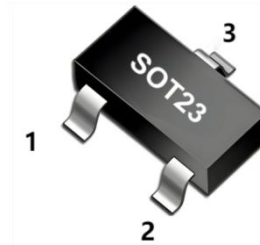


5A, 60V N-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

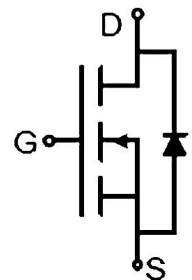
The 2310 uses advanced technology to provide excellent $R_{DS(ON)}$, low gate charge and operation gate voltage as low as 2.5V. This device is suitable for use as a Battery protection or in other switching application.

The 2310 meet the ROHS and Green Product requirement with full function reliability approved.



1. GATE
2. SOURCE
3. DRAIN

Equivalent Circuit



FEATURE

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

APPLICATION

- * Battery Switch
- * DC/DC Converter

ABSOLUTE MAXIMUM RATINGS(TA=25°C, unless otherwise specified.)

SYMBOL	PARAMETER	VALUE	UNIT
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate Source Voltage	±20	V
I_D	Continuous Drain Current	5	A
I_{DM}	Pulsed Drain Current(note 1)	10	A
P_D	Power Dissipation(Note 5)	3.1	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55~150	°C
R_{θJA}	Thermal Resistance From Junction To Ambient(Note 2)	207	°C/W
R_{θJC}	Thermal Resistance From Junction To Case(Note 5)	40	°C/W

