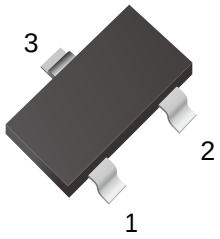
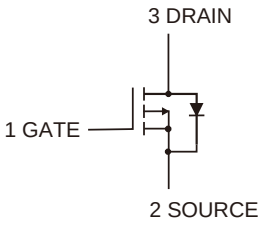
P-Channel Mosfet





Features

- V_{DS} =-30V, ID =-4.2A
- $R_{DS(ON)}$ < 70mΩ (V_{GS} = -10V)
- $R_{DS(ON)}$ < 80mΩ (V_{GS} = -4.5V)
- $R_{DS(ON)}$ < 120mΩ (V_{GS} = -2.5V)
- High Power and Current Handing Capability
- Lead Free Product is Acquired
- Surface Mount Package
- Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

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

Ordering Information

Part Number	Marking	Shipping	Reel
LTM3401PR-TR3	R1	3000PCS Tape&Reel	7 inchs
LTM3401PR-TR12	R1	12000PCS Tape&Reel	13 inchs

Maximum Ratings（Ta = 25 ℃）

Symbol	Parameter	Value	Units
V_{DSS}	Drain-source Voltage	-30	V
V_{GSS}	Gate-source-Voltage	±12	V
I_D	Continuous Drain Current	-4.2	A
I_{DM}	Pulsed Drain Current (note 1)	-16.8	A
P_D	Power Dissipation	350	mW
T_J, T_{STG}	Operating And Storage Temperature Range	-55 to 150	℃
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	357	℃/W

Electrical Characteristics（Ta = 25 ℃）

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$V_{(BR)Dss}$	Drain-source Breakdown Voltage	V_{GS}=0V,I_D=-250uA	-30			V
I_{Dss}	Zero Gate Voltage Drain Current	V_{DS}=-24V,V_{GS}=0V			-1	uA
I_{GSS}	Gate –body Leakage Current	V_{DS}=0V,V_{GS}=±10V			±100	nA
$V_{GS(th)}$	Gate-Threshold Voltage (note 2)	V_{DS}=VGS,I_D=-250uA	-0.7	-1	-1.3	V
$R_{Ds(on)}$	Drain-source On-Resistance (note 2)	V_{GS}=-10V,I_D=-4.2A V_{GS}=-4.5V,I_D=-4A V_{GS}=-2.5V,I_D=-1A		48 56 72	70 80 120	mΩ
g_{FS}	Forward Transconductance	V_{DS}=-5V,I_D=-4.2A		10		S

Dynamic Characteristics

C_{iss}	Input Capacitance	V_{DS}=-15V V_{GS}=0V f=1MHz		880		pF
C_{oss}	Output Capacitance			105		
C_{rss}	Reverse Transfer Capacitance			65		
Q_g	Total Gate Charge	V_{DS}=-15V I_D=-4.2A V_{GS}=-4.5V		8.5		nC
Q_{gS}	Gate-Source Charge			1.8		
Q_{gd}	Gate-Drain(“Miller”) Charge			2.7		

Switching Characteristics

$t_{d(on)}$	Turn-on Delay Time	V_{DD}=-15V,I_D=-4.2A, V_{GS}=-10V, R_{GEN}=6Ω		7		ns
t_r	Turn-on Rise Time			3		
$t_{d(off)}$	Turn-off Delay Time			30		
t_f	Turn-off Fall Time			12		

Drain-Source Diode Characteristics and Maximum Ratings

I_S	Maximum Continuous Drain to Source Diode Forward Current				-4.2	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current				-17	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS}=0V,I_S=-4.2A,			-1.2	V
t_{rr}	Reverse Recovery Time	V_{GS}=0V,I_S=-4.2A, di/dt=100A/us		11		ns
Q_{rr}	Reverse Recovery Charge			3.5		nC

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. Pulse Test : Pulse Width≤300μs, Duty Cycle≤2%.

