



CHONGQING CLOUDCHILD TECHNOLOGY CO.,LTD

SOT-23 Plastic-Encapsulate MOSFETS

CC2310

N-Channel Power MOSFET

V_{DS}	$R_{DS(ON)}$ (Typ.)	I_D
60 V	70m Ω @10V 82m Ω @4.5V	3A

DESCRIPTION

The CC2310 provides excellent $R_{DS(ON)}$ with low gate charge.

It can be used in a wide variety of applications.

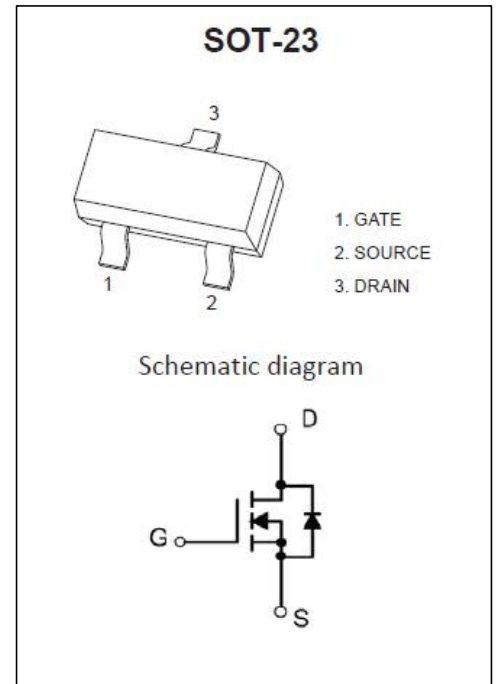
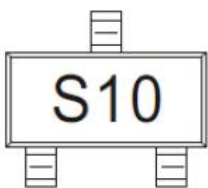
FEATURES

- High power and current handling capability
- Surface mount package
- AEC-Q101 Qualified

APPLICATIONS

- Battery Switch
- DC/DC Converter

MARKING



ABSOLUTE MAXIMUM RATINGS(T_J=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V _{DS}	60	V
Gate - Source Voltage	V _{GS}	±20	V
Continuous Drain Current ^{1,5}	I _D	3	A
Pulsed Drain Current ²	I _{DM}	10	A
Power Dissipation ^{4,5}	P _D	1.8	W
Thermal Resistance from Junction to Ambient ⁵	R _{θJA}	83.3	°C/W
Junction and Storage Temperature Range	T _J , T _{STG}	-55~ +175	°C

