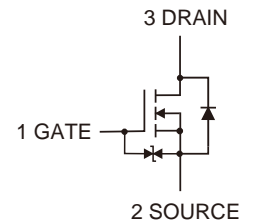
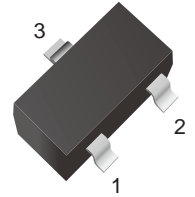


N-Channel Mosfet

Features

- Low On-resistance
- Low Gate Threshold Voltage
- Low Input capacitance
- ESD Protected up to 1kV (HBM)
- Green EMC
- Matte Tin(Sn) Lead Finish
- Lead free in comply with EU RoHS 2011/65/EU directives



Ordering Information

Part Number	Marking	Shipping	Reel
LT2N7002T-TR3	K72	3000PCS Tape&Reel	7 inchs
LT2N7002T-TR8	K72	8000PCS Tape&Reel	7 inchs

Maximum Ratings (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{DS}	Drain-Source Voltage	60	V
V _{GS}	Continuous Gate-Source Voltage	±20	V
I _D	Continuous Drain Current	115	mA
P _D	Power Dissipation	150	mW
R _{θJA}	Thermal Resistance from Junction to Ambient	833	°C /W
T _{STG}	Storage Temperature Range	-55 to +150	°C
T _J	Operating Junction Temperature	+150	°C

These ratings are limiting values above which the serviceability of the device may be impaired.

Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Off Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=10\mu A$	60			V
I_{GSS}	Gate-Body Leakage	$V_{DS}=0V, V_{GS}=\pm 20V$			± 1	μA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V$			100	nA

On Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
$V_{th(GS)}$	Gate-Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1		2.5	V
$I_{D(ON)}$	On-state Drain Current	$V_{GS}=10V, V_{DS}=7V$	500			mA
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=500mA$			7.5	Ω
		$V_{GS}=5V, I_D=50mA$			7.5	Ω
g_{fs}	Forward Trans Conductance	$V_{DS}=10V, I_D=200mA$	80		500	ms
$V_{DS(on)}$	Drain-Source On-Voltage	$V_{GS}=10V, I_D=500mA$			3.75	V
		$V_{GS}=5V, I_D=50mA$			0.375	V
V_{SD}	Diode Forward Voltage	$I_S=250mA, V_{GS}=0V$			1	V

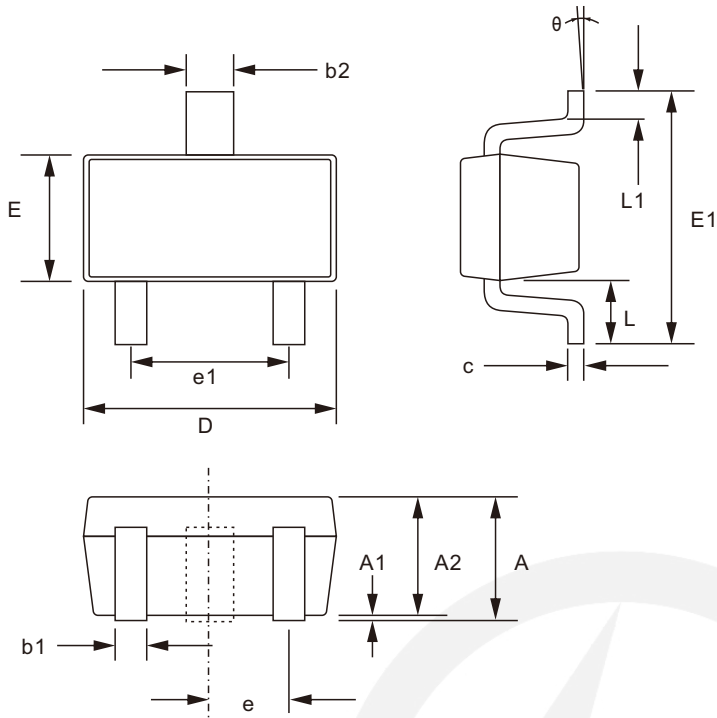
Dynamic Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
C_{iss}	Input Capacitance	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1.0MHz$			50	pF
C_{oss}	Output Capacitance				25	pF
C_{rss}	Reverse Transfer Capacitance				5.0	pF

Switching Characteristics

Symbol	Parameter	Test Condition	Limits			Unit
			Min	Typ	Max	
$t_{D(on)}$	Turn-on Time	$V_{DD}=10V, R_L=20\Omega,$ $I_D=500mA, V_{GEN}=10V,$ $R_G = 10\Omega$		5.6		nS
$t_{D(off)}$	Turn-off Time			25		nS

