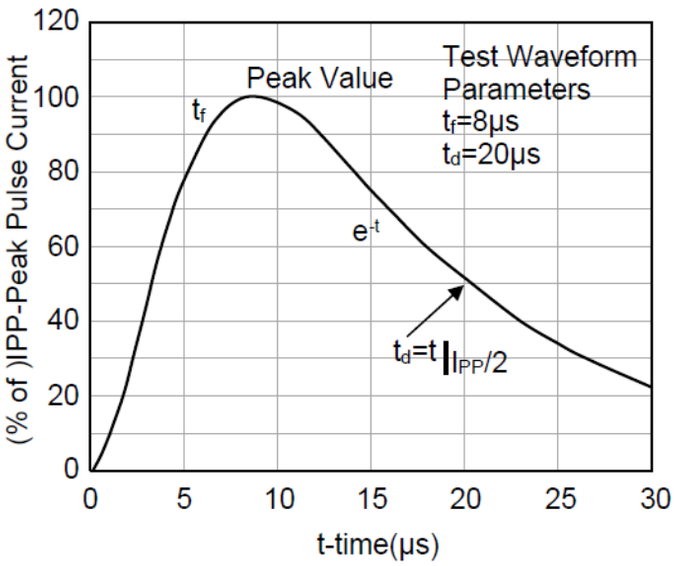


Figure 1. Pulse Waveform according to IEC 61000-4-5

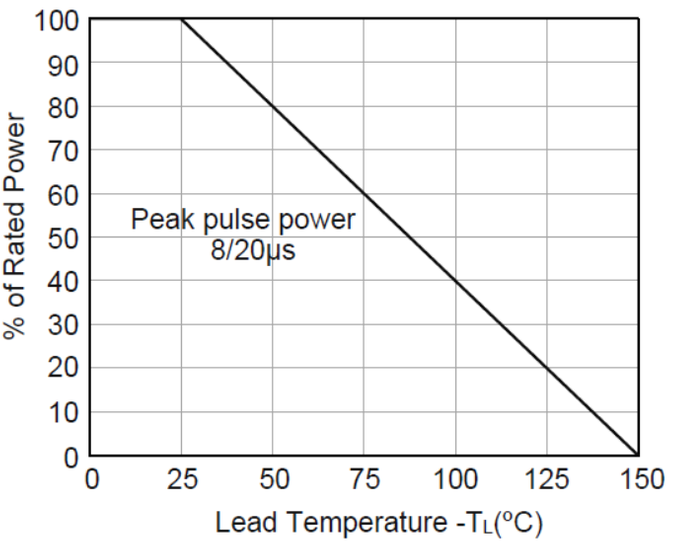


Figure 2. Power Derating Curve

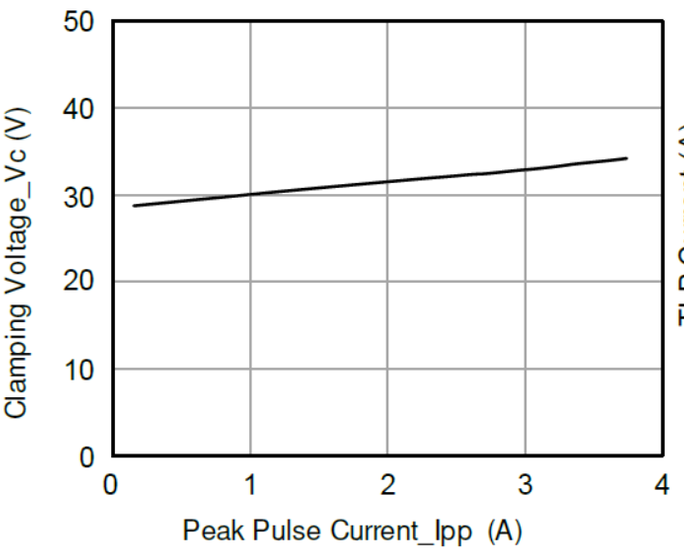


Figure 3.Clamping Voltage vs.Peak Pulse Current according to IEC 61000-4-5.

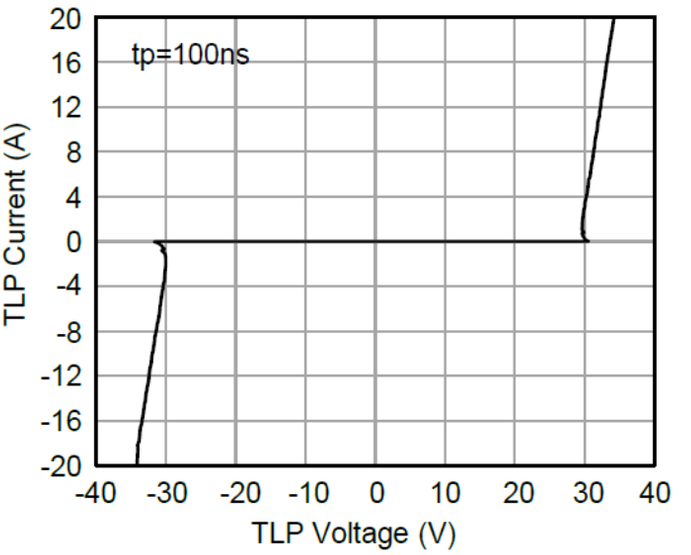
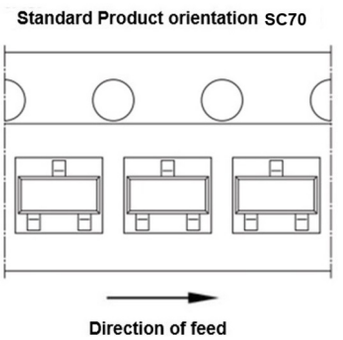


