

SOT-23 Plastic-Encapsulate MOSFETS
30V N-Channel MOSFET

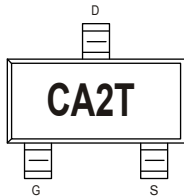
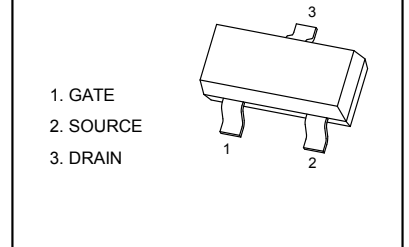
V_{(BR)DSS}	R_{DS(on)Typ}	I_{D Max}
60V	105mΩ@10V	3A
	125mΩ@4.5V	

DESCRIPTION

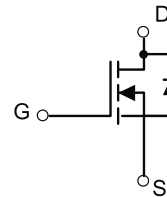
The SI2310 uses advanced trench technology to provide excellent R_{DS(ON)}, low gate charge and operation with gate voltage as low as 2.5V. This device is suitable for use as a battery protection or in other switching application.

FEATURE

- High power and current handing capability
- Lead free product is acquired
- Surface mount package

MARKING

SOT-23

APPLICATION

- Battery Switch
- DC/DC Converter

Equivalent circuit

PACKAGE SPECIFICATIONS

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	Q'TY/Carton (pcs)
SOT-23	7'	178	3000	203×203×195	45000	438×438×220	180000

Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	
Continuous Drain Current	I _D	3	A
Pulsed Drain Current ¹⁾	I _{DM}	10	A
Maximum Power Dissipation ^{1),2)}	P _D	0.35	W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55 to 150	°C
Thermal Resistance from Junction-to-Ambient (t≤5s)	R _{θJA}	357	°C/W

Notes

- ¹⁾ Pulse width limited by maximum junction temperature.
²⁾ Surface Mounted on FR4 Board, t ≤ 5 sec.

The above data are for reference only.



