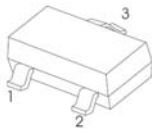
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

SOT-23 Plastic-Encapsulate MOSFETS

CJ3415 P-Channel 20-V(D-S) MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
-20V	50mΩ@-4.5V	-4A
	60mΩ@-2.5V	
	100mΩ@-1.8V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

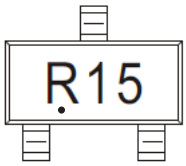
FEATURE

- Excellent $R_{DS(ON)}$, low gate charge,low gate voltages

APPLICATION

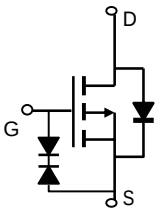
- Load switch and in PWM applicatopns

MARKING



R15=Device code
Solid dot = Green molding compound device,if none, the normal device

Equivalent Circuit



Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±8	
Continuous Drain Current (t≤10s)	I_D	-4.0	A
Maximum Power Dissipation (note4)	P_D	1.3	W
Thermal Resistance from Junction to Ambient(note4)	$R_{\theta JA}$	96.2	℃/W
Operation Junction and Storage Temperature Range	T_J,T_{STG}	-55 ~+150	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

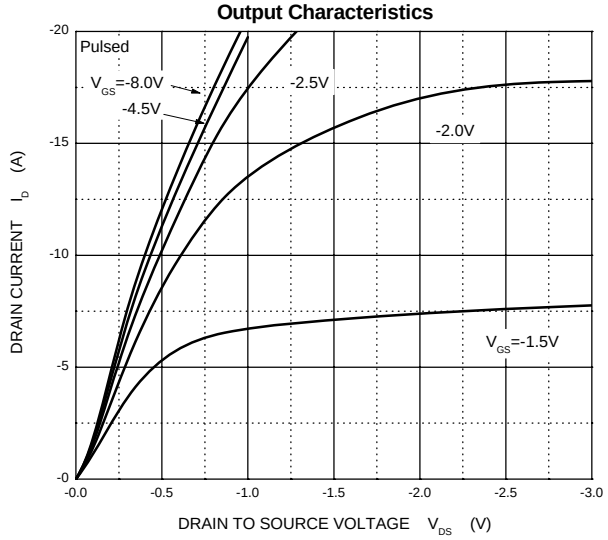
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static Parameters						
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.3	-0.56	-1	
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±8V			±10	μA
		V_{DS} =0V, V_{GS} =±4.5V			±1	
Zero gate voltage drain current	I_{DSS}	V_{DS} =-16V, V_{GS} =0V			-1	
Drain-source on-state resistance(note1)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-4A		0.037	0.050	Ω
		V_{GS} =-2.5V, I_D =-4A		0.045	0.060	
		V_{GS} =-1.8V, I_D =-2A		0.080	0.100	
Forward transconductance(note2)	g_{FS}	V_{DS} =-5V, I_D =-4A	8			S
Body diode voltage(note2)	V_{SD}	I_S=-1A,V_{GS} =0V			-1	V
Dynamic Parameters (note3)						
Input capacitance	C_{iss}	V_{DS} =-10V,V_{GS} =0V,f =1MHz		1450		pF
Output capacitance	C_{oss}			205		
Reverse transfer capacitance	C_{rss}			160		
Gate resistance	R_g	V_{DS} =0V,V_{GS} =0V,f =1MHz		6.5		Ω
Switching Parameters						
Total gate charge	Q_g	V_{DS} =-10V,V_{GS} =-4.5V,I_D =-4A		17.2		nC
Gate-Source charge	Q_{gs}			1.3		
Gate-drain charge	Q_{gd}			4.5		
Turn-on delay time (note3)	$t_{d(on)}$	V_{DS}=-10V, V_{GS}=-4.5V R_{GEN} =3Ω, R_L=2.5Ω,		9.5		ns
Turn-on rise time(note3)	t_r			17		
Turn-off delay time(note3)	$t_{d(off)}$			94		
Turn-off fall time(note3)	t_f			35		

Notes:

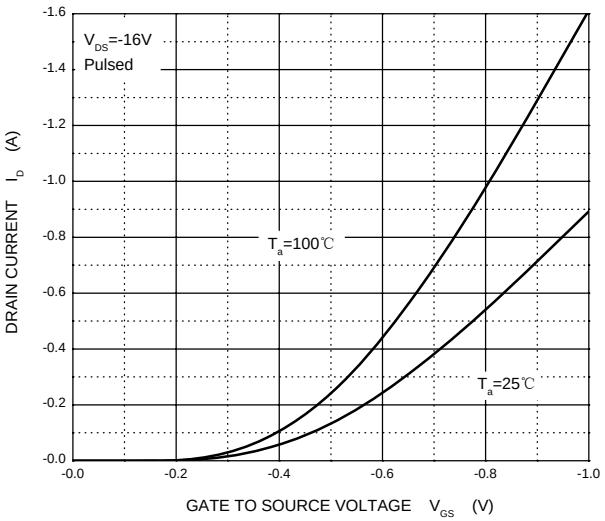
1. Repetitive rating,pulse width limited by junction temperature.
2. Pulse Test : Pulse width≦300μs, duty cycle≦2%.
3. These parameters have no way to verify.
4. Device mounted on 1"×1" FR-4 PCB with high coverage 2oz Copper ,double sided. Copper, t≤10s.

