

SI2310

DATASHEET

Specification Revision History:

Version	Date	Description
V1.0	2021/10	New
V1.1	2023/03	Modify Ordering Information
V1.2	2024/02	Modify Ordering Information
V1.3	2025/05	Add application precautions and overall typesetting.

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.

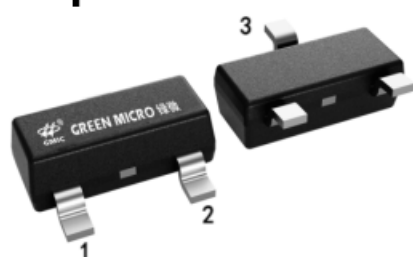
General Features

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

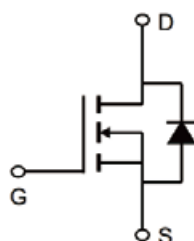
Applications

- ※Battery Switch
- ※DC/DC Converter

Simplified Outline



- 1.GATE
- 2.SOURCE
- 3.DRAIN



SOT-23

Ordering Information

Product Model	Package Type	Marking	Packing	Packing Qty
SI2310-GM	SOT-23	S10	REEL	3000PCS/REEL

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Rating	Units
V _{DS}	Drain-Source Voltage	60	V
V _{GS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current	3	A
I _{DM}	Pulsed Drain Current (note 1)	10	A
P _D	Power Dissipation	0.35	W
R _{θJA}	Thermal Resistance Junction-ambient	357	°C/W
T _J	Operating Junction Temperature Range	150	°C
T _{STG}	Storage Temperature Range	-55~+150	°C

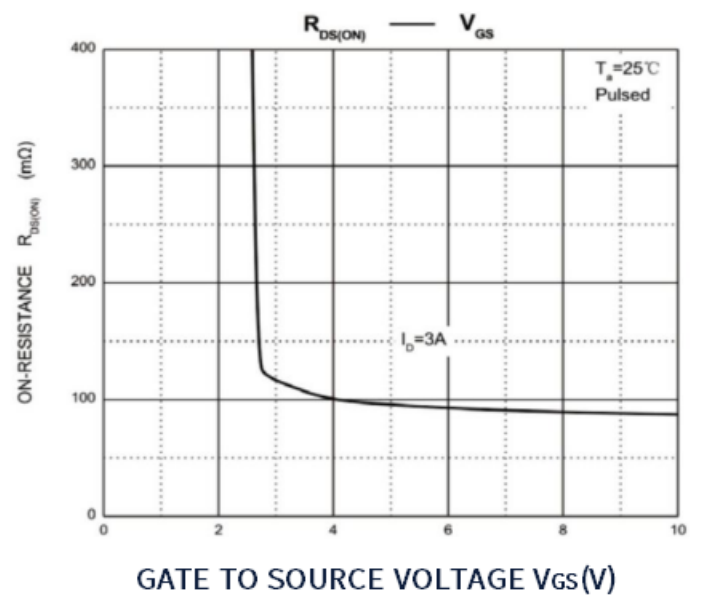
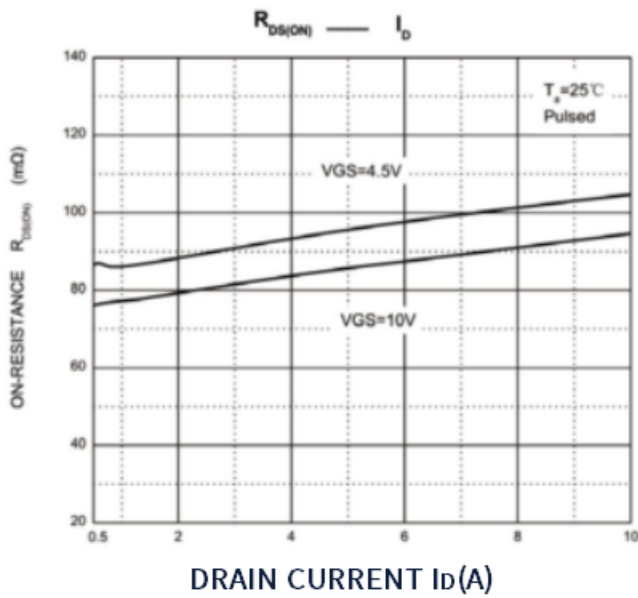
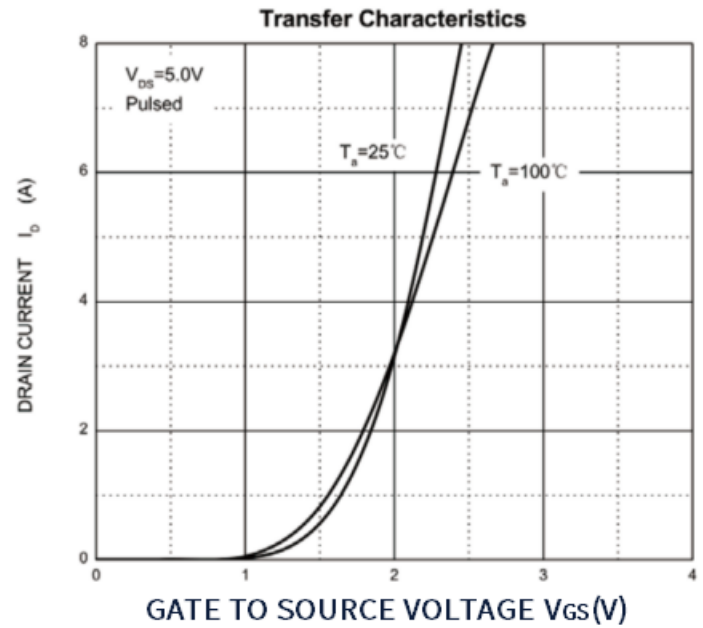
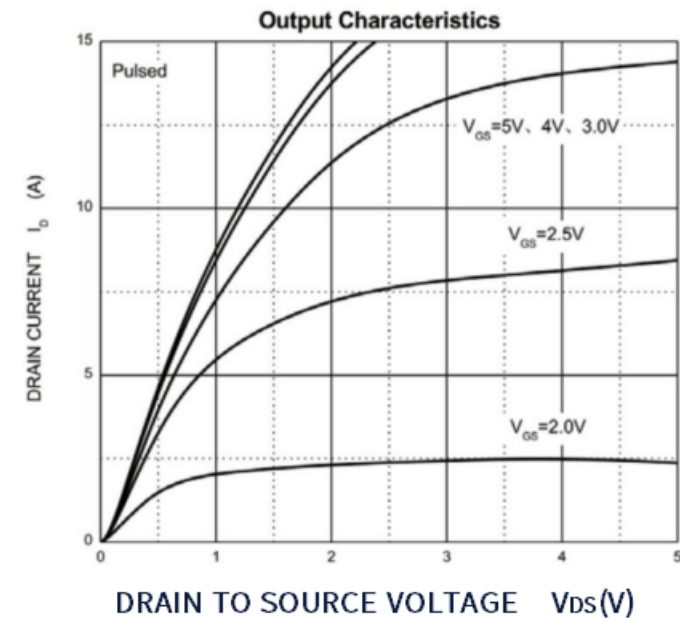
Electrical Characteristics (TA=25°C, unless otherwise noted)

