

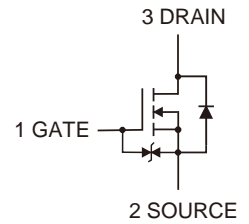
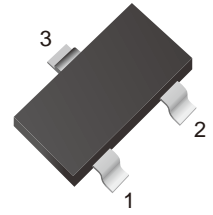
N-Channel Mosfet

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

Machanical Data

- Case:SOT-23
- Approx. Weight: 8.1mg



Ordering Information

Part Number	Marking	Shipping	Reel
LT2N7002KCR-TR3	72K	3000PCS Tape&Reel	7 inches
LT2N7002KCR-TR12	72K	12000PCS Tape&Reel	13 inches

Maximum Ratings ($T_a=25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-source Voltage	60	V
V_{GS}	Gate-source-Voltage	± 20	V
I_D	Drain Current	340	mA
P_d	Total Power Dissipation	300	mW
T_J	Junction Temperature	-55 to 150	$^{\circ}\text{C}$
T_J	Storage Temperature	-55 to 150	$^{\circ}\text{C}$
R	Thermal Resistance from Junction to Ambient	357	$^{\circ}\text{C}/\text{W}$



Electrical Characteristics (T_a=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V _{(BR)DSS}	Drain-source Voltage Breakdown Voltage	V _{GS} =0V, I _D =10μA	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	V _{DS} =0V, V _{GS} =±10V V _{DS} =0V, V _{GS} =±5V V _{DS} =0V, V _{GS} =±20V			±200 ±100 10	nA nA μA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =48V, V _{GS} =0V			1	μA
R _{DS(on)}	Drain-source On-resistance (note 1)	V _{GS} =4.5V, I _D =200mA V _{GS} =10V, I _D =500mA			4 3	Ω
V _{SD}	Diode Forward Voltage (note 1)	V _{GS} =0V, I _S =300mA			1.5	V
Q _r	Recovered charge	V _{GS} =0V, I _S =300mA, V _R =25V dI _S /dt=-100A/μs		30		nC

Dynamic Characteristics

C _{iss}	Input Capacitance	V _{DS} =10V			40	pF
C _{oss}	Output Capacitance	V _{GS} =0V			30	
C _{rss}	Reverse Transfer Capacitance	f=1MHz			10	

Switching Characteristics

t _{d(on)}	Turn on time	V _{DD} =50V, R _L =250Ω			10	ns
t _{d(off)}	Turn off time	R _{GS} =50Ω, V _{GS} =10V, R _G =50Ω			15	
t _{rr}	Reverse recovery time	V _{GS} =0V, I _S =300mA V _R =25V, dI _S /dt=-100A/us		30		