Characteristics Curve

Fig.1 Output Characteristics

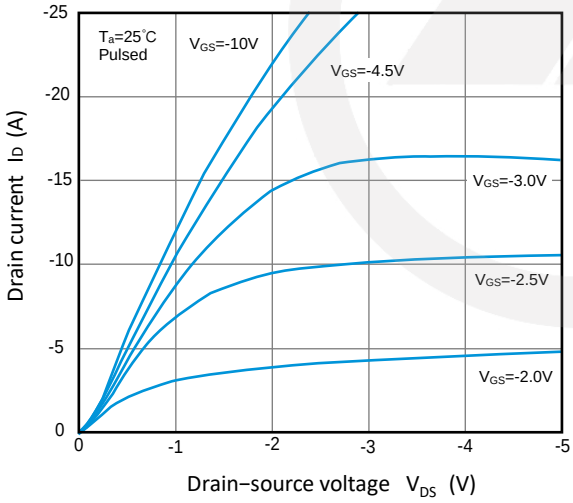


Fig.2 Transfer Characteristics

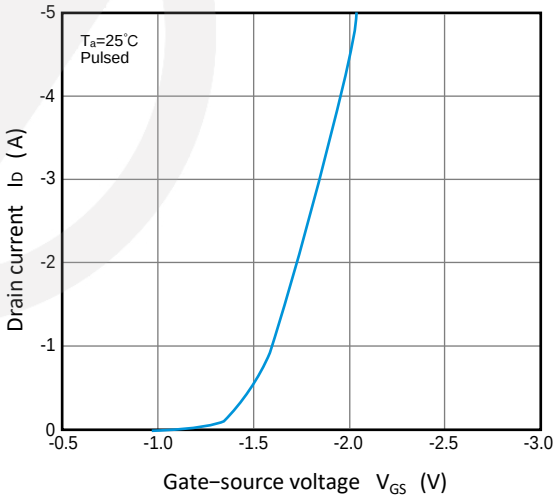


Fig.3 $R_{DS(ON)}$ vs I_D

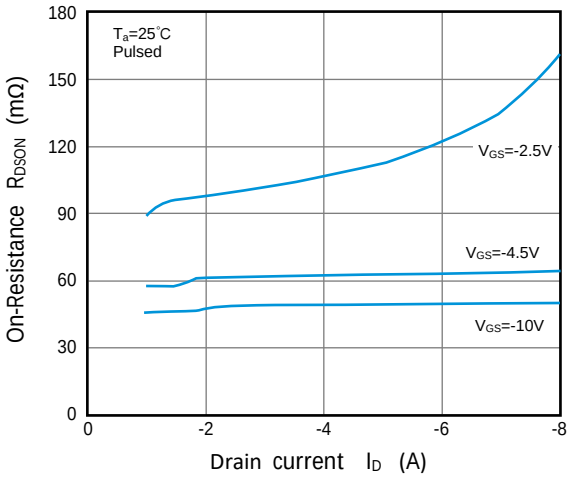


Fig.4 $R_{DS(ON)}$ vs V_{GS}

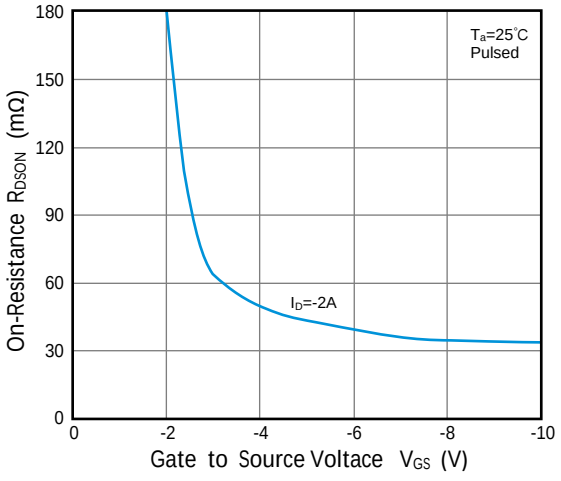


Fig.5 I_S vs V_{SD}

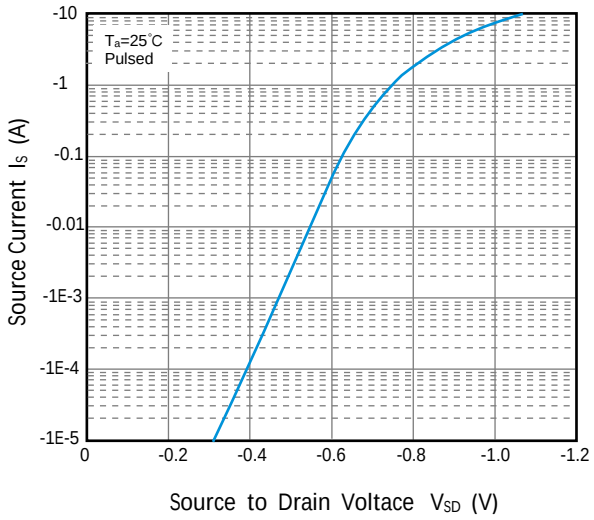
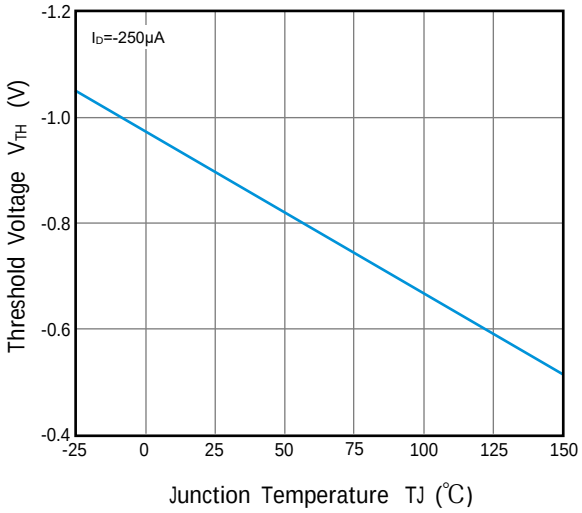
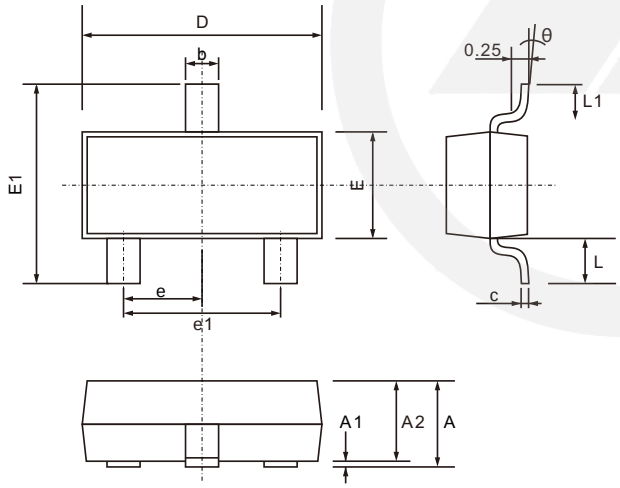


Fig.6 Gate-Source Thr eshold Voltage



