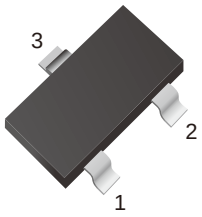
LT2N7002KW

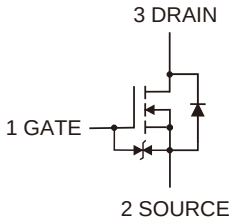
N-Channel Mosfet

Features



- Epoxy meets UL 94 V-0 flammability rating
- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- ESD protected
- Lead free in comply with EU RoHS 2011/65/EU directives

Ordering Information



Part Number	Marking	Shipping	Reel
LT2N7002KW-TR3	72K	3000PCS Tape&Reel	7 inchs
LT2N7002KW-TR12	72K	12000PCS Tape&Reel	13 inchs

Maximum Ratings (Ta = 25℃)

Symbol	Parameter	Value	Units
V_{DS}	Drain-source Voltage	60	V
V_{GS}	Gate-source Voltage	±20	V
I_D	Continuous Drain Current	340	mA
P_d	Total Power Dissipation	200	mW
T_J	Junction Temperature	150	℃
T_{STG}	Storage Temperature	-55 to 150	℃
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	625	℃/W

Electrical Characteristics (Ta = 25℃)

Static Characteristics

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$V_{(BR)Dss}$	Drain- source Breakdown Voltage	V_{GS}=0V, I_D=250uA	60			V
$V_{GS(th)}$	Gate-Threshold Voltage (note 1)	V_{DS}=V_{GS}, I_D=1mA	1.0		2.5	V
I_{GSS}	Gate –body Leakage Current	V_{DS}=0V, V_{GS} = ±20V			±10	uA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=48V, V_{GS}=0V			1	uA
R_{DSON}	Drain- source On-resistance (note 1)	V_{GS}=4.5V, I_D=200mA V_{GS}=10V, I_D=500mA			5.3 5.0	Ω
V_{SD}	Diode Forward Voltage	V_{GS}=0V, Is=300mA			1.5	V

Dynamic Characteristics

Ciss	Input Capacitance	V_{DS}=10V V_{GS}=0V f=1MHz			40	pF
Coss	Output Capacitance				30	
Crss	Reverse Transfer Capacitance				10	

Switching Characteristics

td(on)	Turn-on delaytime	V_{DD}=50V, V_{GS}=10V, R_L=250Ω, R_{GS}=50Ω, R_{GEN}=50Ω			10	ns
td(off)	Turn-off delaytime				15	
trr	Reverse Recovery Time	V_{GS}=0V,I_S=300mA,V_R=25V, dls/dt=-100A/us		30		ns
Qr	Recovered Charge	V_{GS}=0V,I_S=300mA,V_R=25V dls/dt=-100A/us		30		nC

Gate-Source Zener Diode

BV_{GSO}	Gate-Source BreakdownVoltage	I_{GS}=±1mA(Open Drain)	±21.5		±30	V

Drain-Source Diode

V_{SD}	Diode Forward Voltage(note 1)	I_S=300mA, V_{GS}=0V			1.5	V
I_S	Continuous Diode Forward Current				0.2	A
I_{SM}	Pulsed Diode Forward Current				0.53	A

Note:

1. Pulse Test : Pulse width≤300μs, duty cycle≤2%

Characteristics Curves

Fig.1 Output Characteristics

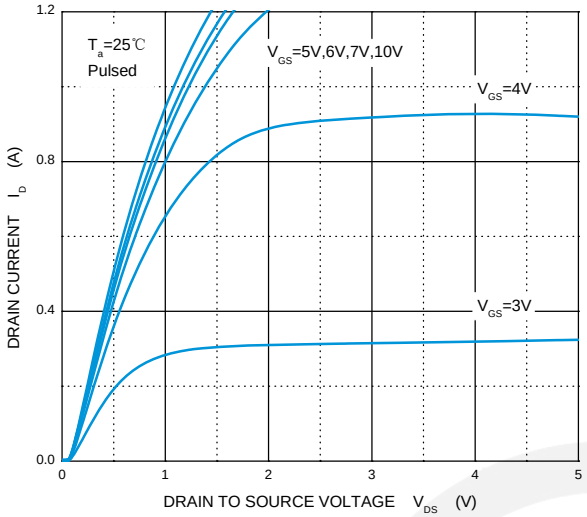


Fig.2 Transfer Characteristics

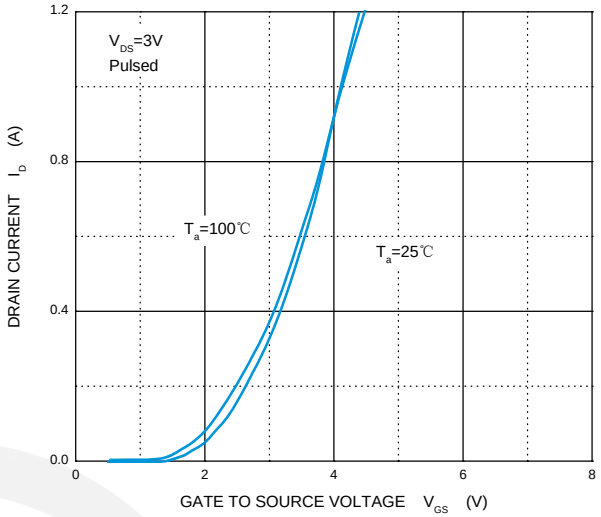


Fig.3 $R_{DS(ON)}$ vs I_D

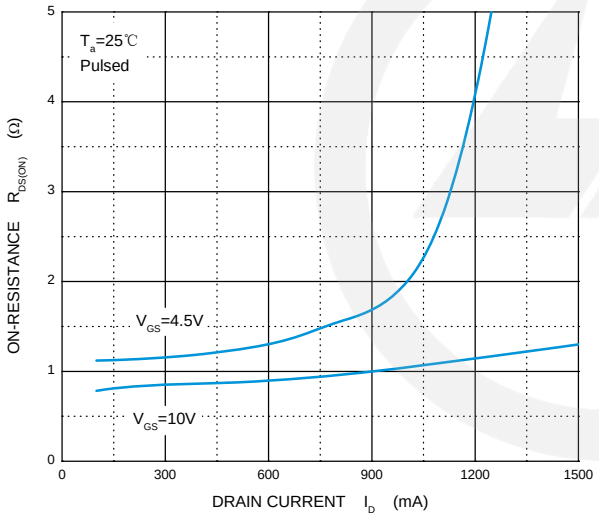


Fig.4 $R_{DS(ON)}$ vs V_{GS}

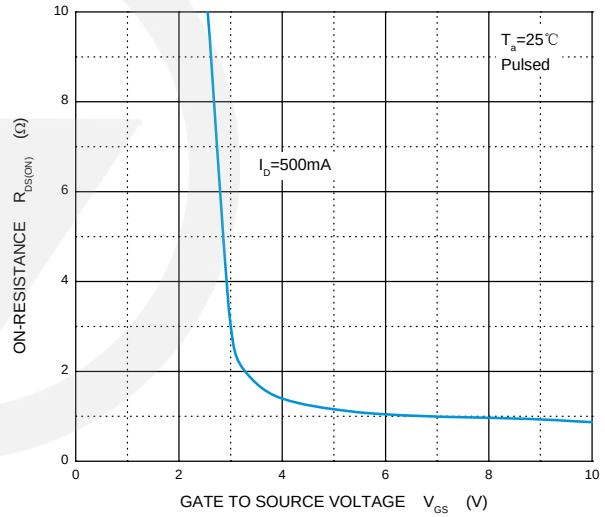


Fig.5 I_S vs V_{SD}

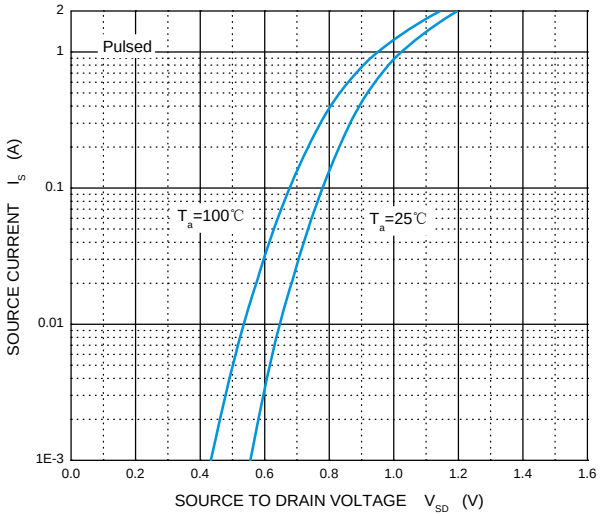
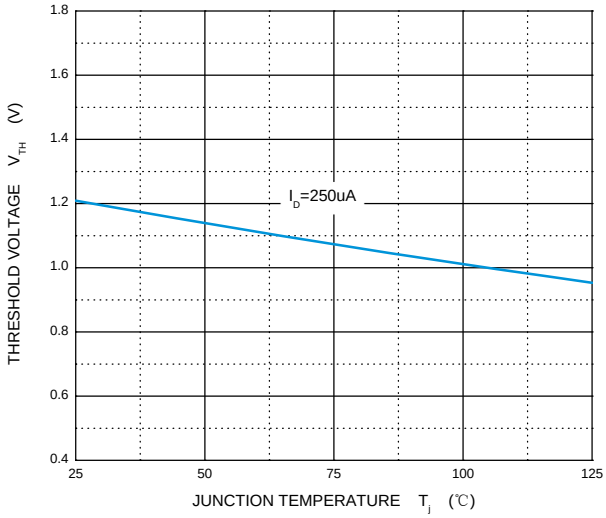
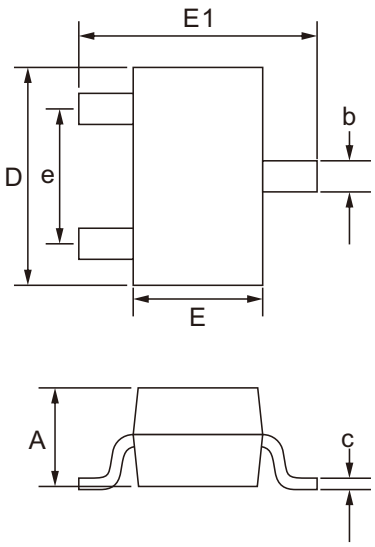