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



Characteristics Curves

Fig.1 Output Characteristics

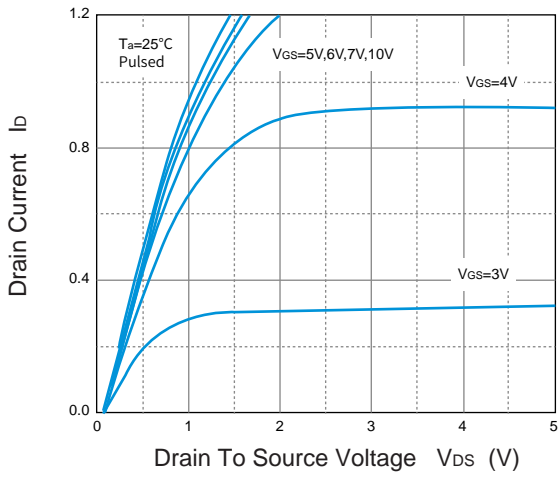


Fig.2 Transfer Characteristics

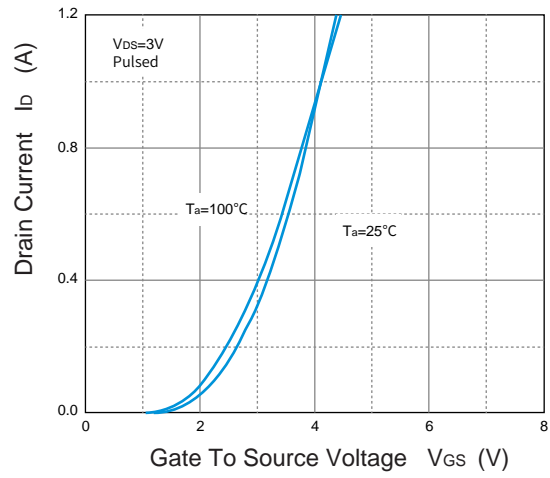


Fig.3 $R_{DS(ON)}$ vs I_D

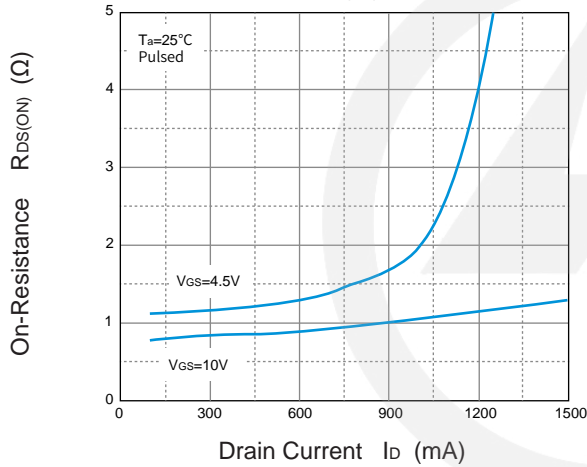


Fig.4 $R_{DS(ON)}$ vs V_{GS}

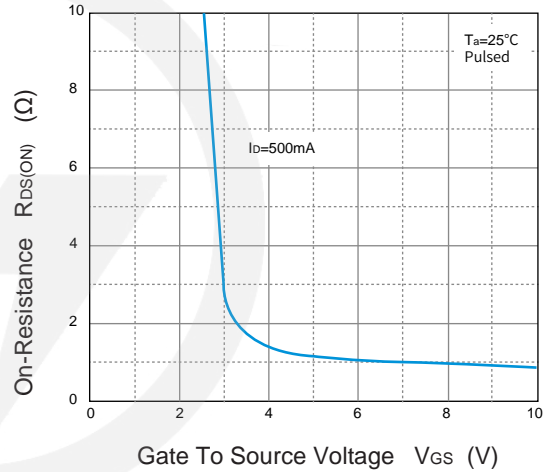


Fig.5 I_S vs V_{SD}

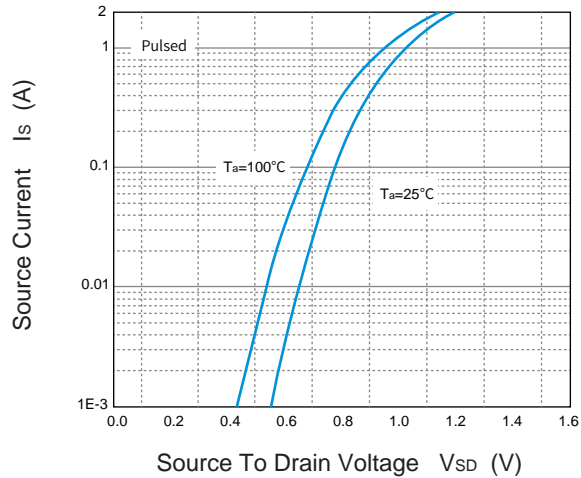
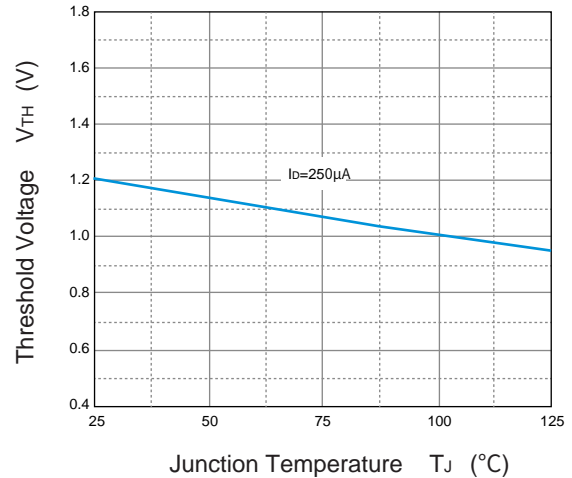
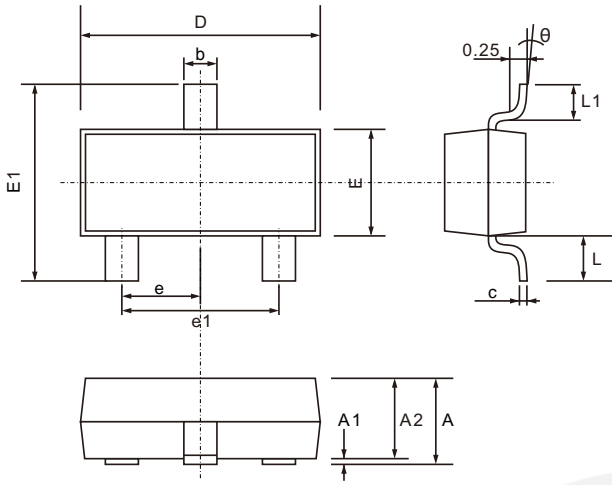


