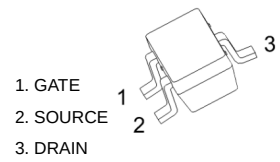
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

SOT-23-3L Plastic-Encapsulate MOSFETS

CJK3400 N-Channel Enhancement Mode Field Effect Transistor

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
30V	35mΩ@10V	5.8A
	40mΩ@4.5V	
	52mΩ@2.5V	

SOT-23-3L



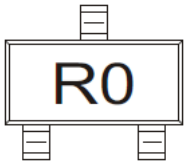
FEATURE

- High dense cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

APPLICATION

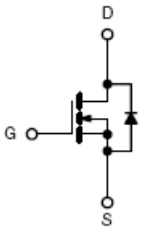
- Load/Power Switching
- Interfacing Switching

MARKING



R0=Device code

Equivalent Circuit



Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	5.8	A
Drain Current-Pulsed ①	I_{DM}	30	A
Power Dissipation ④	P_D	1.25	W
Thermal Resistance from Junction to Ambient ④	$R_{\theta JA}$	100	℃/W
Operation Junction and Storage Temperature Range	T_J,T_{STG}	-55~+150	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

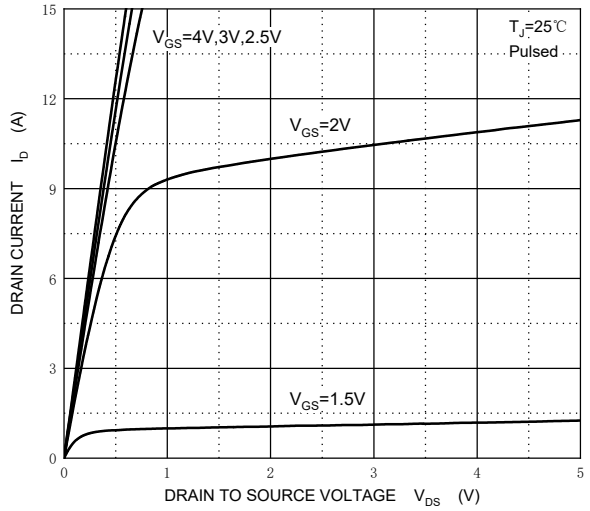
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =24V,V_{GS} = 0V,T_J=25℃			1	μA
		V_{DS} =24V,V_{GS} = 0V,T_J=125℃			1	mA
Gate-source leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V			±100	nA
On characteristics						
Drain-source on-resistance ②	$R_{DS(on)}$	V_{GS} =10V, I_D =5.8A		25	35	mΩ
		V_{GS} =4.5V, I_D =5A		27	40	mΩ
		V_{GS} =2.5V, I_D=4A		33	52	mΩ
Forward transconductance	g_{FS}	V_{DS} =5V, I_D =5A	8			S
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.7	0.9	1.4	V
Dynamic Characteristics ③						
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V,f =1MHz		820	1050	pF
Output capacitance	C_{oss}			99		pF
Reverse transfer capacitance	C_{rss}			77		pF
Gate resistance	R_g	V_{DS} =0V,V_{GS} =0V,f =1MHz		3.6		Ω
Switching Characteristics ③						
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=15V, R_L=2.7Ω,R_{GEN}=3Ω		3.3	5	ns
Turn-on rise time	t_r			4.8	7	ns
Turn-off delay time	$t_{d(off)}$			26	40	ns
Turn-off fall time	t_f			4	6	ns
Total Gate Charge	Q_g	V_{DS}=10V,I_D=5A, V_{GS}=6V		9.5		nC
Gate-Source Charge	Q_{gs}			1.5		nC
Gate-Drain Charge	Q_{gd}			3		nC
Drain-source diode characteristics and maximum ratings						
Diode forward voltage ②	V_{SD}	I_S=1A,V_{GS}=0V			1	V
Continuous drain-source diode forward current	I_S				5.8	A
Pulsed drain-source diode forward current①	I_{SM}				30	A

