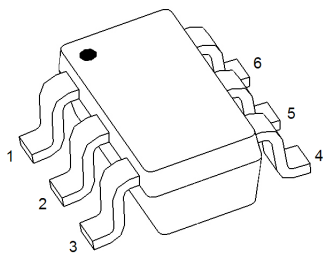
SZCJ Shenzhen Changji Semiconductor Co., LTD.

SOT-23-6L Plastic-Encapsulate MOSFETS

CJL2013 Dual N-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$TYP	I_D
20V	12.2 mΩ@4.5V	6A
	12.9 mΩ@3.8V	
	13.6 mΩ@3.1V	
	14.9 mΩ@2.5V	

SOT-23-6L



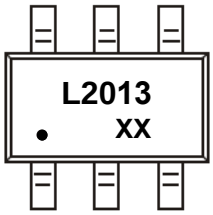
FEATURE

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$
- Low Gate Charge
- High Power and Current Handing Capability
- Surface Mount Package

APPLICATION

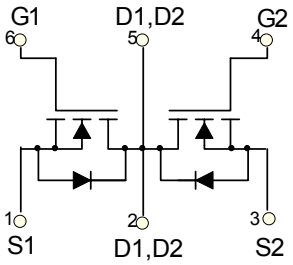
- Battery Protection
- Load Switch
- Power Management

MARKING



L2013=Device code
Solid point=Pin1 positioning point
XX=Date Code

Equivalent Circuit



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	6	A
Pulsed Drain Current (note 1)	I_{DM}	25	A
Power Dissipation (note 2)	P_D	1.5	W
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	83.3	℃/W
Operation Junction and Storage Temperature Range	T_J,T_{STG}	-55~+150	℃
Lead Temperature for Soldering Purposes(1/8'' from case for 10 s)	T_L	260	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERICTISCS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =16V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±100	nA
Gate threshold voltage (note 3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	0.7	1.0	V
Drain-source on-resistance (note 3)	$R_{DS(on)}$	V_{GS} =4.5V, I_D =3A	10.5	12.2	14.0	mΩ
		V_{GS} =3.8V, I_D =3A	11.4	12.9	14.5	mΩ
		V_{GS} =3.1V, I_D =3A	12.0	13.6	16.0	mΩ
		V_{GS} =2.5V, I_D =3A	13.3	14.9	20.0	mΩ
Forward tranconductance (note 3)	g_{FS}	V_{DS} =5V, I_D =4.5A		10		S
Diode forward voltage (note 3)	V_{SD}	I_S=1.25A, V_{GS} = 0V			1.2	V
DYNAMIC CHARACTERICTISCS (note4)						
Input Capacitance	C_{iss}	V_{DS} =8V,V_{GS} =0V,f =1MHz		935		pF
Output Capacitance	C_{oss}			170		pF
Reverse Transfer Capacitance	C_{rss}			145		pF
SWITCHING CHARACTERICTISCS (note 4)						
Turn-on delay time	$t_{d(on)}$	V_{DD}=10V,V_{GS}=4V, I_D=1A,R_{GEN}=10Ω		16		ns
Turn-on rise time	t_r			8		ns
Turn-off delay time	$t_{d(off)}$			48		ns
Turn-off fall time	t_f			14		ns
Total Gate Charge	Q_g	V_{DS} =10V,V_{GS} =4.5V,I_D=4A		16		nC
Gate-Source Charge	Q_{gs}			1.3		nC
Gate-Drain Charge	Q_{gd}			1.8		nC

Notes :

1.Repetitive rating：Pluse width limited by maximum junction temperature

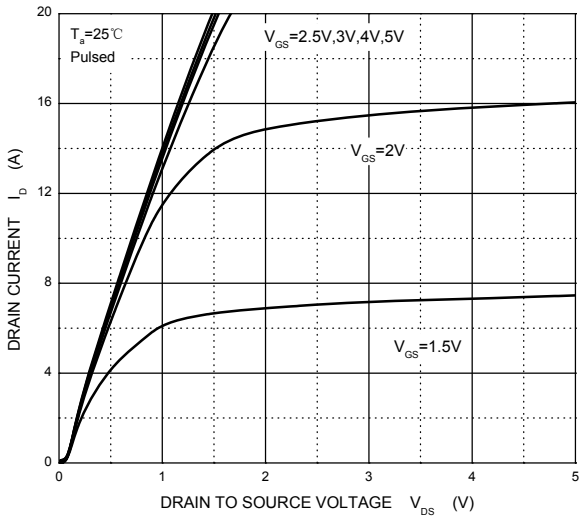
2.Surface mounted on FR4 board using 1 square inch pad size,1oz single-side copper.