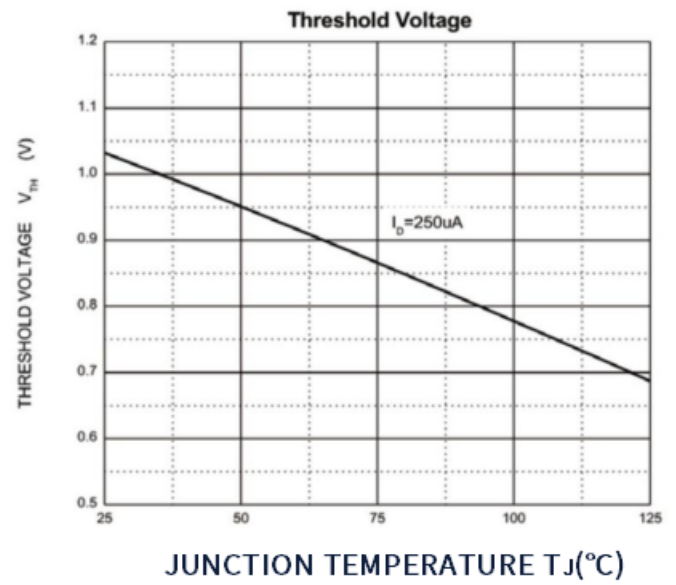
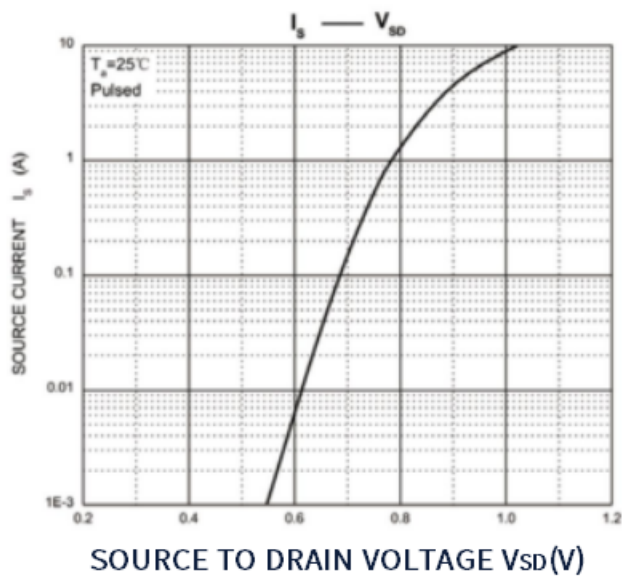
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
STATIC CHARACTERISTICS						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V , I _D =250 μA	60	---	---	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =60V,V _{GS} =0V	---	---	1	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 20V , V _{DS} =0V	---	---	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μA	0.5	---	2	V
R _{DS(ON)}	Static Drain-Source On-Resistance2	V _{GS} =10V , I _D =3A	---	---	85	mΩ
		V _{GS} =4.5V , I _D =3A	---	---	125	
g _{fs}	Forward Transconductance	V _{DS} =15V , I _D =2A	1.4	---	---	S
V _{SD}	Diode Forward Voltage2	I _S =3A,V _{GS} =0V	---	---	1.2	V
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =30V , V _{GS} =0V , f=1MHz	---	247	---	pF
C _{oss}	Output Capacitance		---	34	---	
C _{rss}	Reverse Transfer Capacitance		---	19.5	---	
Q _g	Total Gate Charge (4.5V)	V _{DS} =30V,V _{GS} =4.5V,I _D =3A	---	6	---	nC
Q _{gs}	Gate-Source Charge		---	1	---	
Q _{gd}	Gate-Drain Charge		---	1.3	---	
Switching Characteristics						
T _{d(on)}	Turn-On Delay Time	V _{GS} =10V,V _{DD} =30V, I _D =1.5A,R _{GEN} =1Ω	---	6	---	ns
T _r	Rise Time		---	15	---	
T _{d(off)}	Turn-Off Delay Time		---	15	---	
T _f	Fall Time		---	10	---	