Note :

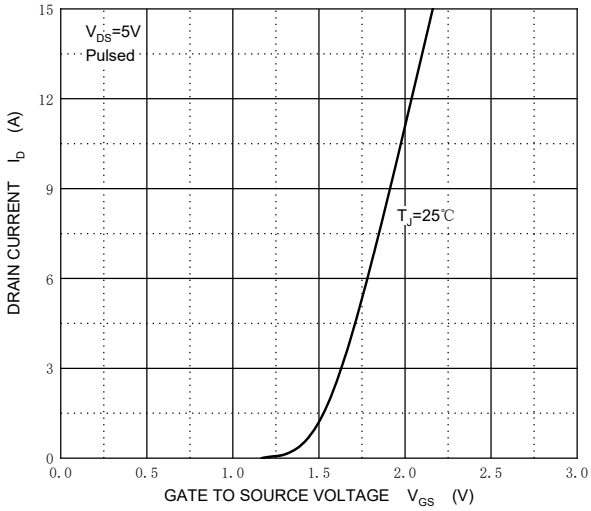
1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
3. Guaranteed by design, not subject to production testing.
4. The value of P_D&$R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz. Copper, two sided, in a still air environment with Ta=25℃.

Typical Characteristics

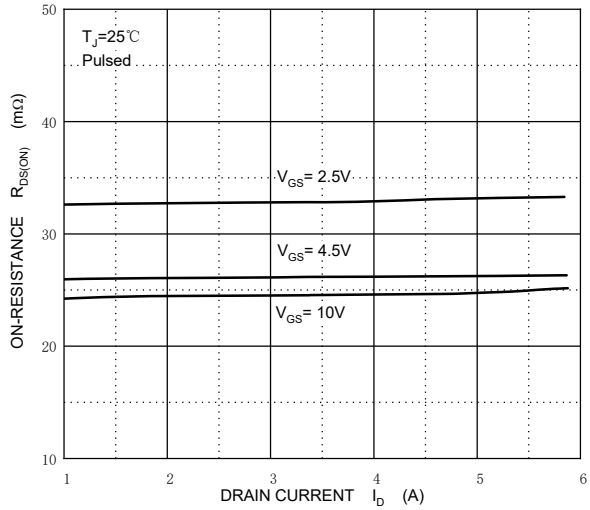
Output Characteristics



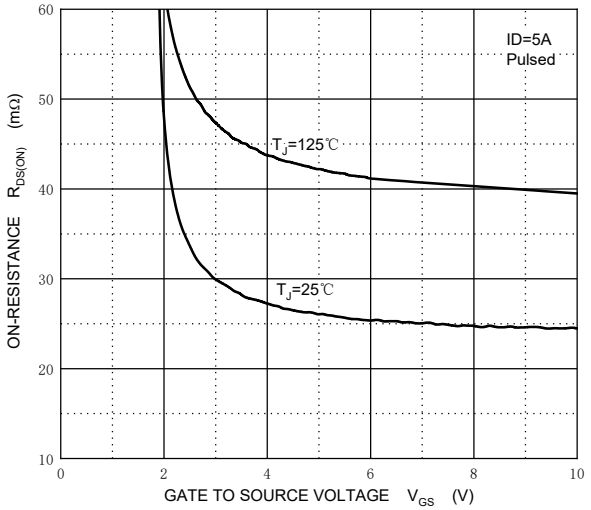
Transfer Characteristics



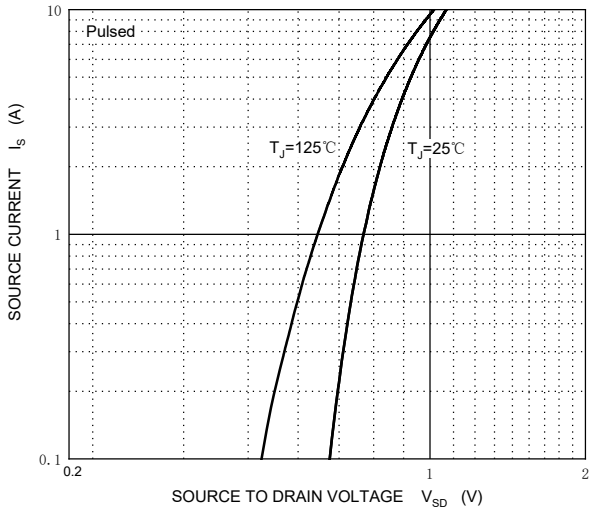
$R_{DS(ON)}$ —— I_D



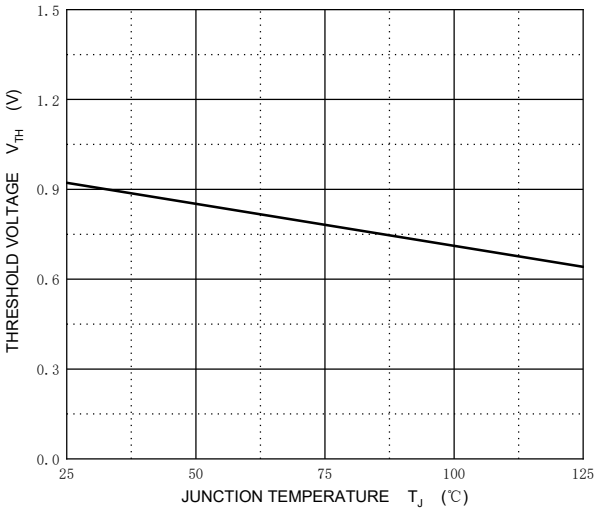