Figure 4. TLP Measurement

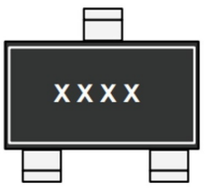
7. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	QTY	Packing
S-TRCAN24T1G	RU	3000	Tape&Reel

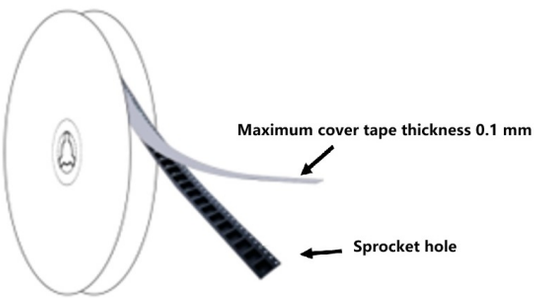
Product orientation in carrier tape



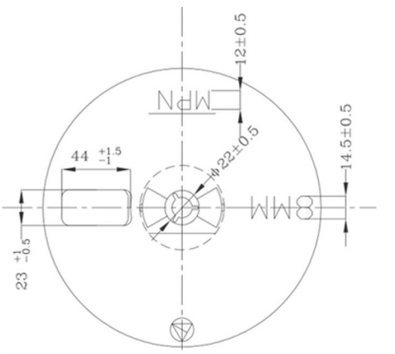
Marking



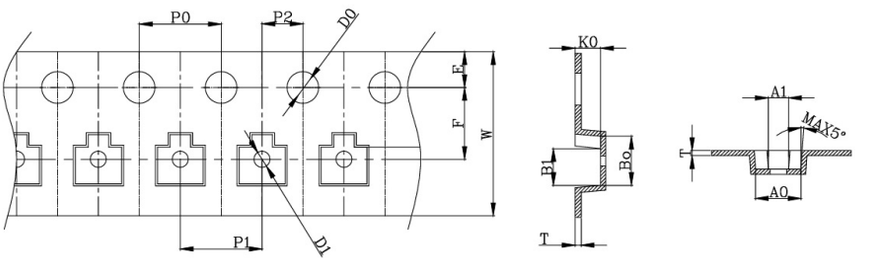
Tape and reel orientation



7" Reel dimension values



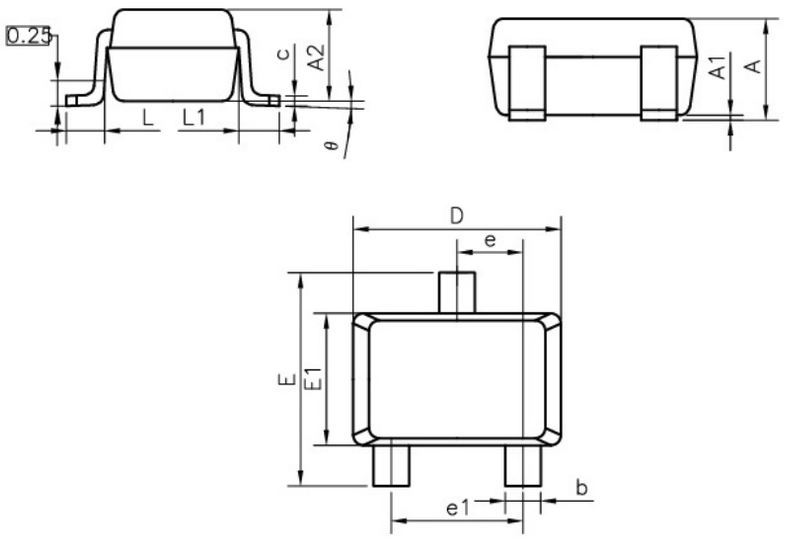
Tape Outline



SYMBOL	A0	A1	B0	B1	K0	P0	P1	P2
SPEC	2.24±0.10	0.75±0.10	2.40±0.10	1.80±0.05	1.1±0.10	4.00±0.10	4.00±0.10	2.00±0.05
SYMBOL	T	E	F	D0	D1	W		
SPEC	0.20±0.02	1.75±0.10	3.50±0.05	1.55±0.05	0.80±0.10	8.00±0.10		

8. OUTLINE AND DIMENSIONS

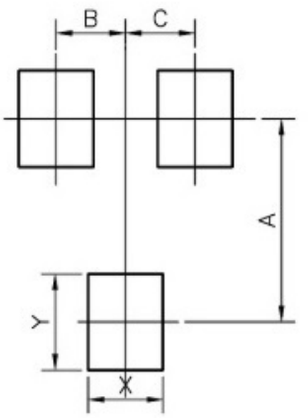
SC70



DIM	MIN	NOR	MAX
A	0.80	0.95	1.10
A1	0.00	0.05	0.10
A2	0.70	0.90	1.00
b	0.30	0.35	0.40
c	0.08	–	0.22
D	1.80	2.05	2.20
E	2.00	2.10	2.40
E1	1.15	1.30	1.35
e	0.65 BSC		
e1	1.30 BSC		
L	0.26	0.36	0.46
L1	0.42REF		
θ	0°	4°	8°

9. SOLDERING FOOTPRINT

SC70



DIM	(mm)
A	1.90
B	0.65
C	0.65
X	0.70
Y	0.90

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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