3. Pulse test : Pulse width≤300μs, duty cycle≤2%.

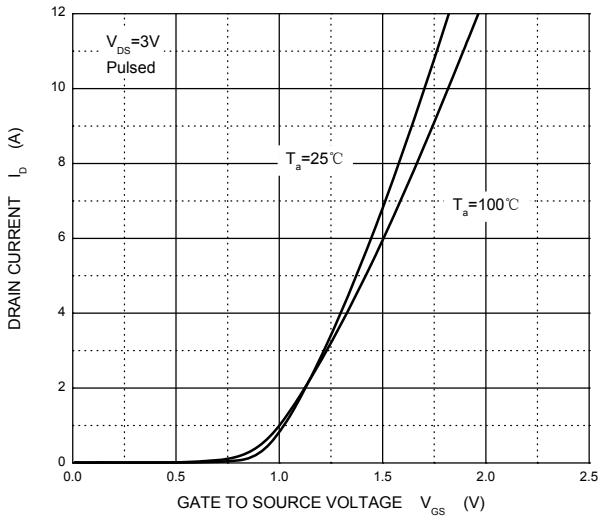
4. Guaranteed by design, not subject to production.

Typical Characteristics

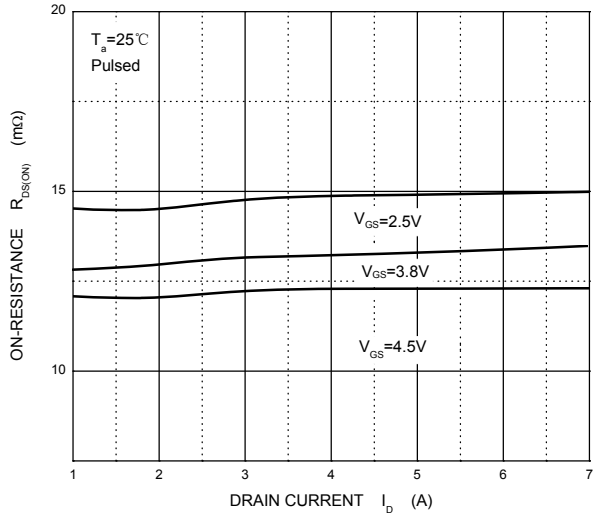
Output Characteristics



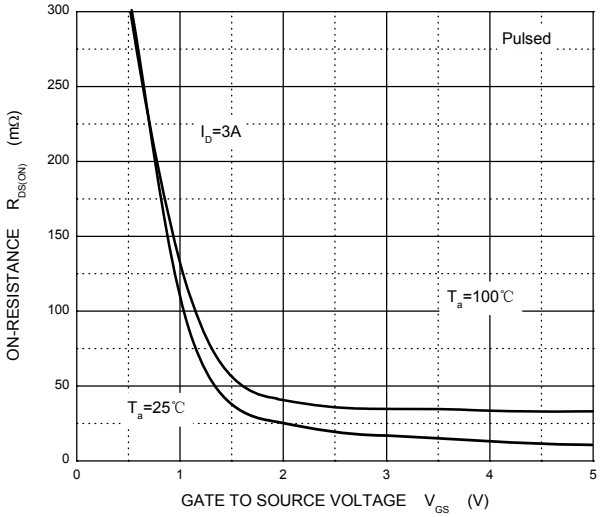
Transfer Characteristics



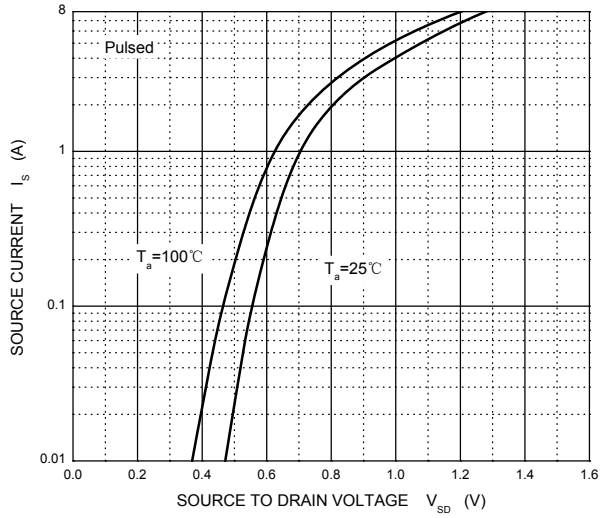
$R_{DS(ON)}$ —— I_D



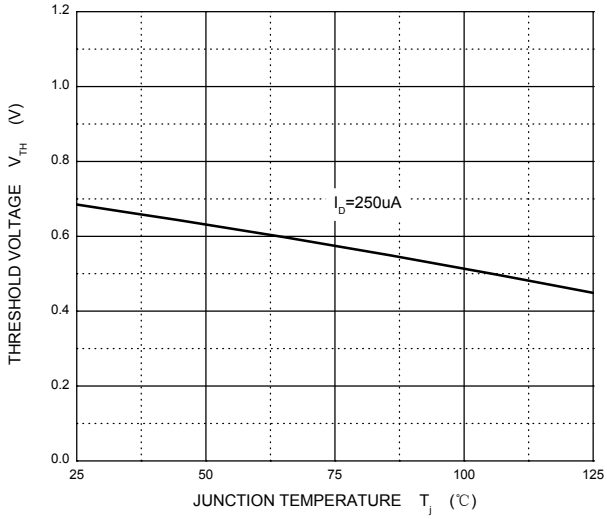
