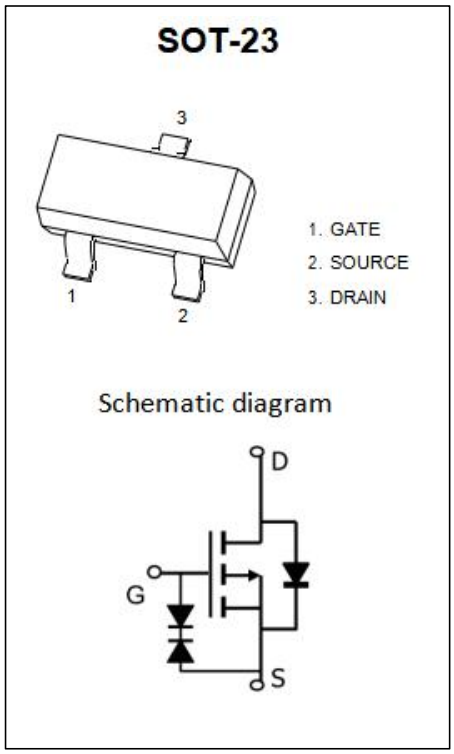
CHONGQING CLOUDCHILD TECHNOLOGY CO., LTD

SOT-23 Plastic-Encapsulate MOSFETS

CC3415

P-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$ TYP	I_D
-20 V	33mΩ@-4.5V	-4A
	45mΩ@-2.5V	
	63mΩ@-1.8V	



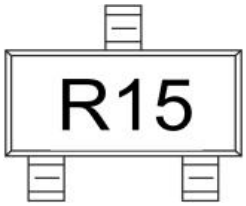
FEATURES

- Excellent RDS(ON), low gate charge,low gate voltages
- Trench FET power MOSFET
- ESD protected gate
- AEC Q101 Qualified

APPLICATIONS

- Load switch and in PWM application

MARKING



ABSOLUTE MAXIMUM RATINGS(T_c=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(t≤10s)	I_D	-4.0	A
Maximum Power Dissipation(t≤10s)	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Operating Temperature	T_{OPR}	-55~ +150	℃
Storage Temperature	T_{STG}	-65~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS

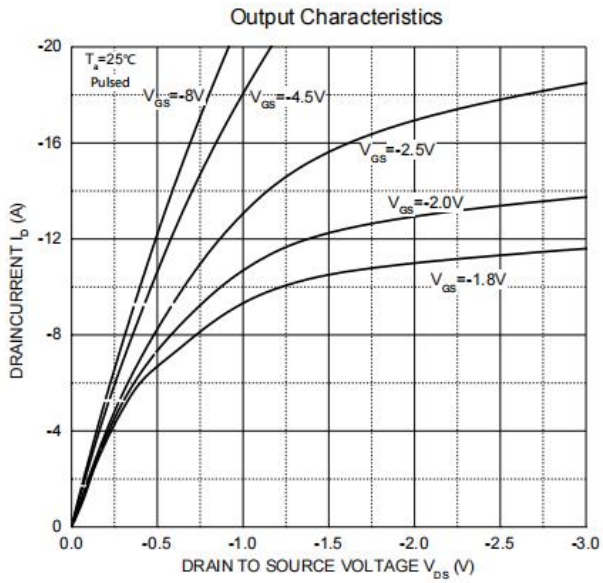
TC=25℃ unless otherwise specified

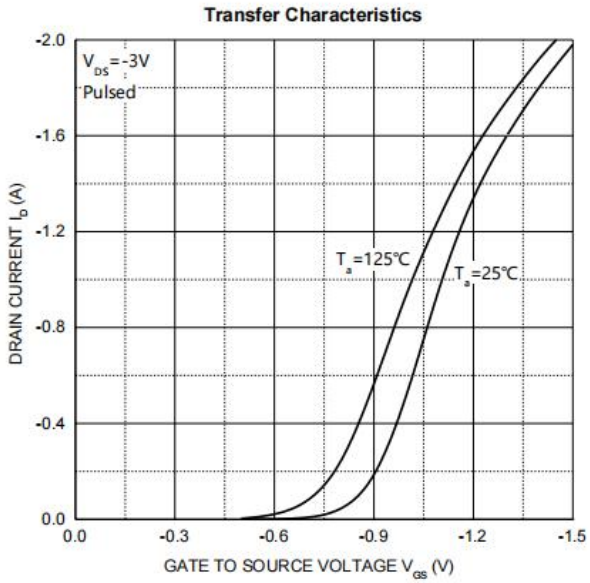
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-16V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±10	μA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.4	-0.65	-1.0	V
Drain-source on-resistance(1)	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-4A		33	50	mΩ
		V_{GS} =-2.5V, I_D =-4A		45	60	
		V_{GS} =-1.8V, I_D =-2A		63	100	
Forward tranconductance(2)	g_{FS}	V_{DS} =-5V, I_D =-4A	8			S
Dynamic characteristics(3)						
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 Characteristics						
Turn-on delay time(3)	$t_{d(on)}$	V_{DS}=-10V, V_{GS}=-4.5V R_{GEN} =3Ω, R_L=2.5Ω,		9.5		ns
Turn-on rise time(3)	t_r			17		
Turn-off delay time(3)	$t_{d(off)}$			94		
Turn-off fall time(3)	t_f			35		
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		
Source-Drain Diode characteristics						
Diode Forward voltage(2)	V_{DS}	V_{GS} =0V, I_S=-1A			-1	V

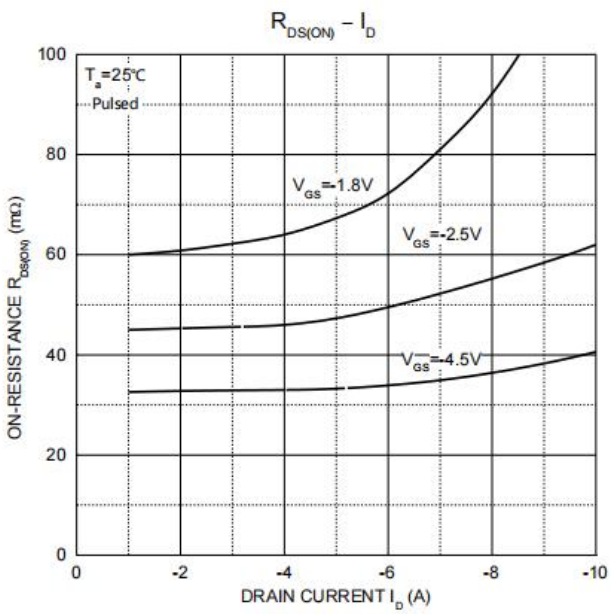
Notes:

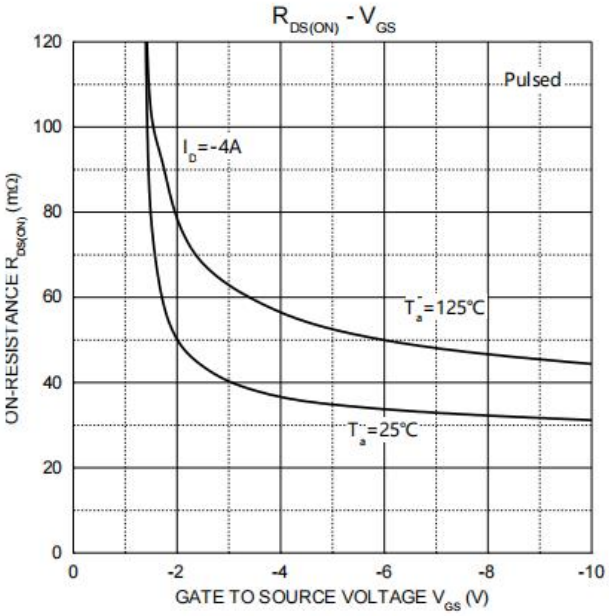
1. Repetitive rating,pulse width limited by junction temperature.
2. Pulse Test : Pulse width≦300μs, duty cycle≦2%.
3. These parameters have no way to verify.