Fig.6 Threshold Voltage



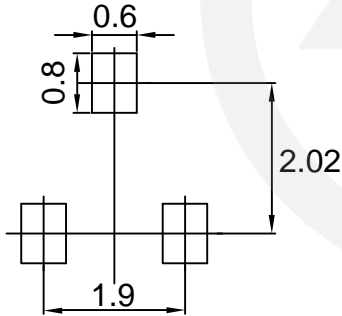
SOT-23 Package Outline

Unit: mm



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.200
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.200
D	2.700	3.100
E	1.200	1.400
E1	2.200	2.600
e	0.950 TYP.	
e1	1.750	2.050
L	0.550 TYP.	
L1	0.300	0.500
θ	0°	8°

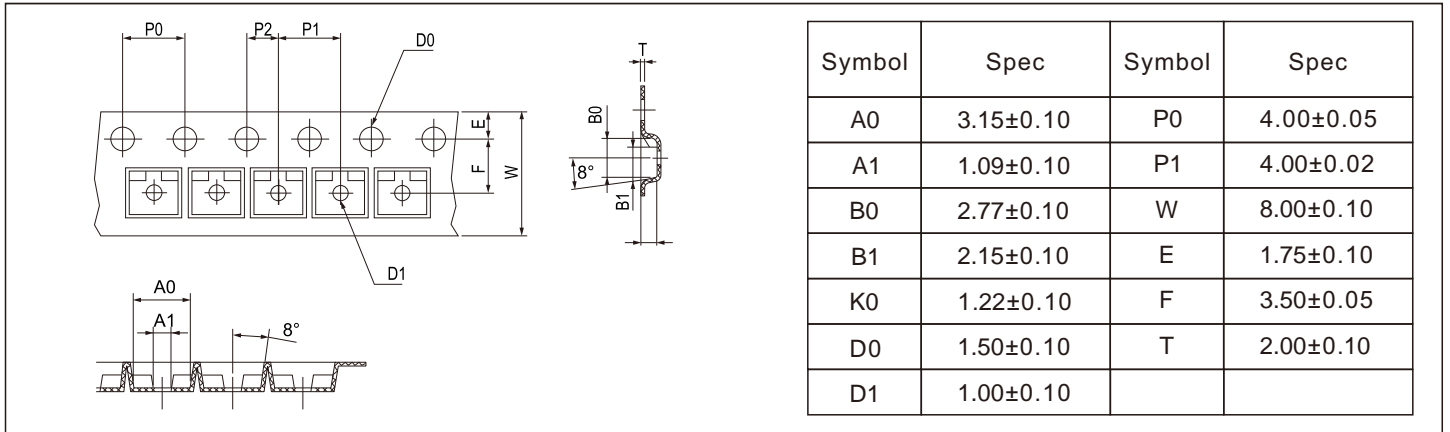
SOT-23 Suggested Pad Layout



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