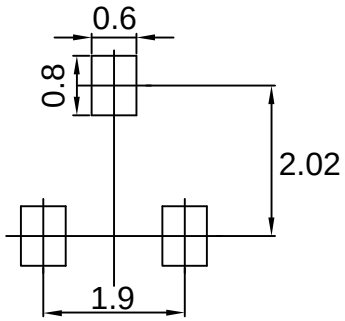
SOT-23 Package Outline



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°

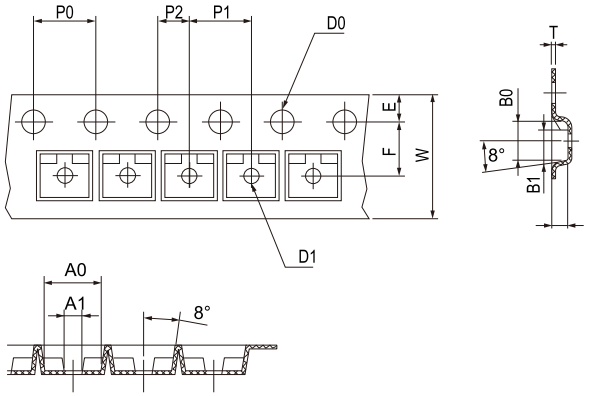
SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm
3.The pad layout is for reference purpose only.

Carrier Tape Dimensions

Unit：mm

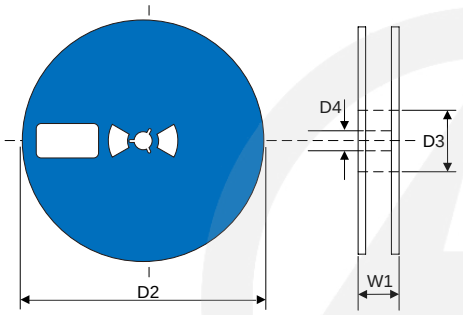


Symbol	Spec	Symbol	Spec
A0	3.15±0.10	P0	4.00±0.05
A1	1.09±0.10	P1	4.00±0.02
B0	2.77±0.10	W	8.00±0.10
B1	2.15±0.10	E	1.75±0.10
K0	1.22±0.10	F	3.50±0.05
D0	1.50±0.10	T	2.00±0.10
D1	1.00±0.10		