Fig.6 Threshold Voltage



SOT-323 Package Outline

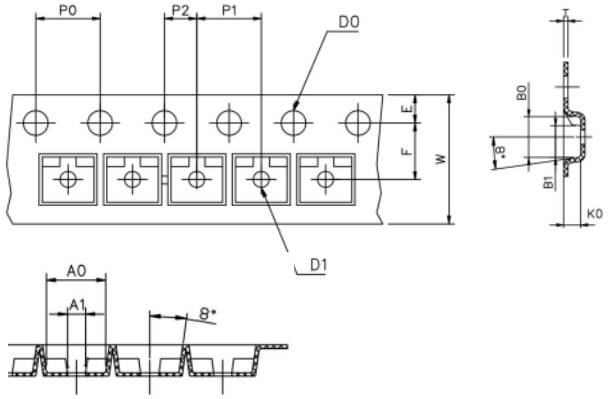


Unit: mm

SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.800	1.000
b	0.200	0.400
D	1.800	2.200
E	1.150	1.350
E1	2.150	2.450
C	0.080	0.250
e	1.200	1.400

Carrier Tape Dimensions

Unit：mm

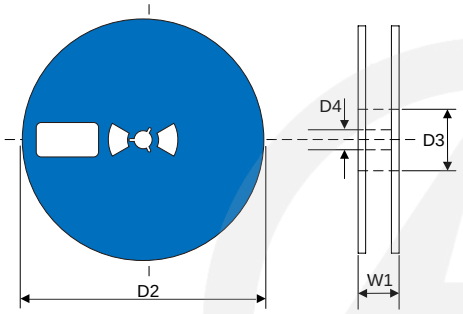


Symbol	Spec	Symbol	Spec
A0	3.15±0.10	P0	4.00±0.05
A1	1.09±0.10	P1	4.00±0.02
B0	2.77±0.10	W	8.00±0.10
B1	2.15±0.10	E	1.75±0.10
K0	1.22±0.10	F	3.50±0.05
D0	1.50±0.10	T	2.00±0.10
D1	1.00±0.10		