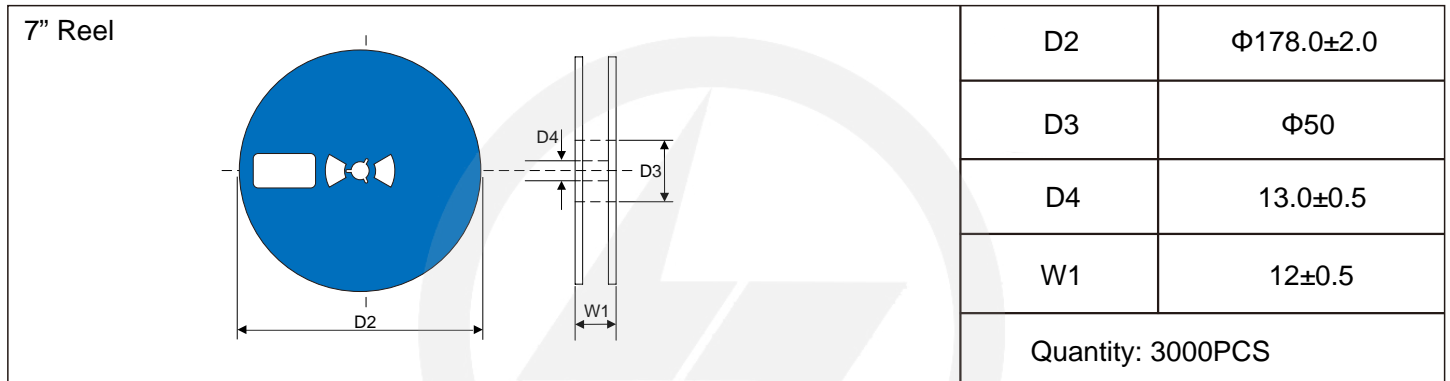
Carrier Tape Dimensions

Unit : mm



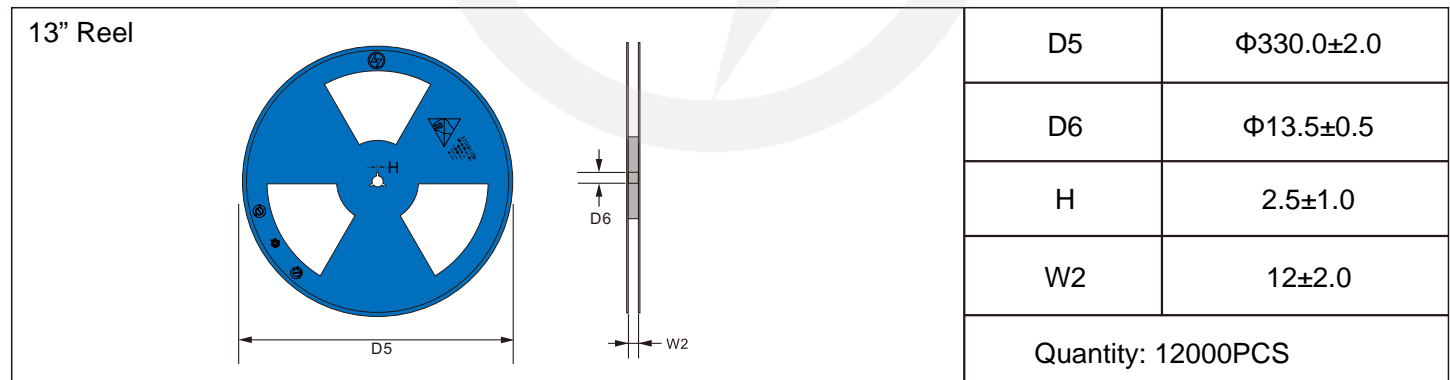
Reel Dimensions

Unit : mm

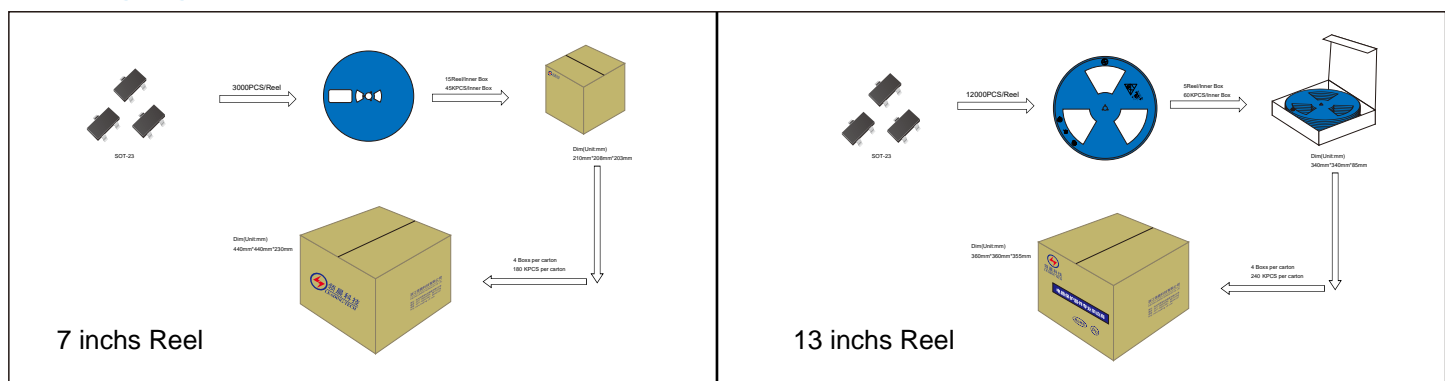


Reel Dimensions

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	2024.03.20	2024.03.20	3.0	New file	/	Ding	
02	2025.06.12	2025.06.12	3.1	Update packaging information	/	Ding	
03	2026.03.05	2026.03.05	3.2	Package outline E1(max)=2.6mm	/	Ding	