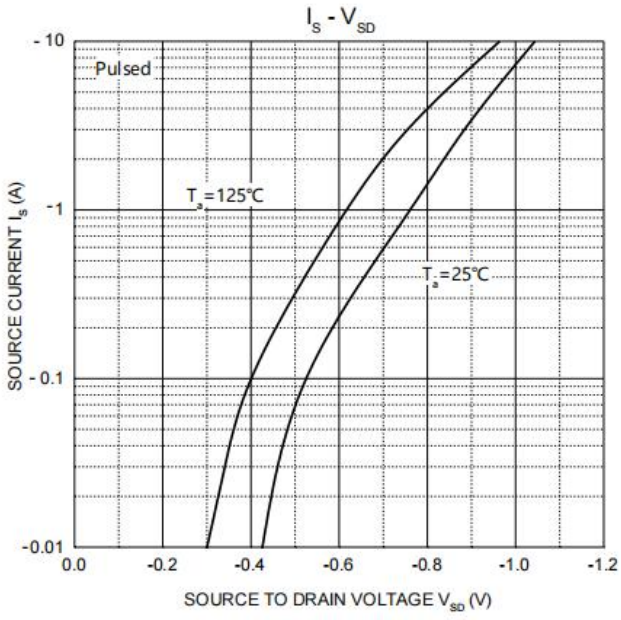
Typical Characteristics

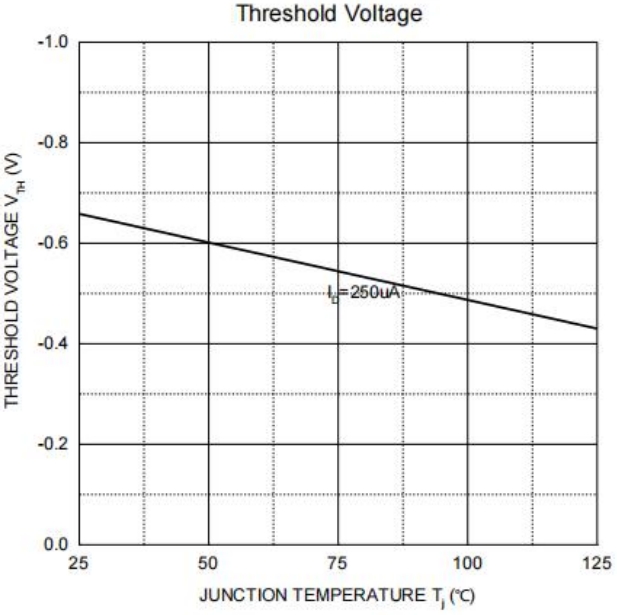




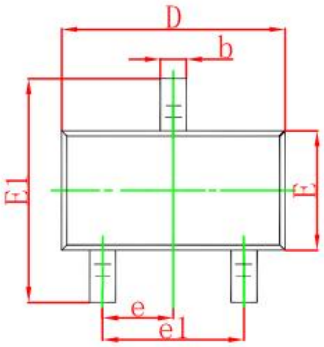


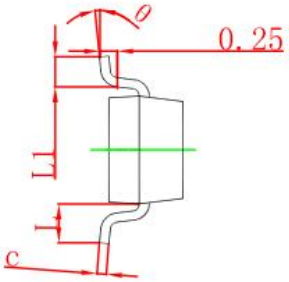


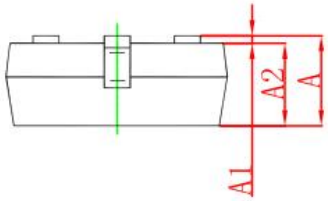




SOT-23 Package Outline Dimensions

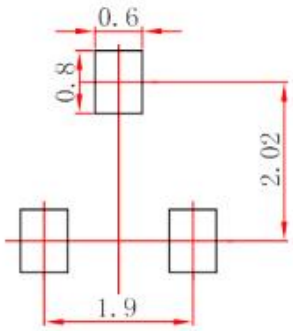






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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.