MOSFET ELECTRICAL CHARACTERISTICS

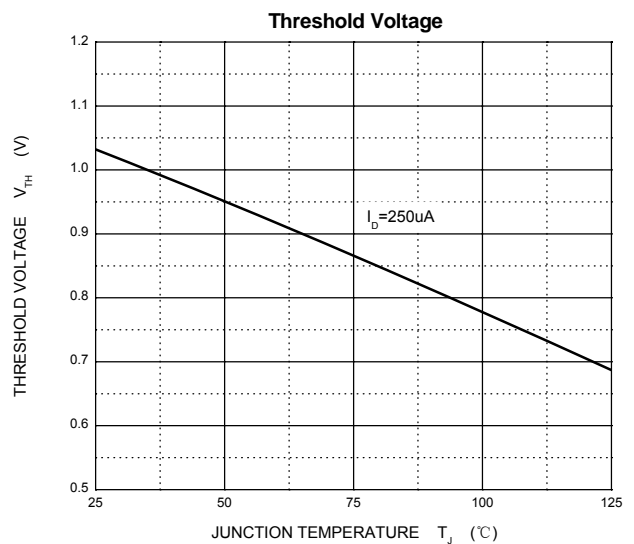
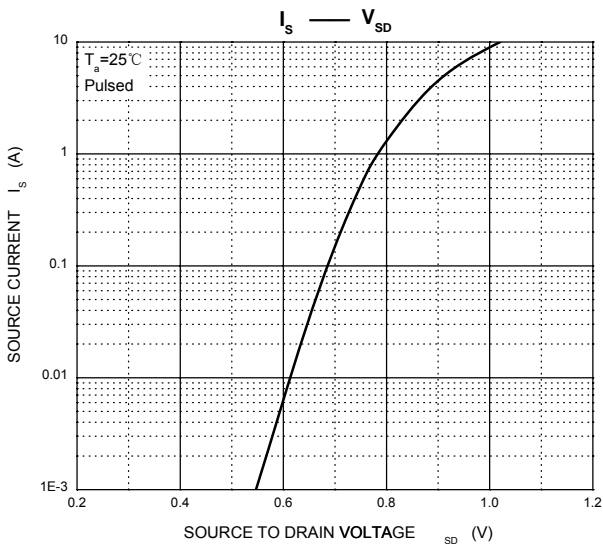
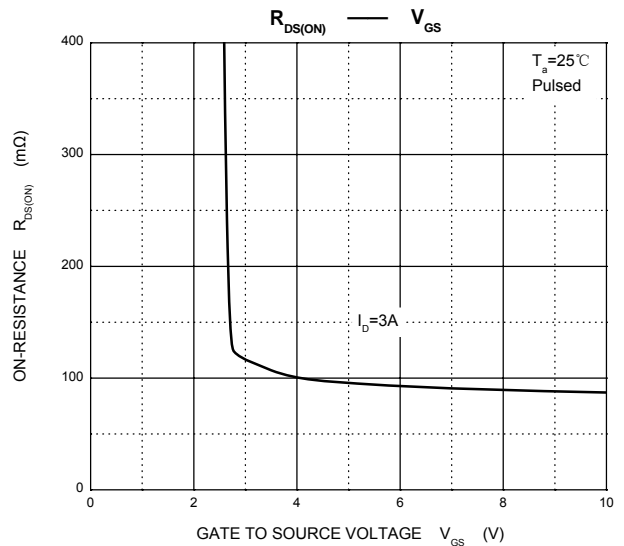
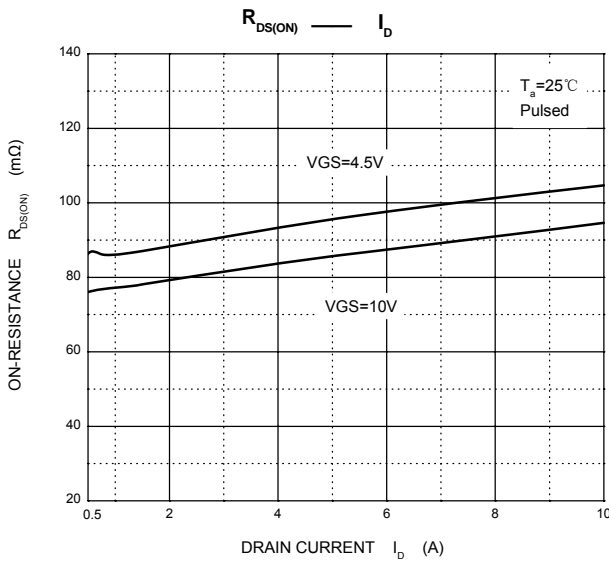
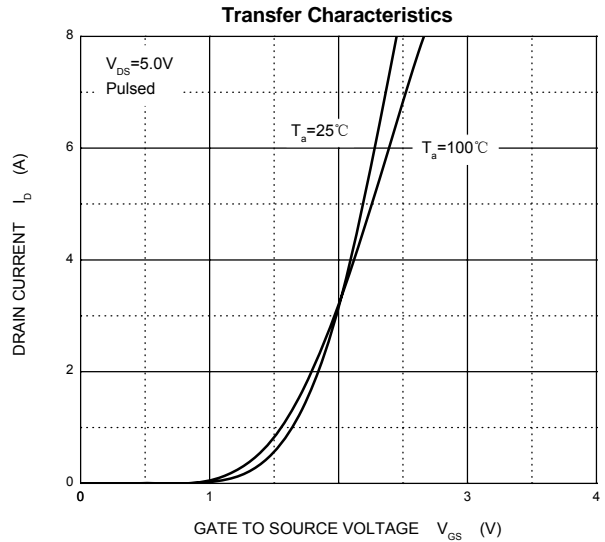
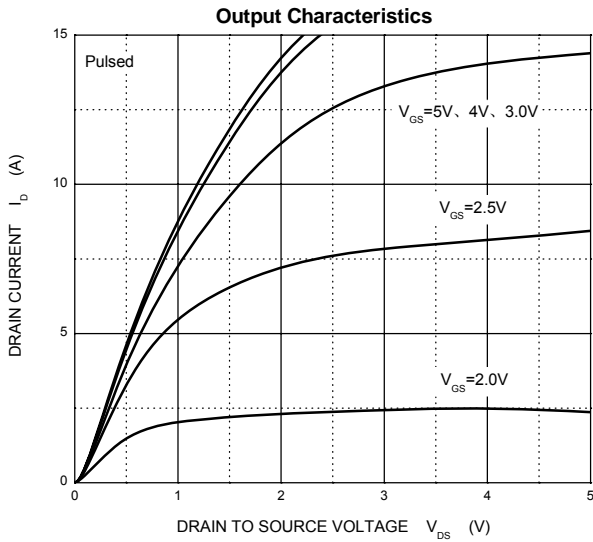
T_a=25 °C unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	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 (note 3)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.5		2	V
Drain-source on-resistance (note 3)	R _{DS(on)}	V _{GS} =10V, I _D =3A			105	mΩ
		V _{GS} =4.5V, I _D =3A			125	mΩ
Forward tranconductance (note 3)	g _{FS}	V _{DS} =15V, I _D =2A	1.4			S
Diode forward voltage (note 3)	V _{SD}	I _S =3A, V _{GS} = 0V			1.2	V
DYNAMIC CHARACTERISTICS (note 4)						
Input Capacitance	C _{iSS}	V _{DS} =30V, V _{GS} =0V, f =1MHz		247		pF
Output Capacitance	C _{oss}			34		pF
Reverse Transfer Capacitance	C _{rSS}			19.5		pF
SWITCHING CHARACTERISTICS (note 4)						
Turn-on delay time	t _{d(on)}	V _{GS} =10V, V _{DD} =30V, I _D =1.5A, R _{GEN} =1Ω		6		ns
Turn-on rise time	t _r			15		ns
Turn-off delay time	t _{d(off)}			15		ns
Turn-off fall time	t _f			10		ns
Total Gate Charge	Q _g	V _{DS} =30V, V _{GS} =4.5V, I _D =3A		6		nC
Gate-Source Charge	Q _{gs}			1		nC
Gate-Drain Charge	Q _{gd}			1.3		nC