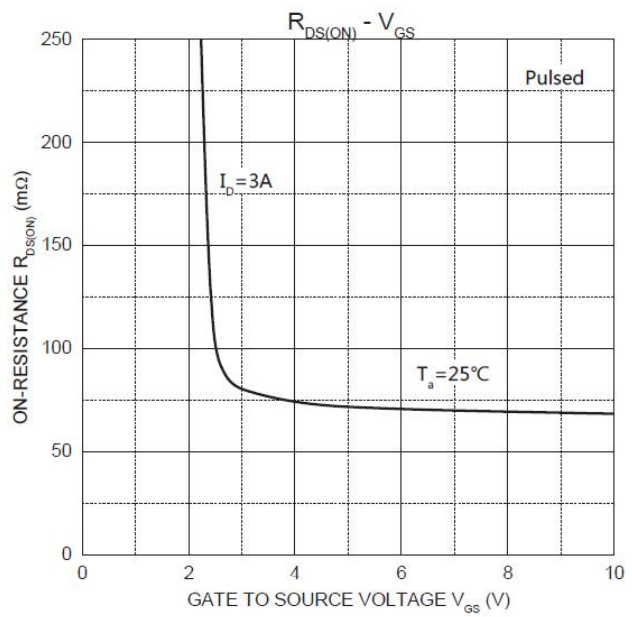
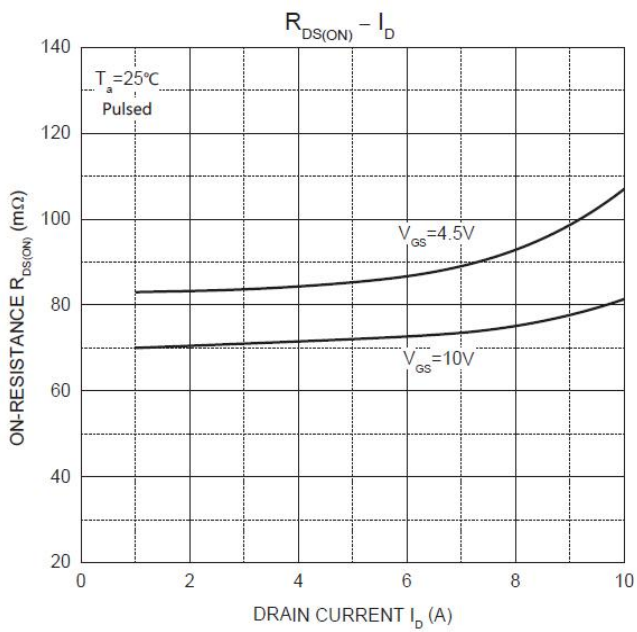
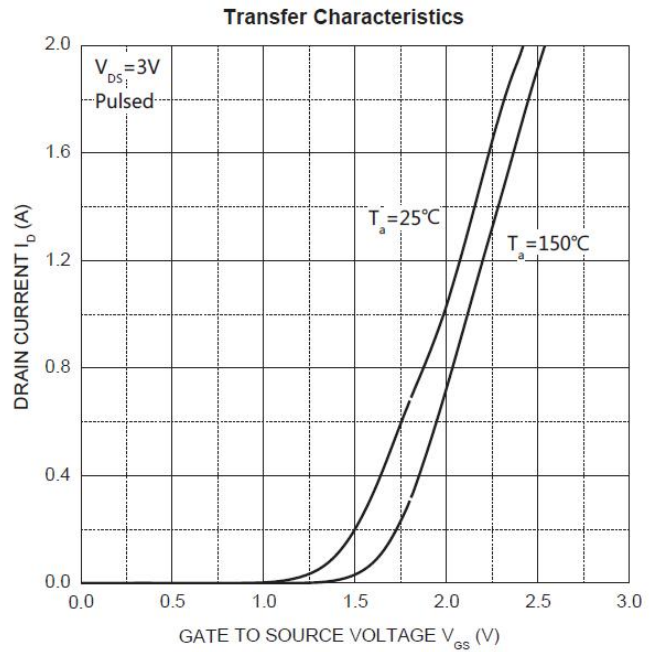
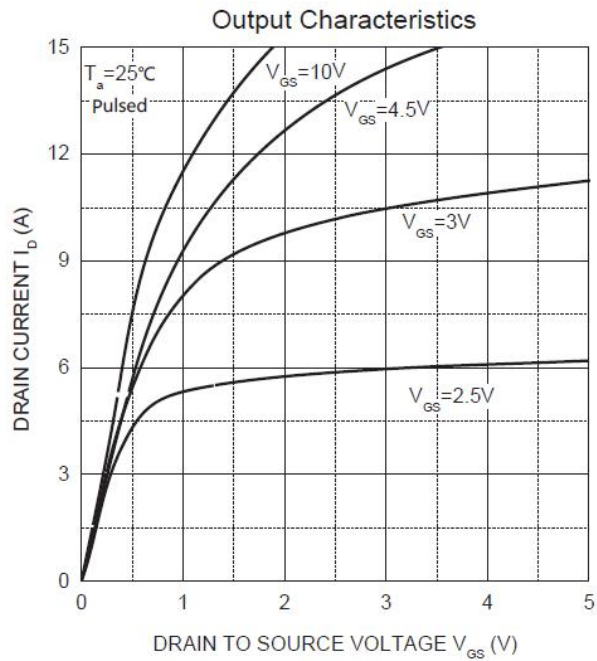
MOSFET ELECTRICAL CHARACTERISTICS(TC=25°C unless otherwise noted)