$R_{DS(ON)}$ —— V_{GS}



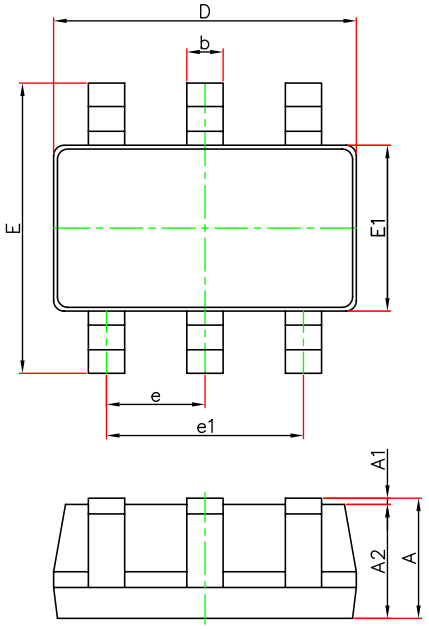
I_S —— V_{SD}

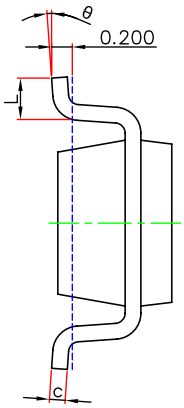


Threshold Voltage



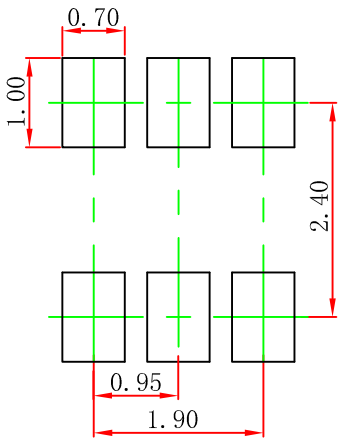
SOT-23-6L Package Outline Dimensions





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-23-6L Suggested Pad Layout



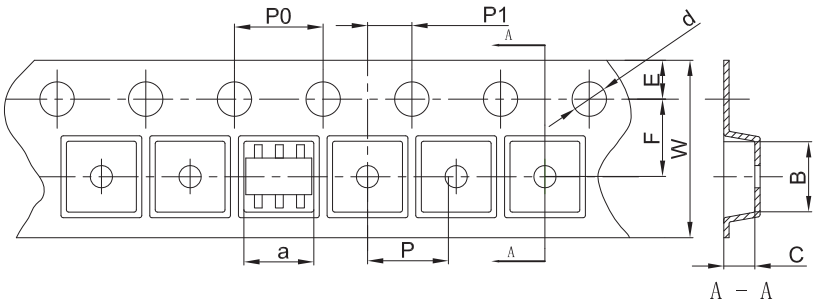
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