NOTICE

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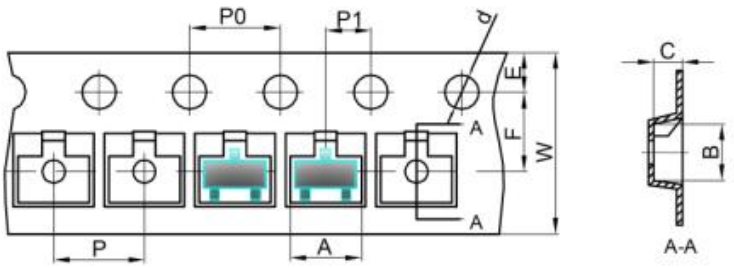
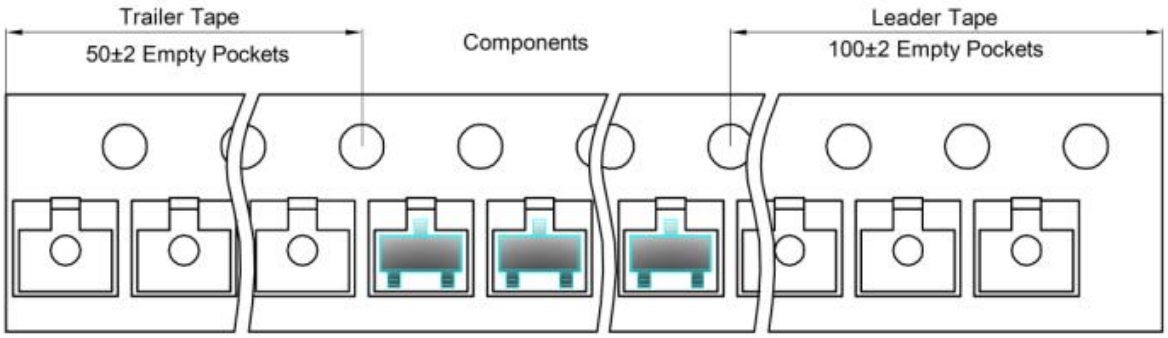
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

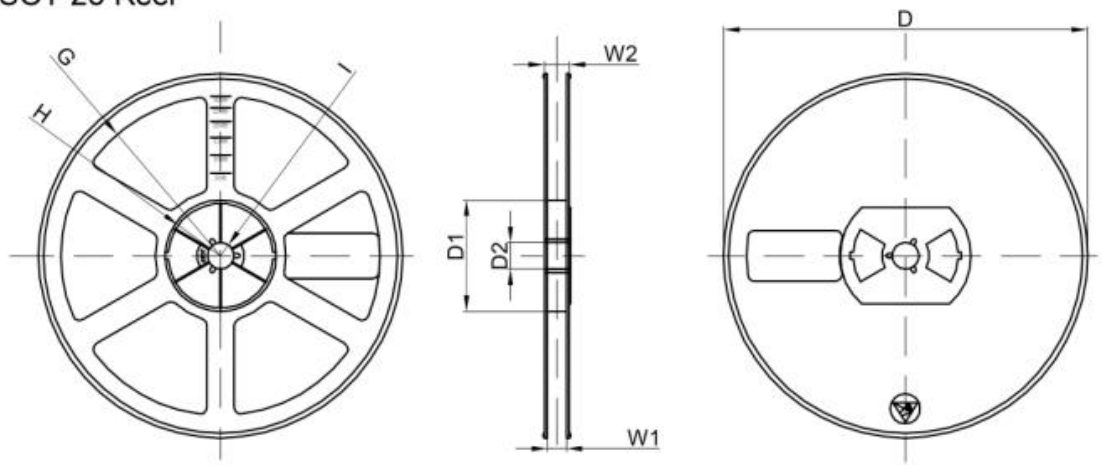


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

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	

Date of change	Rev #	revise content
2023/03/07	A/0	/