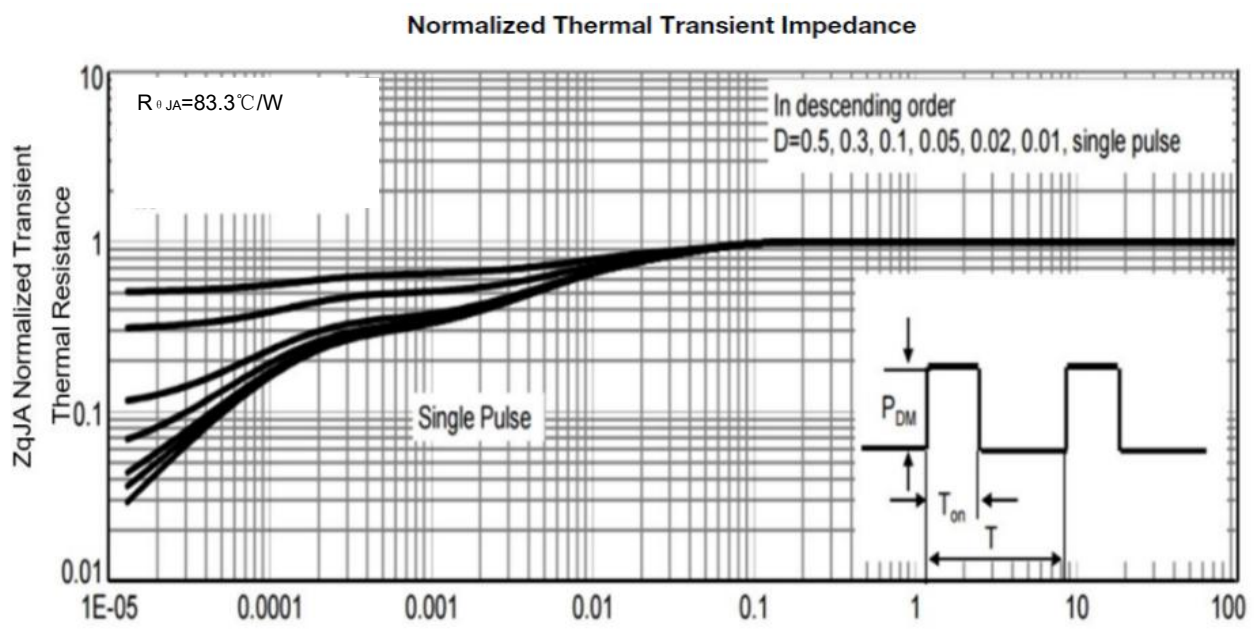
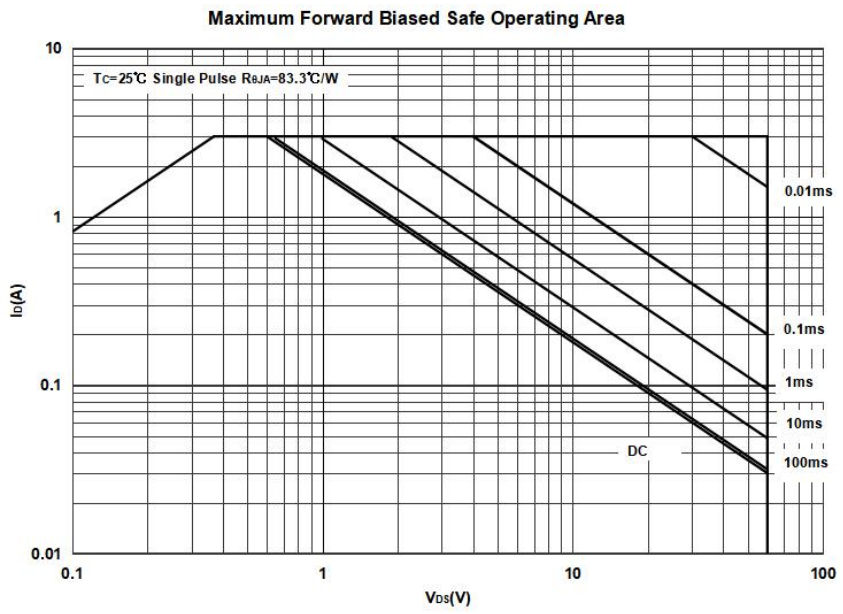
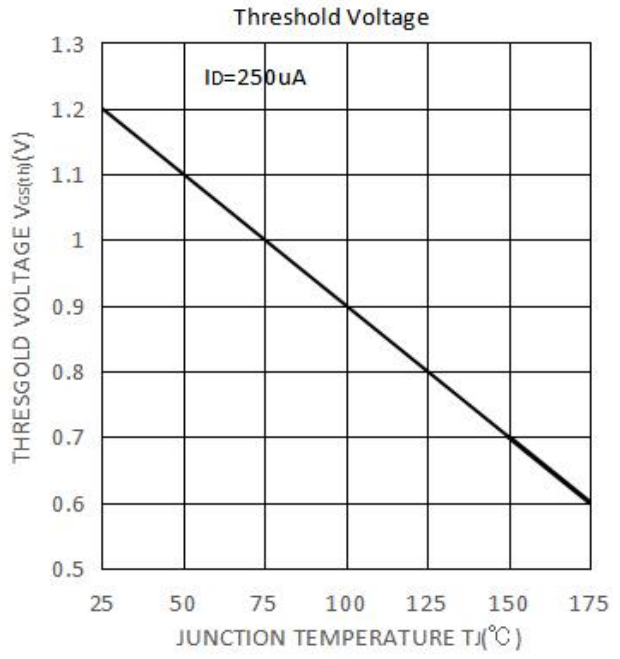
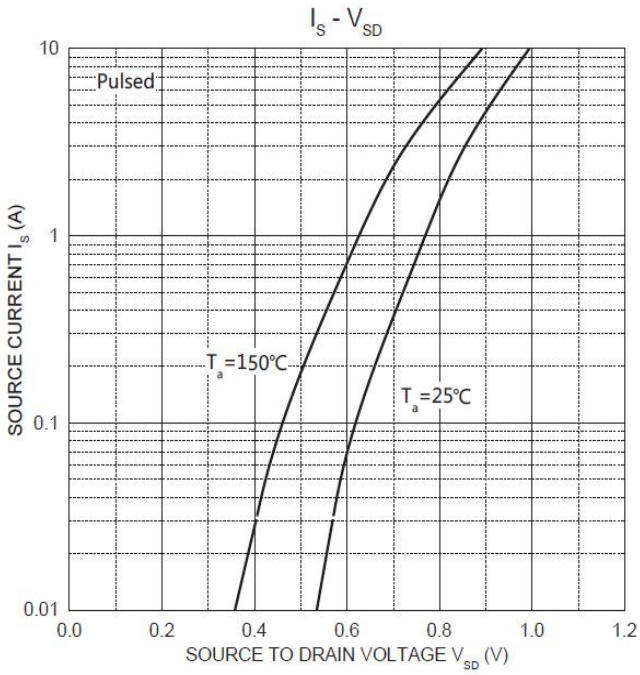
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
STATIC CHARACTERISTICS						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 60V, V _{GS} = 0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Gate Threshold Voltage ³	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.5	1.2	2	V
Drain-Source On-Resistance ³	R _{DS(on)}	V _{GS} = 10V, I _D = 3A		70	90	mΩ
		V _{GS} = 4.5V, I _D = 3A		82	123	
Forward Transconductance ³	g _{FS}	V _{DS} = 15V, I _D = 2A	1.4	2.5		S
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}	V _{DS} = 30V, V _{GS} = 0V, f = 1MHz		250		pF
Output Capacitance	C _{oss}			26		
Reverse Transfer Capacitance	C _{rss}			20		
SWITCHING CHARACTERISTICS						
Total Gate Charge	Q _g	V _{DS} = 30V, V _{GS} = 4.5V, I _D = 3A		7		nC
Gate-Source Charge	Q _{gs}			1.2		
Gate-Drain Charge	Q _{gd}			1.5		
Turn-On Delay Time	t _{d(on)}	V _{GS} = 10V, V _{DD} = 30V, I _D = 1.5A, R _{GEN} = 1Ω		6.5		ns
Turn-On Rise Time	t _r			15.2		
Turn-Off Delay Time	t _{d(off)}			15.2		
Turn-Off Fall Time	t _f			10.3		
Source-Drain Diode characteristics³						
Body Diode Voltage	V _{SD}	I _S = 3A, V _{GS} = 0V		0.8	1.2	V