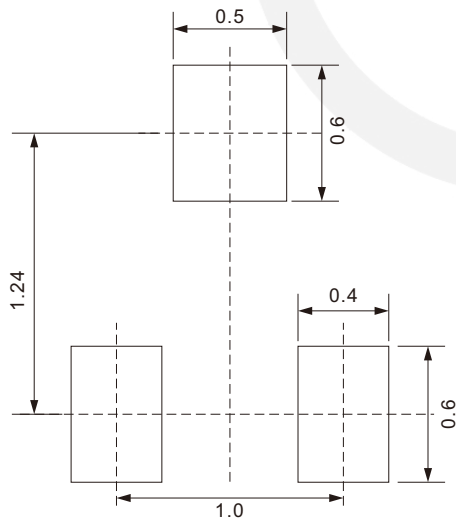
SOT-523 Package Outline



Unit: mm

SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.70	0.90
A1	0.00	0.10
A2	0.70	0.80
b1	0.15	0.25
b2	0.25	0.35
c	0.10	0.20
D	1.50	1.70
E	0.70	0.90
E1	1.45	1.75
e	0.50 TYP.	
e1	0.90	1.10
L	0.40 TYP.	
L1	0.10	0.30
θ	0°	8°

SOT-523 Suggested Pad Layout

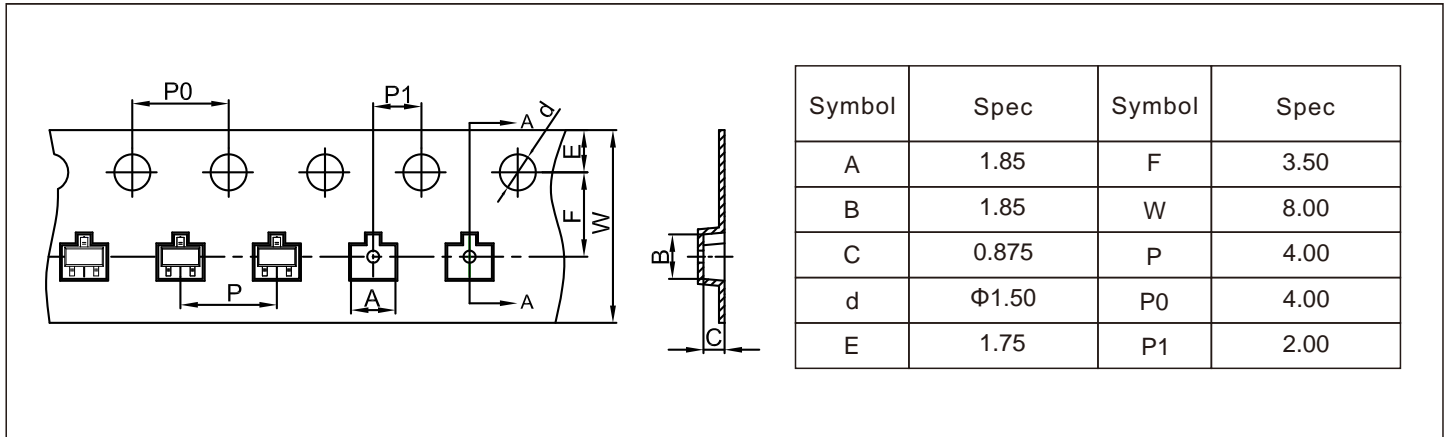


Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purpose only.

