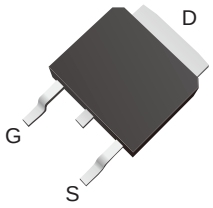
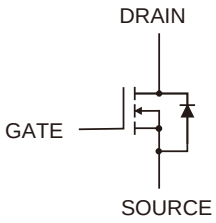
LTM14N100

N-Channel Mosfet



Features

- Advanced trench process technology
- Reliable and rugged
- High density cell design for ultra low On-Resistance
- Lead free in comply with EU RoHS 2011/65/EU directives



Ordering Information

Part Number	Marking	Shipping	Reel
LTM14N100-TR2K5	14N100	2500PCS Tape&Reel	13 inchs

Maximum Ratings (Ta = 25℃)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current (T_C=25℃)	14	A
	Continuous Drain Current (T_C=100℃)	8.5	
I_{DM}	Pulsed Drain Current Tj=25℃*1	60	A
E_{AS}	Single Pulsed Avalanche Energy*2	20	mJ
P_D	Power Dissipation*1	46	W
$R_{\theta JC}$	Thermal Resistance from Junction to Case*1	2.7	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range	-55 ~+150	℃

Electrical Characteristics (Ta = 25 ℃)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Off characteristics						
$V_{(BR)DSS}$	Drain-source breakdown voltage	V_{GS} = 0V, I_D =250μA	100			V
I_{DSS}	Zero gate voltage drain current	V_{DS} =100V, V_{GS} =0V			1	μA
I_{GSS}	Gate-body leakage current	V_{DS} =0V, V_{GS} =±20V			±100	nA
On characteristics *4						
$V_{GS(th)}$	Gate-threshold voltage	V_{DS} =V_{GS}, I_D =250μA	1.2	1.8	2.4	V
$R_{DS(on)}$	Static drain-source on-resistance*3	V_{GS} =10V, I_D =4A V_{GS} =4.5V, I_D =3A		113 135	150 190	mΩ
Dynamic characteristics						
C_{iss}	Input capacitance	V_{DS} =25V, V_{GS}=0V, f =1MHz		1084		pF
C_{oss}	Output capacitance			52		
C_{rss}	Reverse transfer capacitance			41		
Qg	Total Gate Charge	V_{DS}=50V, V_{GS}=0to10V, I_D =10A		22		nC
Qgs	Gate Source Charge			3		
Qgd	Gate Drain(“Miller”) Charge			6.1		
Switching characteristics						
td(on)	Turn-on delay time	V_{DD}=50V,V_{GS}=10V, R_G=3Ω, ID =10A		14		ns
tr	Turn-on rise time			5.5		
td(off)	Turn-off delay time			28		
tf	Turn-off fall time			5.2		
Drain-Source Diode Characteristics and Max Ratings						
Is	Maximum Continuous Drain to Source Diode Forward Current				15	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current				60	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS}=0V,I_S=15A			1.2	V
trr	Body Diode Reverse Recovery Time	I_F=10A, di/dt=100A/us		30		ns
Qrr	Body Diode Reverse Recovery Charge			42		nC

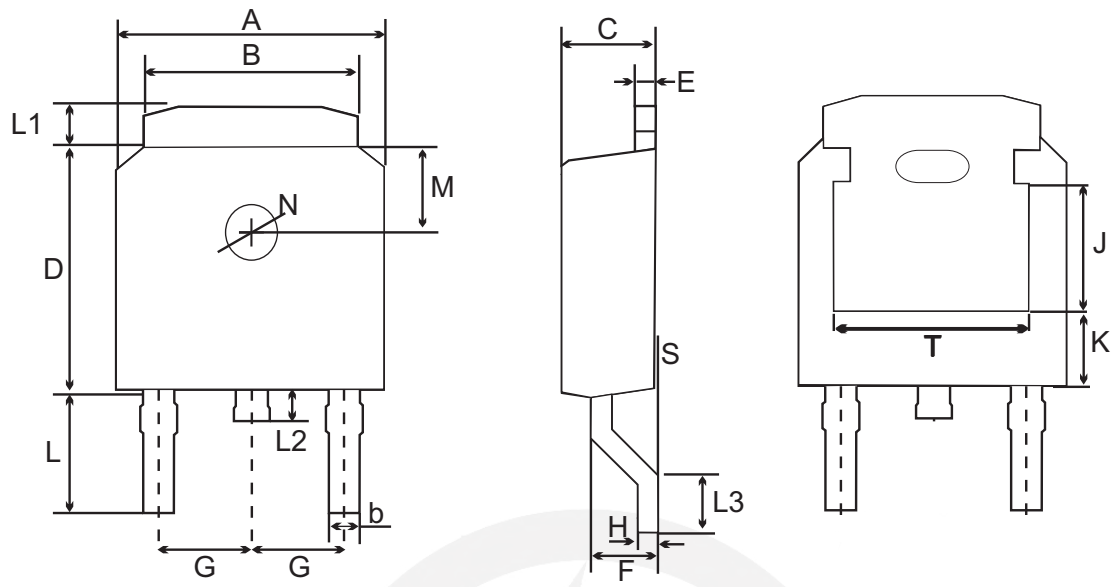
Notes :