Note :

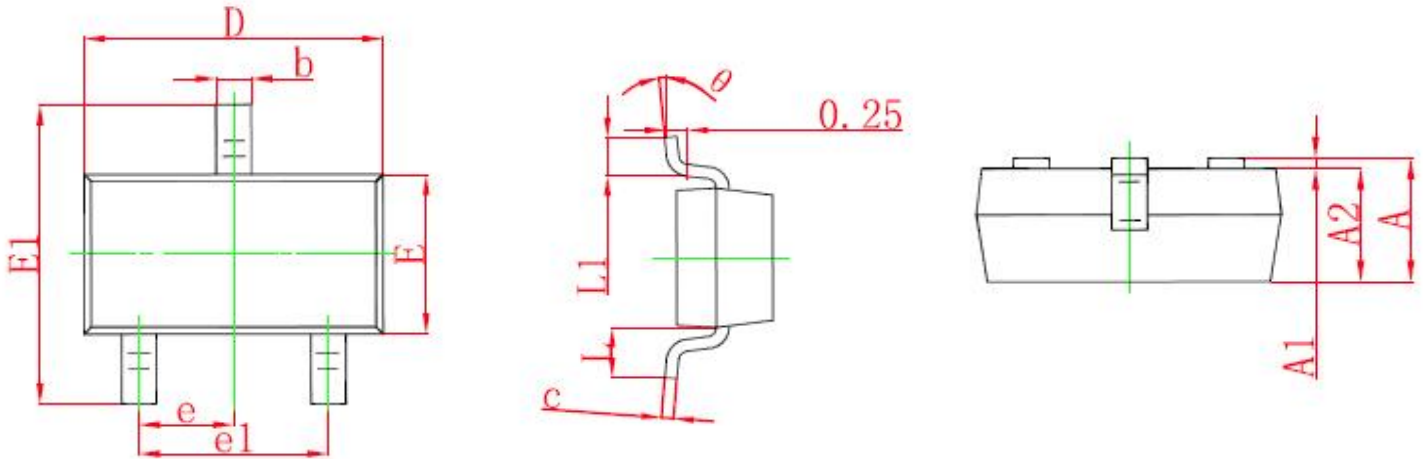
1. The maximum current rating is limited by package.
2. Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
3. Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
4. The power dissipation P_D is limited by T_{J(MAX)} = 175°C.
5. Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C.