Notes: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

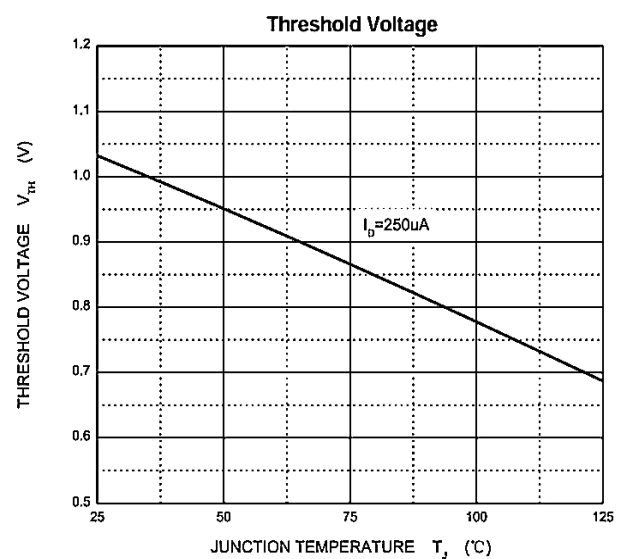
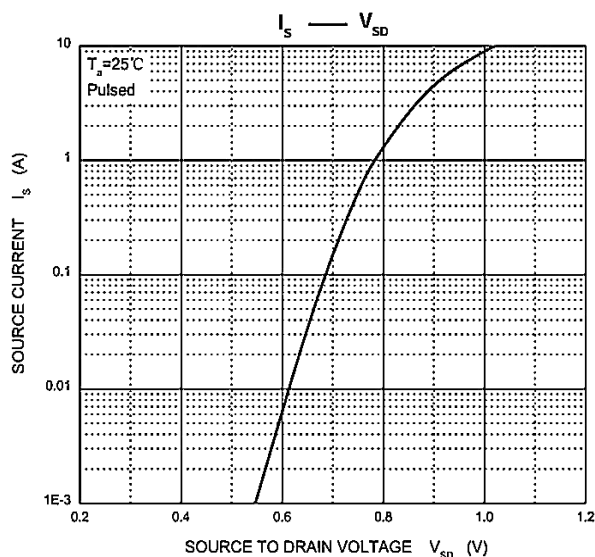
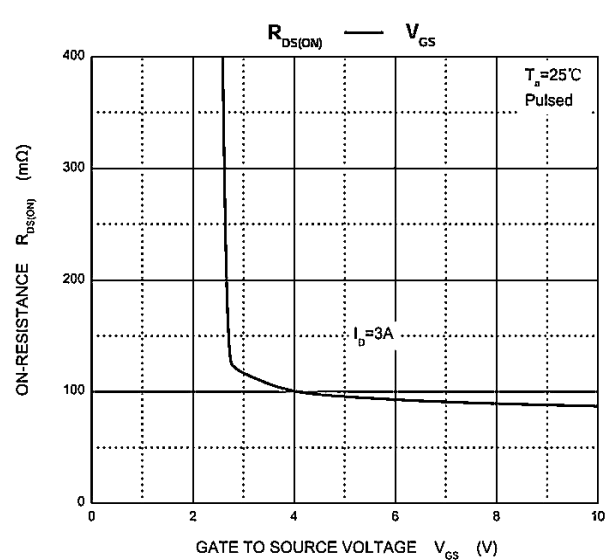
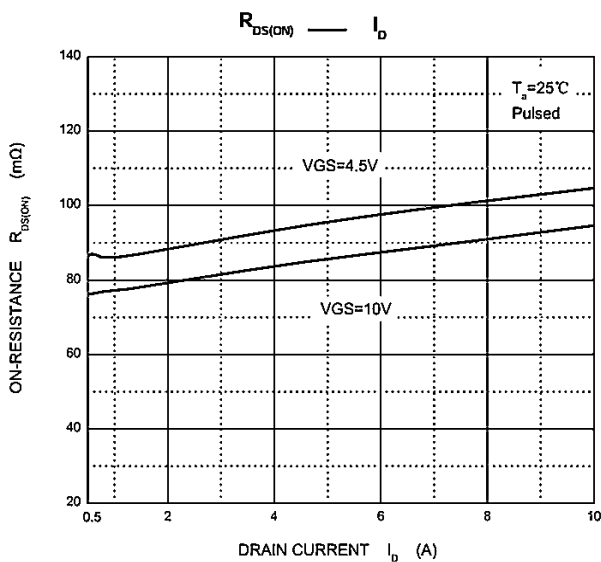
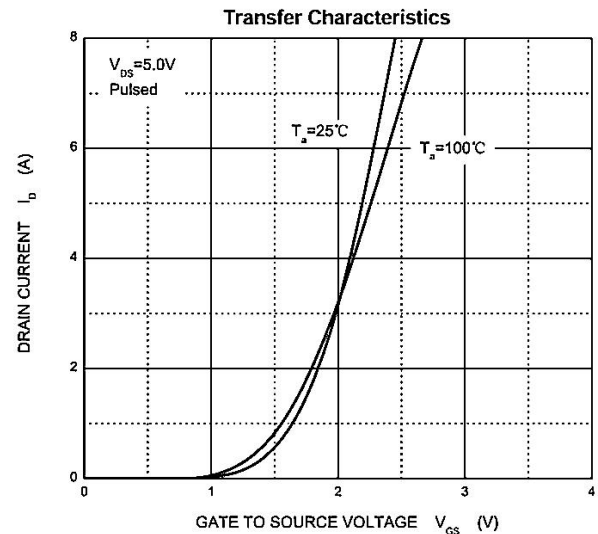
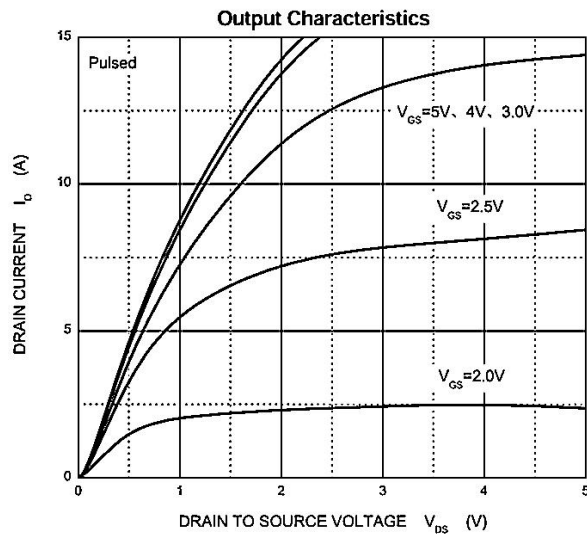
■ ELECTRICAL CHARACTERISTICS (TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	60			V
Gate Threshold Voltage(Note 3)	V _{GS(TH)}	V _{GS} =V _{DS} , I _D =250μA	0.5	1.35	2	V
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
Drain-source on-state resistance(Note 3)	R _{DS(ON)}	V _{GS} =4.5V, I _D =2.5A		70	90	mΩ
		V _{GS} =10V, I _D =2.5A		60	80	
Forward Transconductance(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 _{GS} =0V, V _{DS} =30V, f=1MHz		247		pF
Output Capacitance	C _{OSS}			34		
Reverse Transfer Capacitance	C _{RSS}			19.5		
SWITCHING CHARACTERISTICS (Note 4)						
Total gate charge	Q _g	V _{DS} =30V, V _{GS} =4.5V, I _D =3A		6		nC
Gate-source charge	Q _{gs}			1		
Gate-drain charge	Q _{gd}			1.3		
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V, I _D =1.5A, V _{DD} =30V, R _{GEN} =1Ω		6		ns
Turn-On Rise Time	t _r			15		
Turn-Off Delay Time	t _{d(off)}			15		
Turn-Off Fall Time	t _f			10		