*1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.

*2. EAS condition: V_{DD}=50V,V_{GS}=10V, L=0.5mH, Rg=25Ω,L=0.5mH,I_{AS}=9A Starting T_J = 25℃.

*3. Pulse Test : Pulse Width≤300μs, duty cycle ≤0.5%.

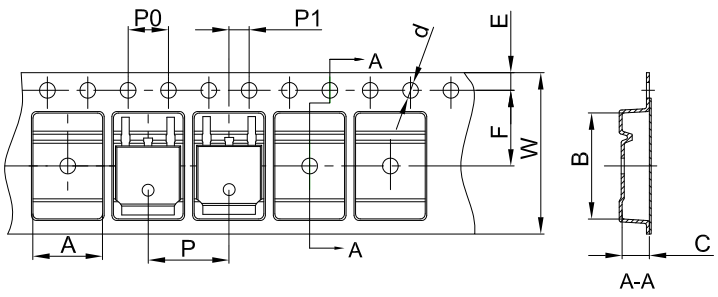
TO-252 Package Outline



UNIT		A	B	b	C	D	E	F	G	H	L	L1	L2	L3	S	M	N	J	K	T
mm	max	6.7	5.5	0.8	2.5	6.3	0.6	1.8	2.29 TYPICAL	0.55	3.1	1.2	1.0	1.75	0.23	1.8 TYPICAL	1.3 TYPICAL	3.16 ref.	1.80 ref.	4.83 ref.
	typ	6.6	5.3	0.7	2.3	6.1	0.5	1.5		0.50	2.8	1.0	0.8	1.30	0.15					
	min	6.3	5.1	0.3	2.1	5.9	0.4	1.3		0.45	2.7	0.8	0.6	1.00	0.0					

Carrier Tape Dimensions

Unit：mm

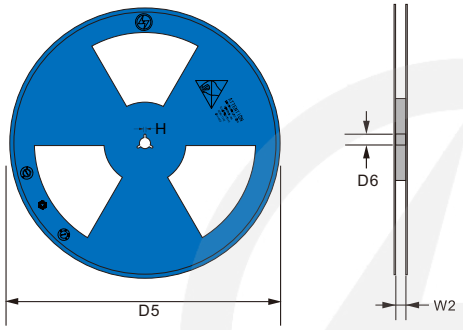


Symbol	Spec	Symbol	Spec
A	6.90	F	7.50
B	10.50	P0	4.00
C	2.70	P	8.00
d	Φ1.55	P1	2.00
E	1.75	W	16.00