Notes :

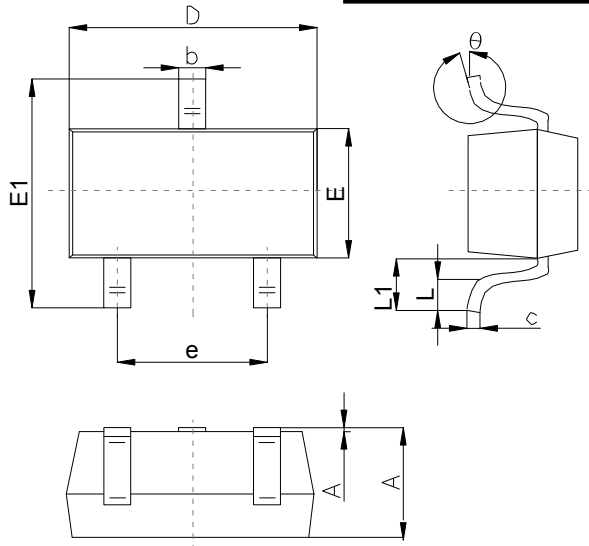
1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , t≤10s.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤0.5%.
4. Guaranteed by design, not subject to producing.

Typical Characteristics



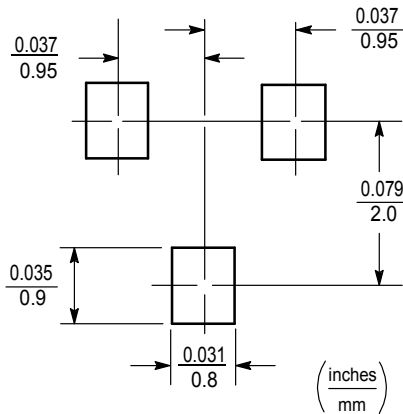
Outline Drawing

SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		
	Min	Typ	Max
A	0.90		1.40
A1	0.00		0.10
b	0.30		0.50
c	0.08		0.20
D	2.80	2.90	3.10
E	1.20		1.60
E1	2.25		2.80
e	1.80	1.90	2.00
L	0.10		0.50
L1	0.4		0.55
θ	0°		10°

Suggested Pad Layout



Note:

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