Characteristics Curve:





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°

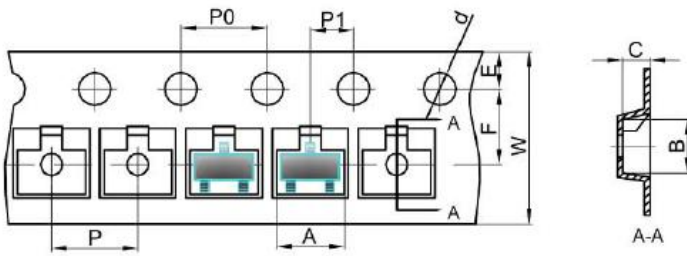
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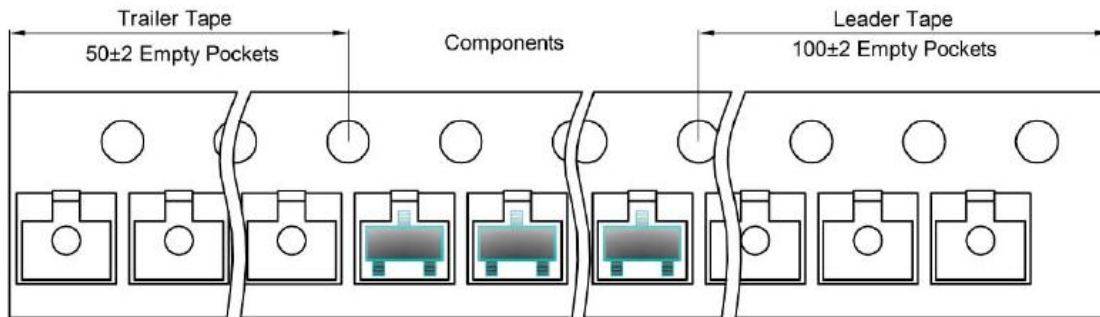
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape

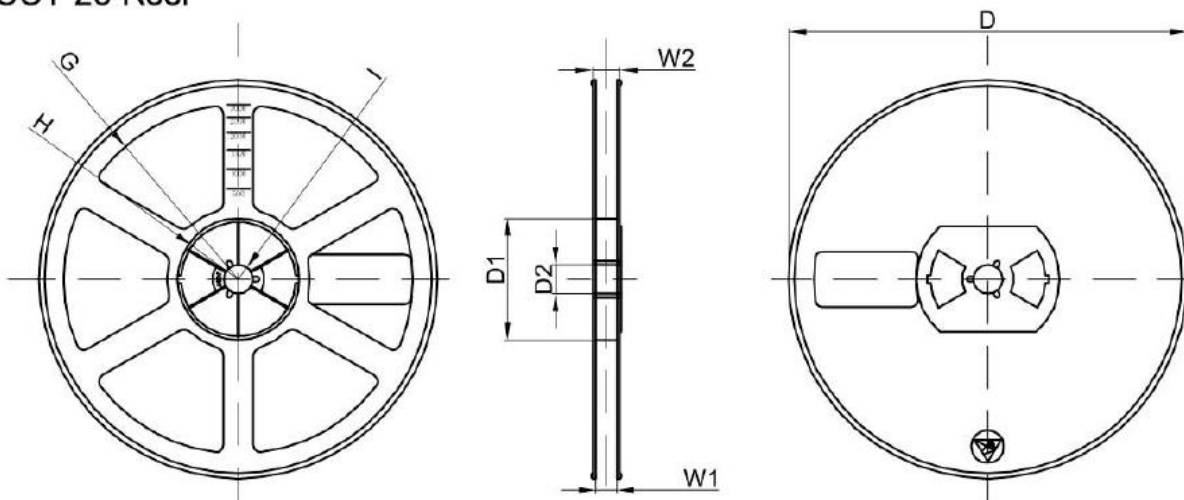


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

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
2023/2/20	A/0	/