Reel Dimensions

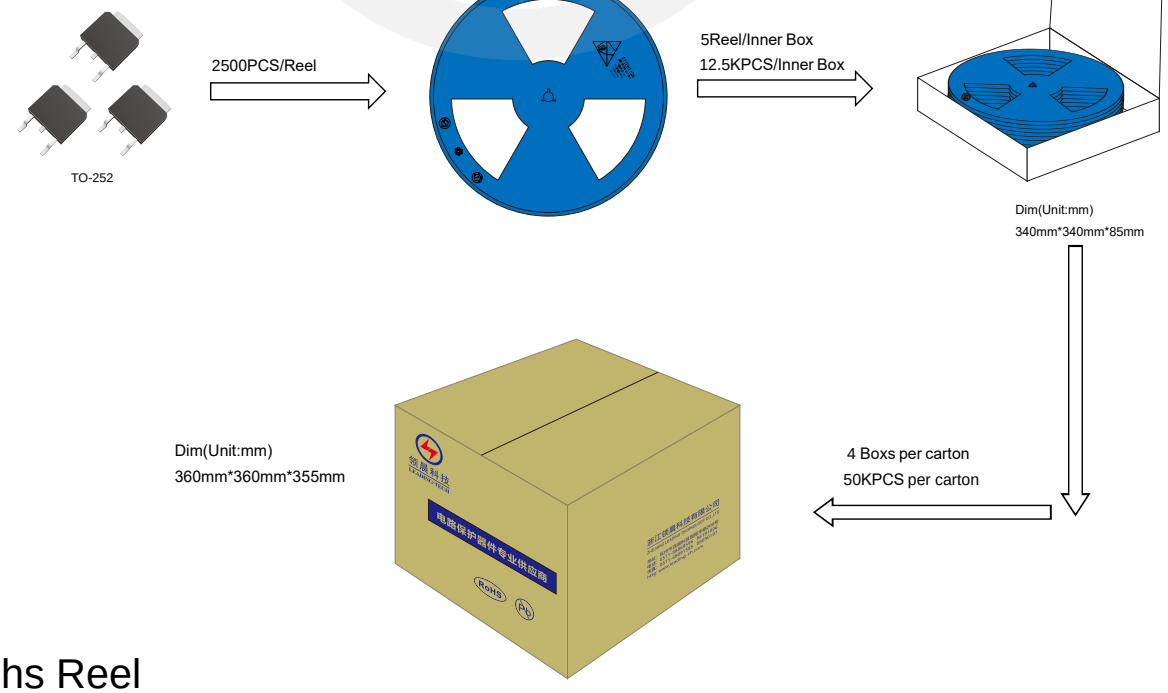
Unit：mm

13” Reel



D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 2500PCS	

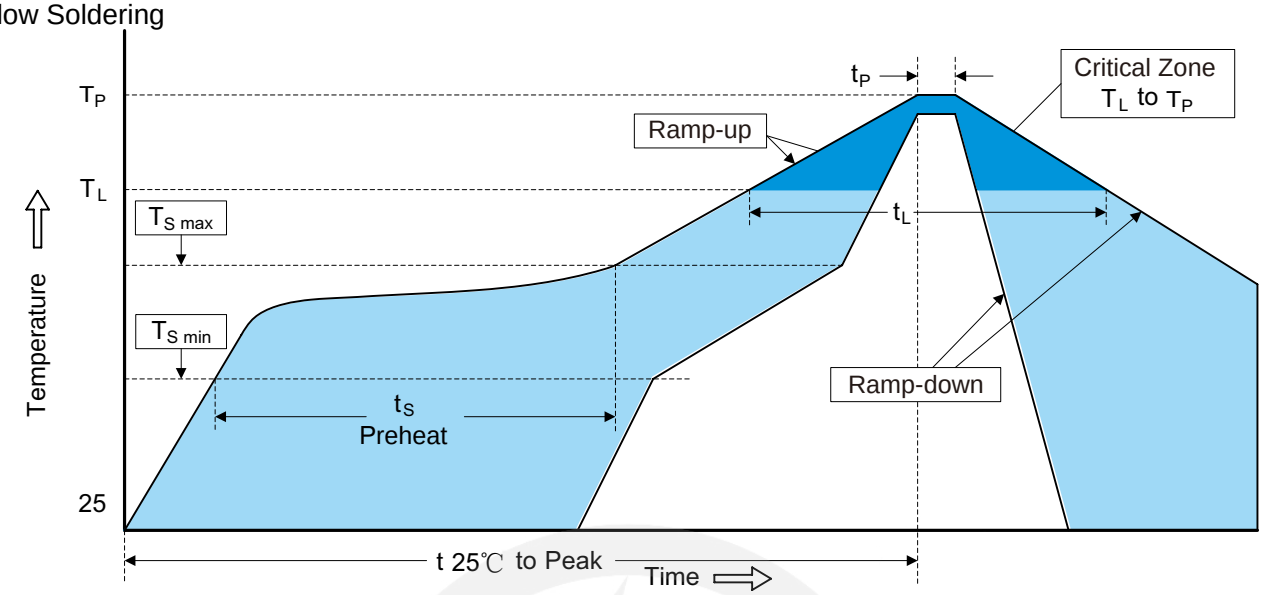
Packaging



13 inchs Reel

Recommended Soldering Conditions

Reflow Soldering



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_S)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ 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	2024.4.18	2024.4.18	3.0	New File	/	Ding	
02	2025.06.12	2025.06.12	3.1	Update packaging information	/	Ding	