Typical Characteristics

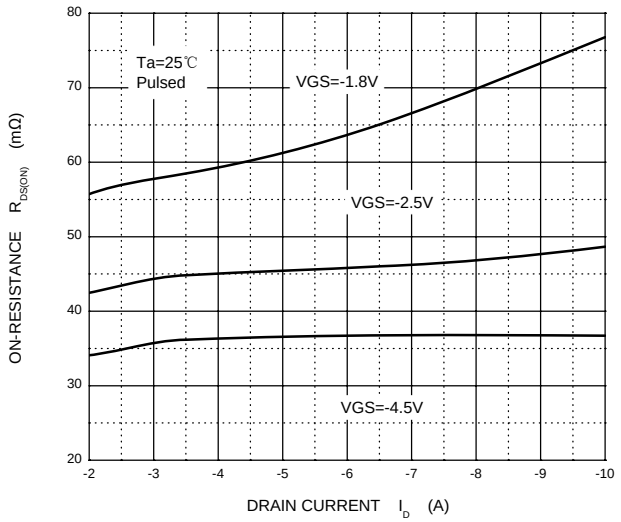
Output Characteristics



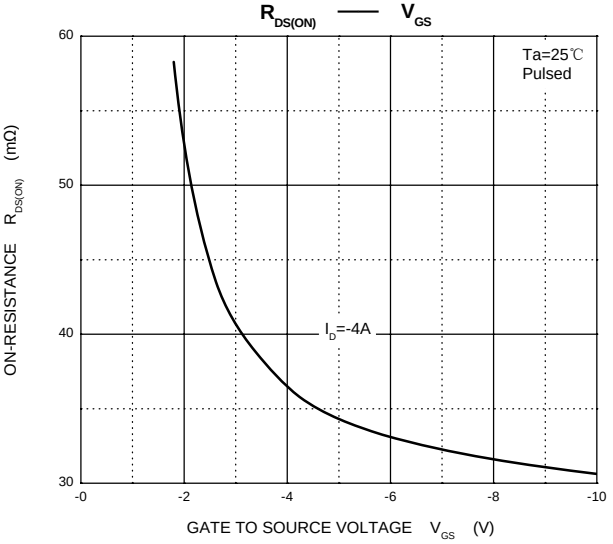
Transfer Characteristics



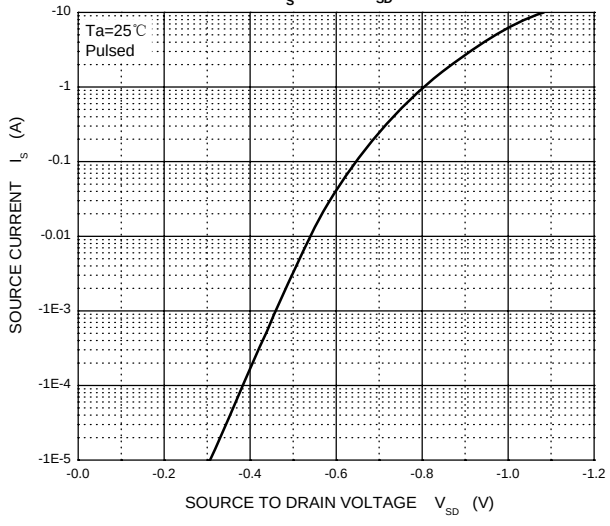
$R_{DS(ON)}$ —— I_D



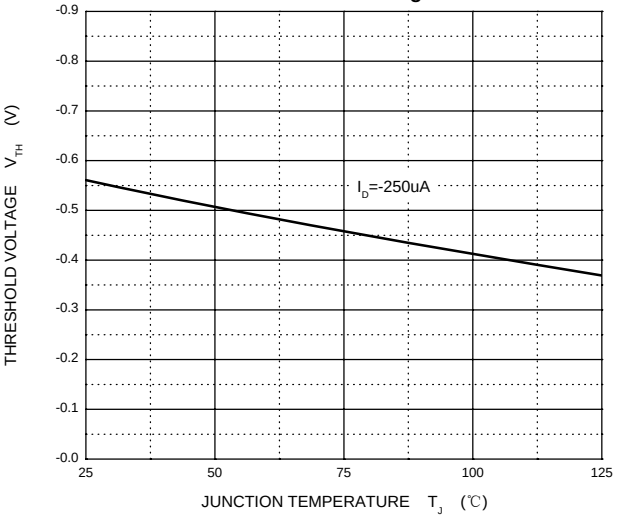
$R_{DS(ON)}$ —— V_{GS}



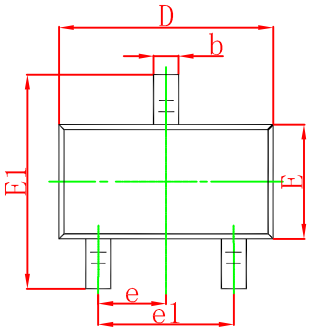
I_S —— V_{SD}

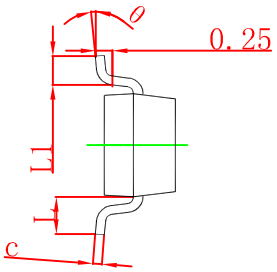


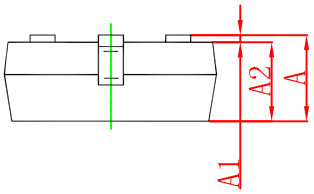
Threshold Voltage



SOT-23 Package Outline Dimensions

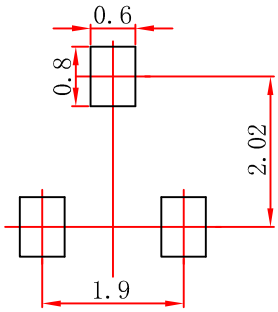