$R_{DS(ON)}$—— V_{GS}



I_S —— V_{SD}

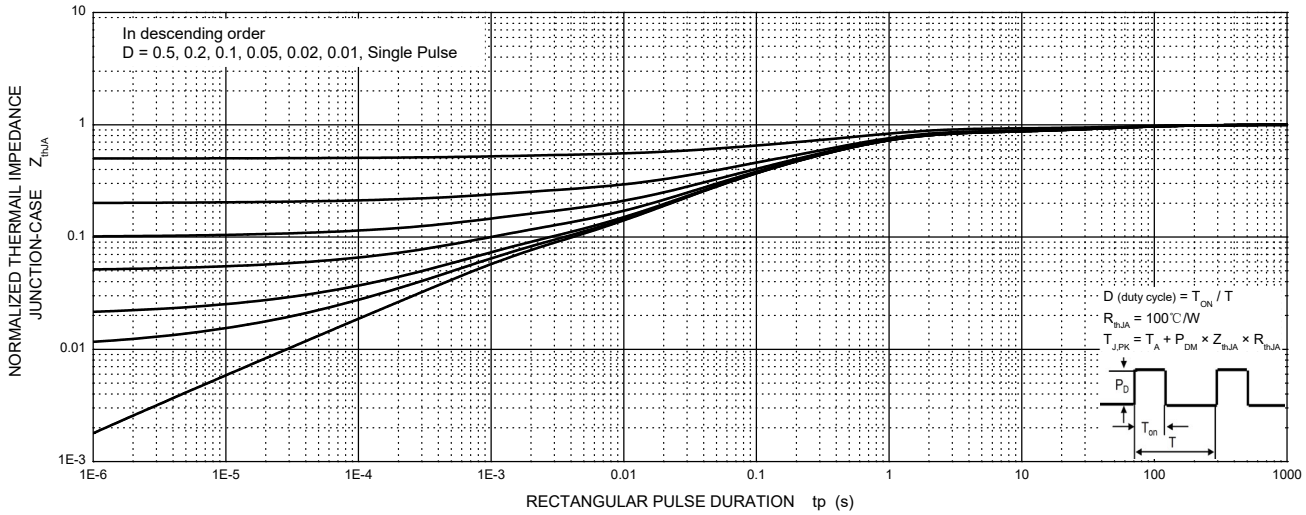


Threshold Voltage

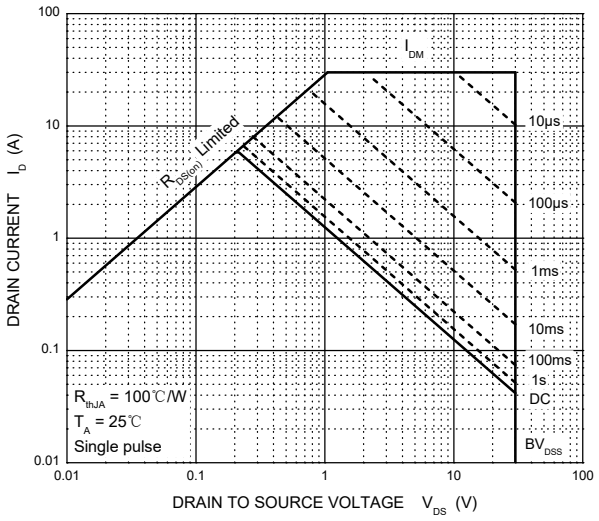


Typical Characteristics

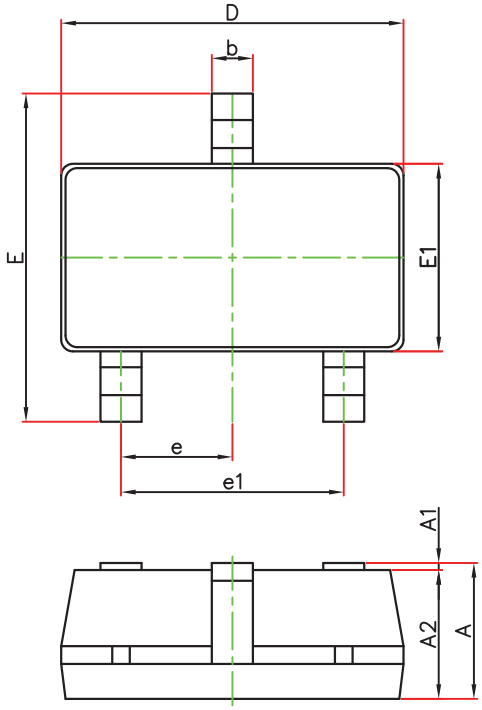
Transient Thermal Impedance, Junction-Case