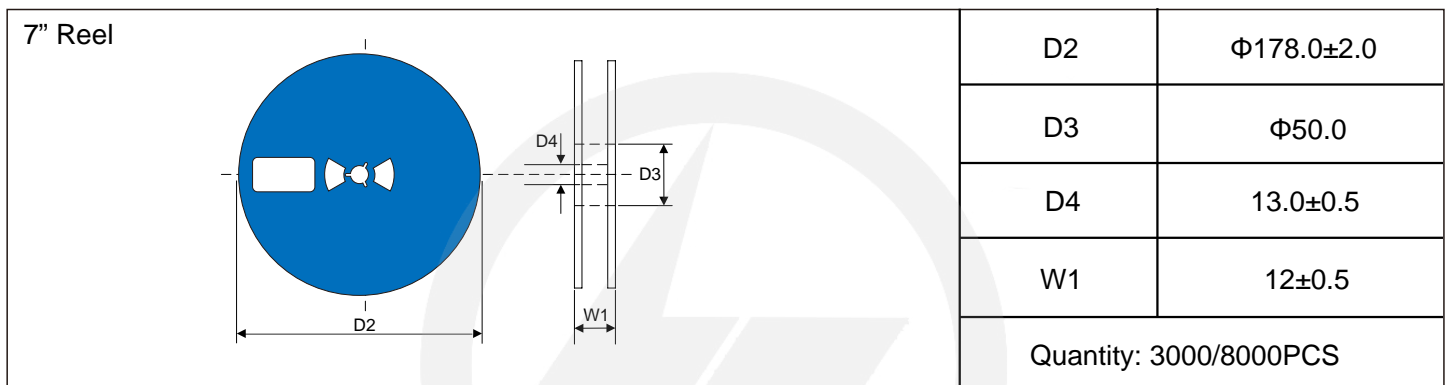
Carrier Tape Dimensions

Unit : mm

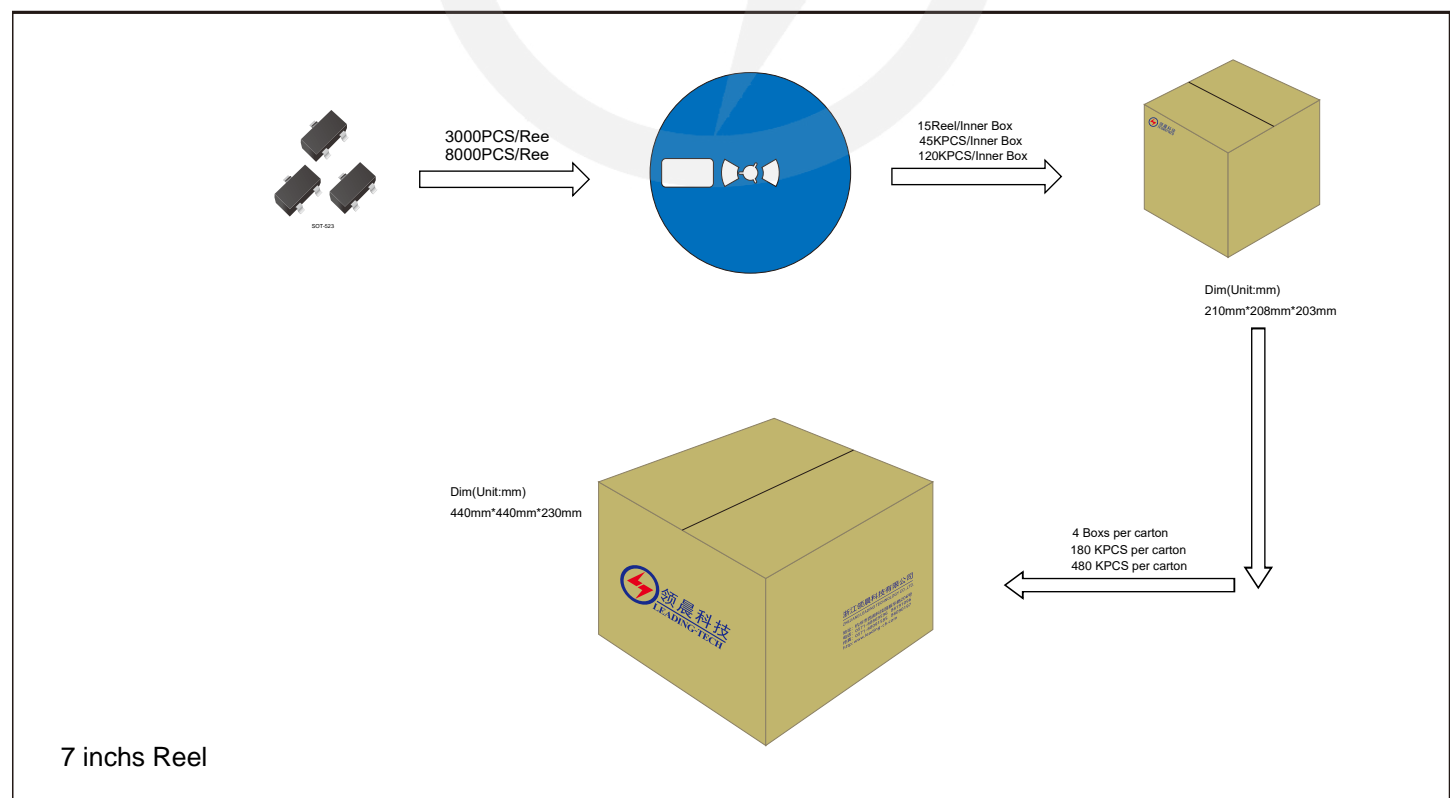


Reel Dimensions

Unit : mm



Packaging





Recommended Soldering Conditions



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T _L to T _P)	3°C/second max.
Preheat	
-Temperature Min (T _{S min})	150°C
-Temperature Max (T _{S max})	200°C
-Time (min to max) (t _s)	60-180 seconds
T _{S max} to T _L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T _L)	217°C
-Time (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	8 minutes max.

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Version Update Information

Series NO.	Enactment/Revision Date	Effective Date	Version	Revision content	Revision Reason	Revision Person	Note
01	2024.6.1	2024.6.1	3.0	New File	/	Ding	