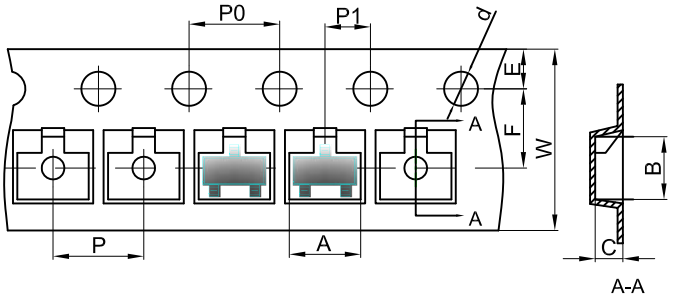
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	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 purposes only.

SOT-23 Embossed Carrier Tape

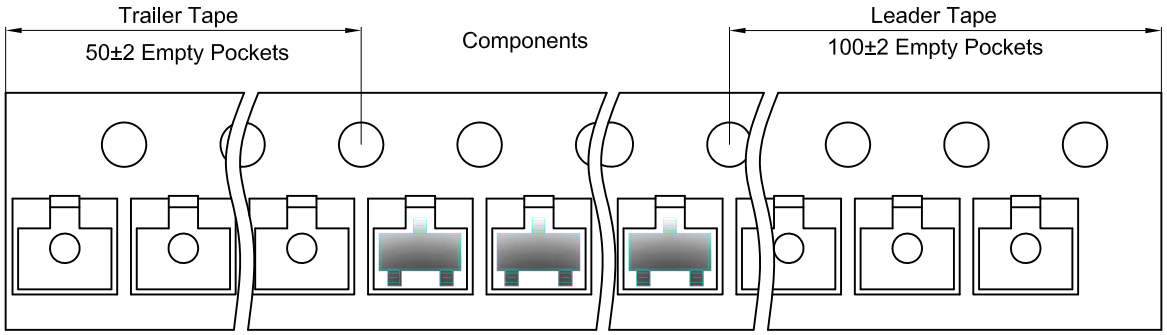


Packaging Description:

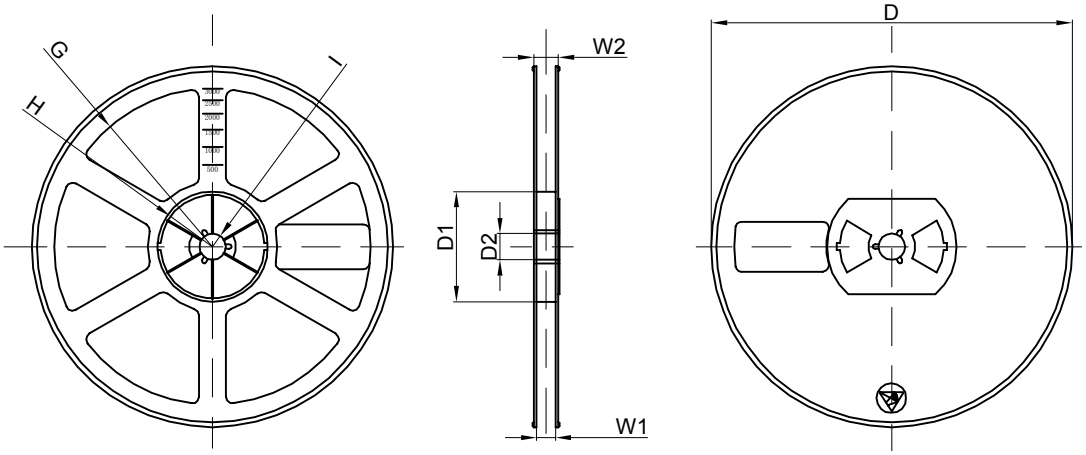
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm 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	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

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	