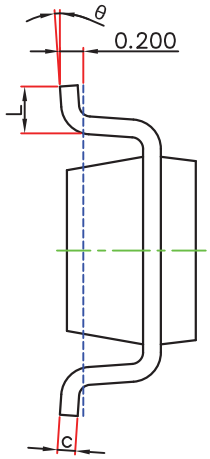


Maximum Safe Operating Area



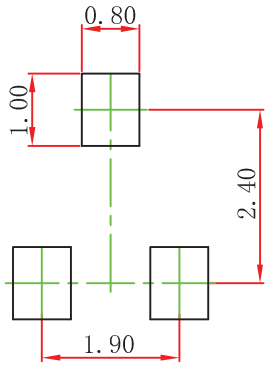
SOT-23-3L Package Outline Dimensions





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

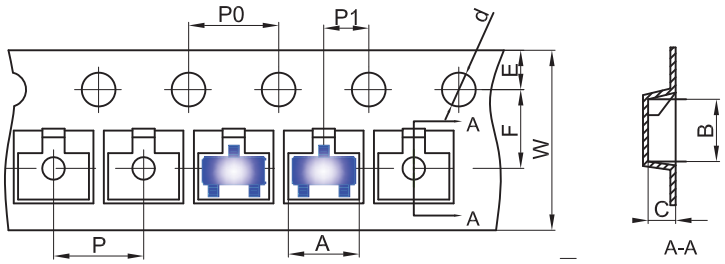
SOT-23-3L Suggested Pad Layout



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

SOT-23-3L Tape and Reel

SOT-23-3L Embossed Carrier Tape

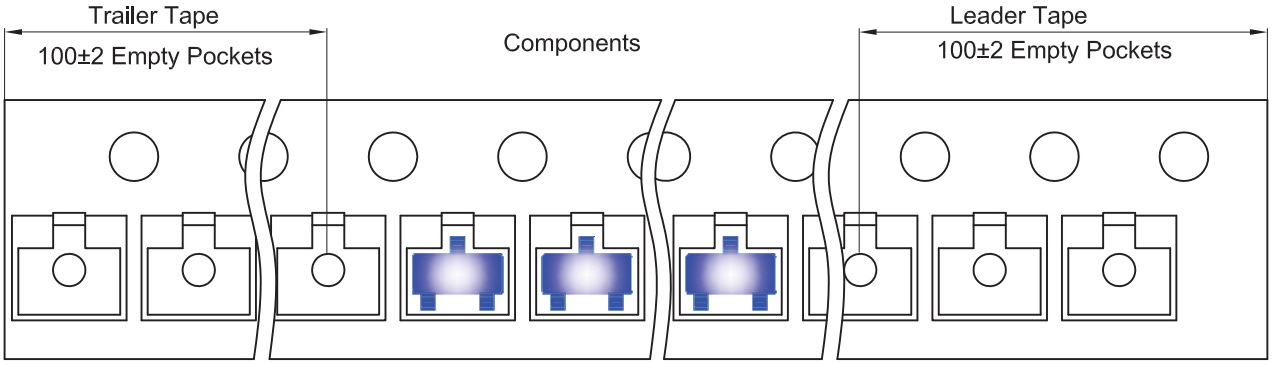


Packaging Description:

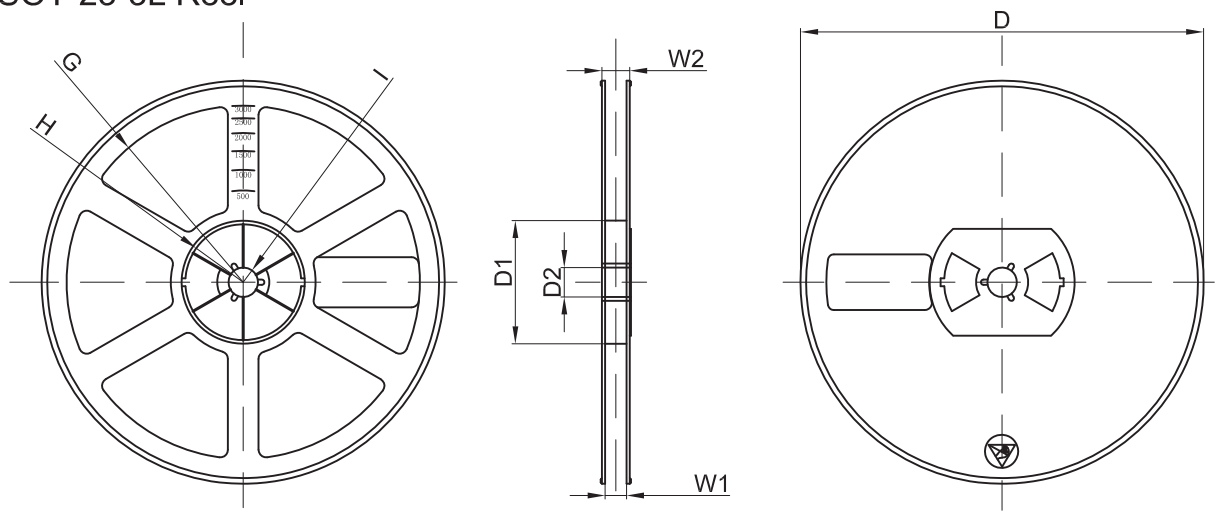
SOT-23-3L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 18.0cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23-3L	3.18	3.28	1.32	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23-3L Tape Leader and Trailer



SOT-23-3L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø180.00	60.00	13.00	R78.00	R25.60	R6.50	9.50	13.10

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	