Notes:

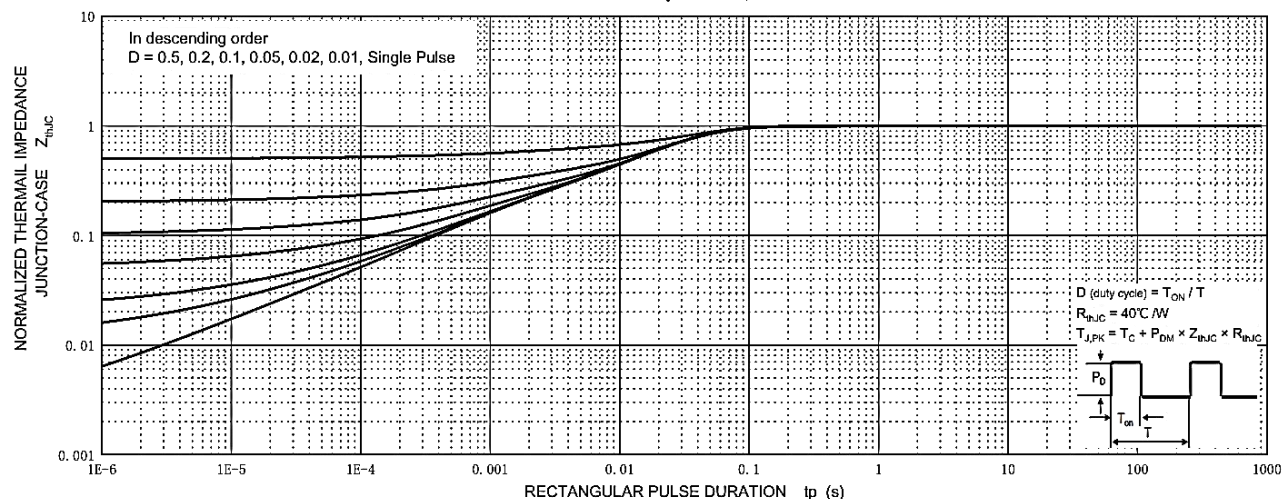
1. Repetitive rating : Pulse width limited by junction temperature.
2. Mounted on 1 in² FR-4 board with 2oz. Copper, single--sided, in a still air environment with TA=25°C.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 0.5%.
4. Guaranteed by design, not subject to production.
5. Tc=25°C

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Con.t)

Transient Thermal Impedance, Junction-Case



Maximum Safe Operating Area