Reel Dimensions

Unit：mm

7” Reel

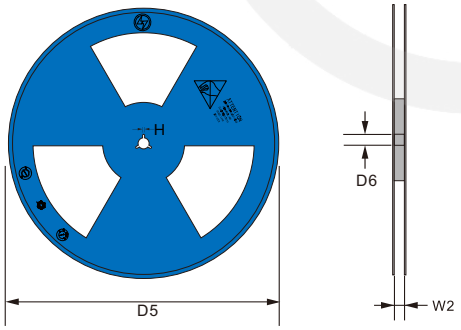


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Dimensions

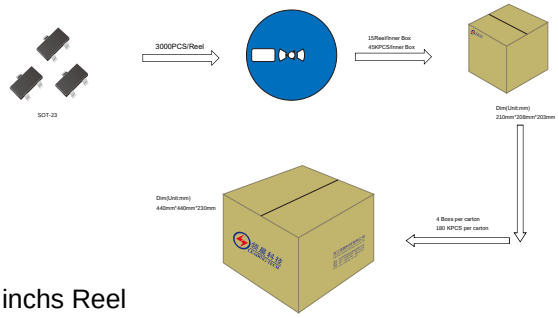
Unit：mm

13” Reel

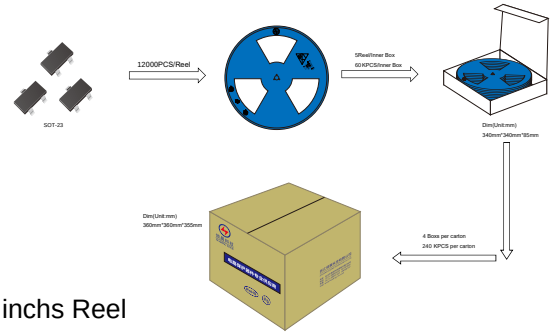


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±0.5
Quantity: 12000PCS	

Packaging



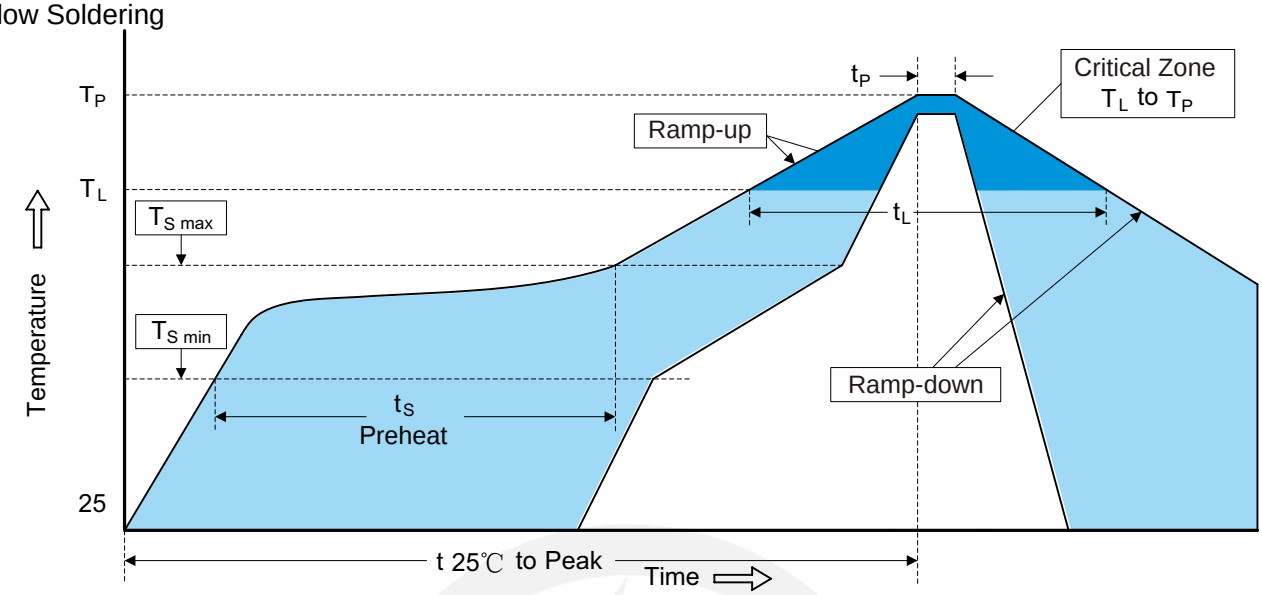
7 inchs Reel



13 inchs Reel

Recommended Soldering Conditons

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.

Important Notice and Disclaimer

Leading-Tech reverses the right to make changes to this document and its products and specifications at any time without notice.

Customers should obtain and confirm the latest product information and specifications before final design,purchase or use.

Leading-Tech makes no warranty,representation or guarantee regarding the suitability of its products for any particular purpose,not does Leading-Tech assume any liability for application assistance or customer product design.

Leading-Tech does not warrant or accept any liability with products which are purchase or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of Leading-Tech.

Leading-Tech products are not authorized for use as critical components in life support devices or systems without express written approval of Leading-Tech.

Version Update Information

Series NO.	Enactment/Revision Date	Effective Date	Version	Revision Content	Revision Reason	Revision Person	Note
01	2025.07.15	2025.07.15	3.0	New file	/	Ding	
02	2026.03.05	2026.03.05	3.1	Package outline E1(max)=2.6mm	/	Ding	