Reel Dimensions

Unit：mm

7” Reel

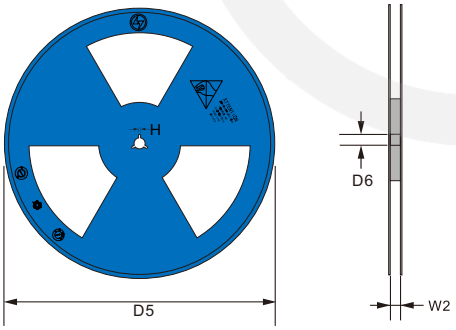


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Dimensions

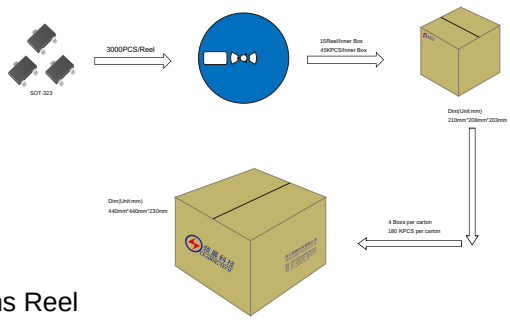
Unit：mm

13” Reel

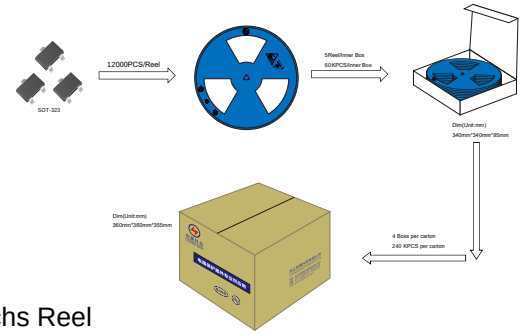


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±0.5
Quantity: 12000PCS	

Packaging



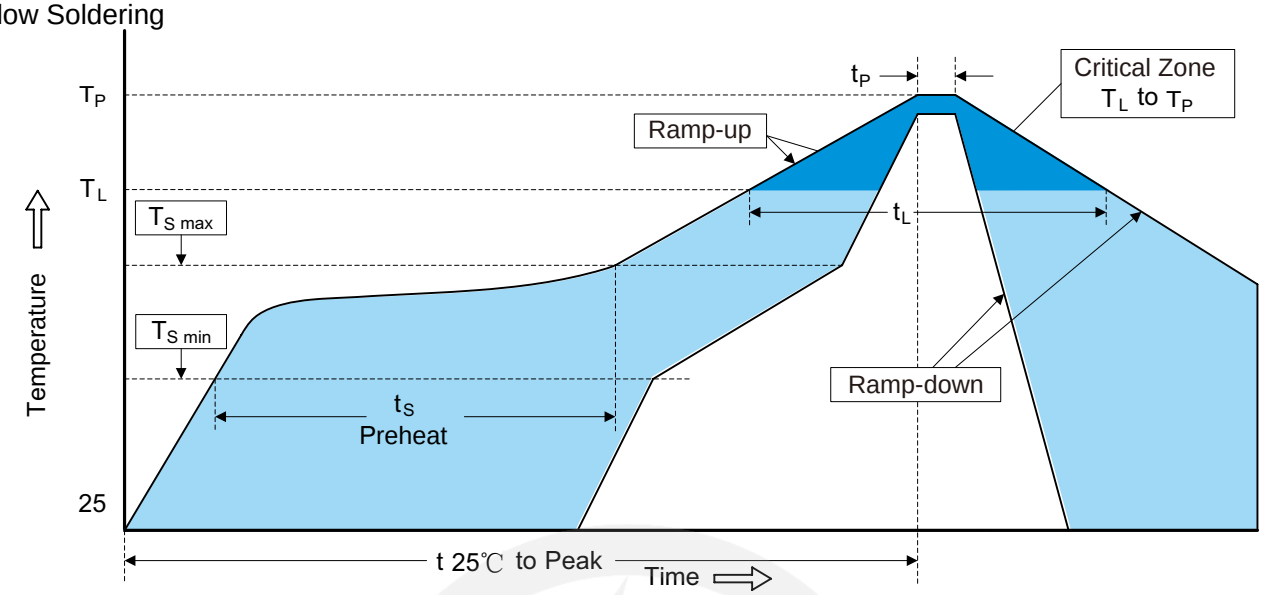
7 inchs Reel



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	2024.10.29	2024.10.29	3.0	New File	/	Ding	
02	2025.06.11	2025.06.11	3.1	Update packaging information	/	Ding	