Notes :

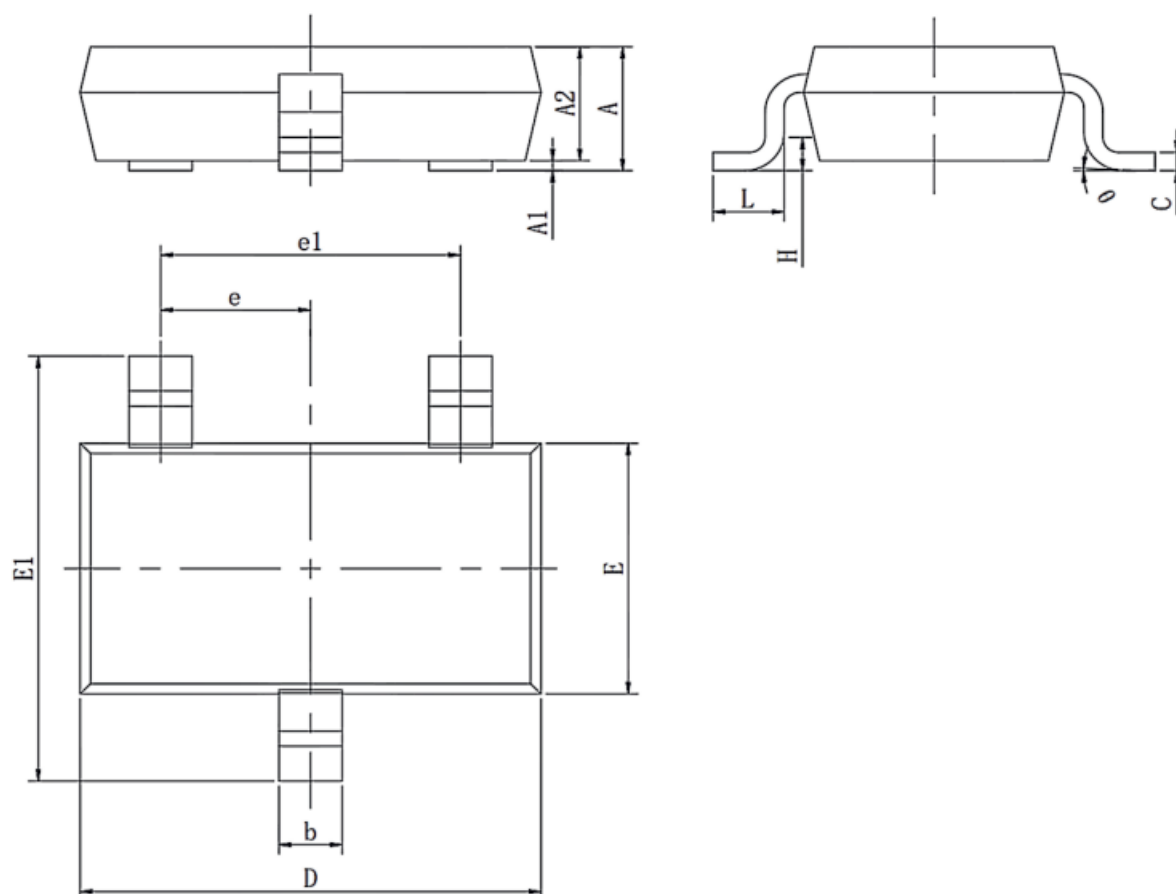
1. Repetitive rating : Pulse width limited by junction temperature.
2. Surface mounted on FR4 board , $t \leq 10s$.
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.
4. Guaranteed by design, not subject to producting.

Typical Characteristics





Outline Dimensions

SOT-23
Unit : mm


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	0.200	0.003	0.008
D	2.800	3.020	0.110	0.119
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.95 (BSC)		0.037(BSC)	
e1	1.90 (BSC)		0.075(BSC)	
L	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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