NOTICE

SZCJ reserves the right to make modifications,enhan nts,improvements,corrections or other es without further notice to any product herein. SZCJ does not assume any liability arising out of the application or use of any product described h

SOT-23-6L Tape and Reel

SOT-23-6L Embossed Carrier Tape

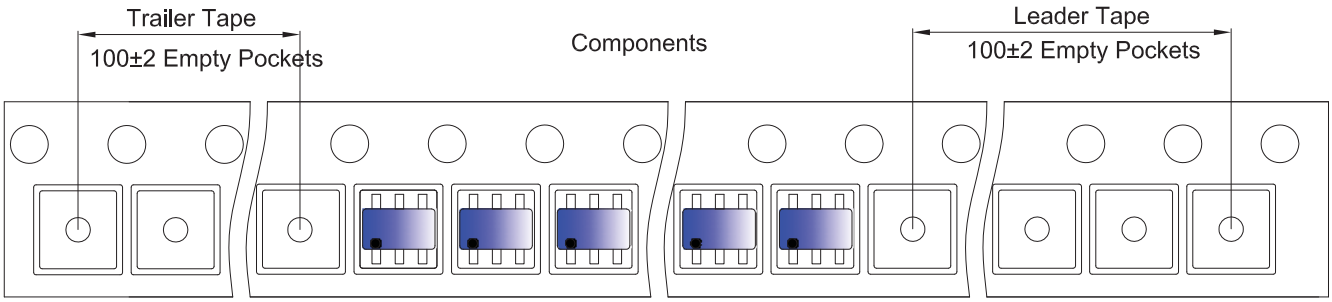


Packaging Description:

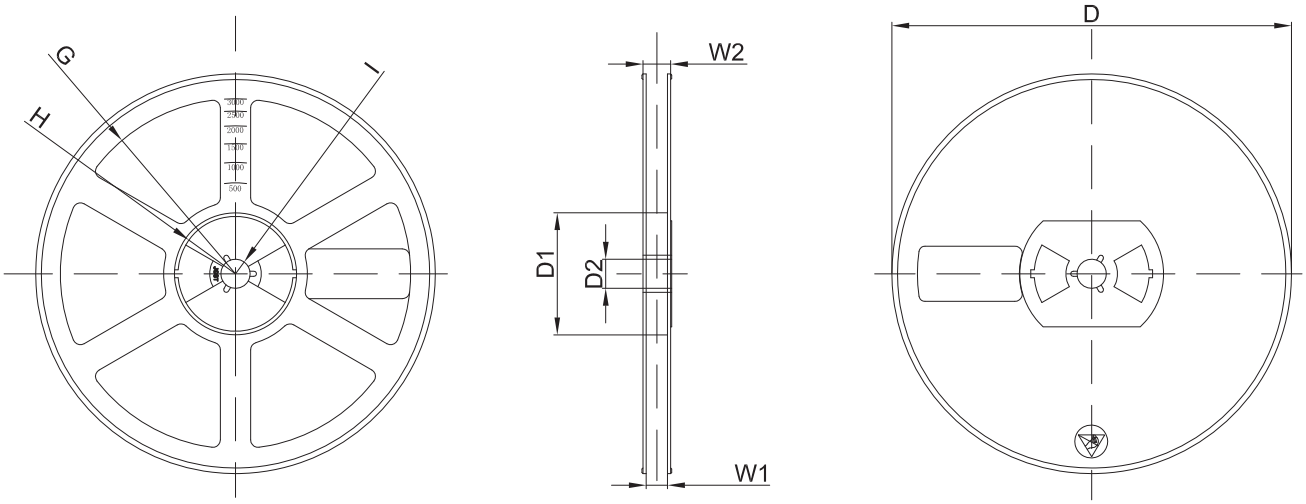
SOT-23-6L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts 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-23-6L	3.23	3.17	1.37	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23-6L Tape Leader and Trailer



SOT-23-6L 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	