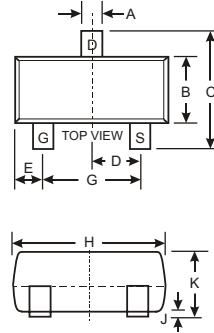
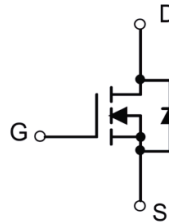


### Features

- Low  $R_{DS(ON)}$ .
- Trench Technology Power MOSFET.
- Low Gate Charge.
- ESD Protected.



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
$\alpha$	0°	8°
All Dimensions in mm		

### APPLICATIONS

- Load switch.
- Marking Code:2300 or S0.

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current <sup>(1,5)</sup>	$I_D$	4.5	A
Pulsed Drain Current <sup>(2)</sup>	$I_{DM}$	18	A
Power Dissipation <sup>(4,5)</sup>	$P_D$	1.4	W
Thermal Resistance from Junction to Ambient <sup>(5)</sup>	$R_{\theta JA}$	89	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

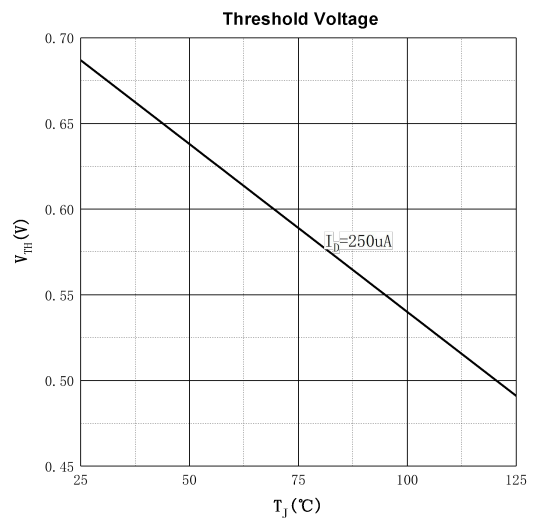
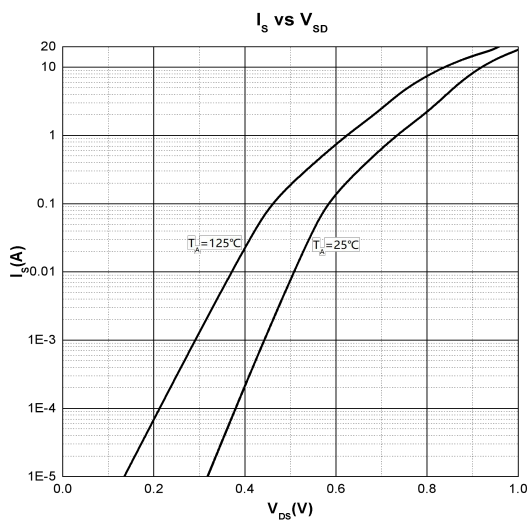
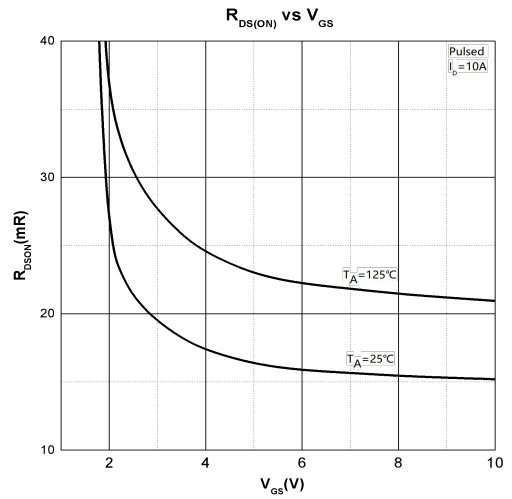
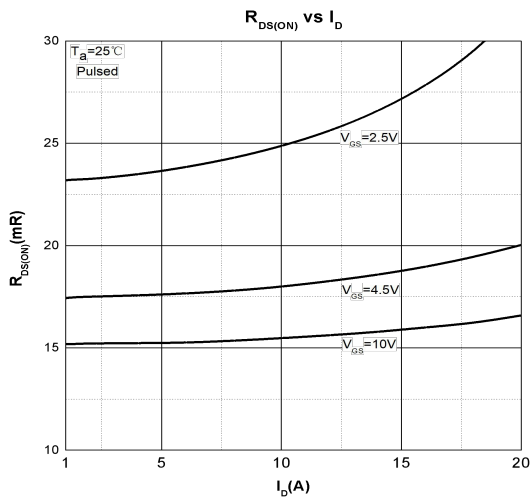
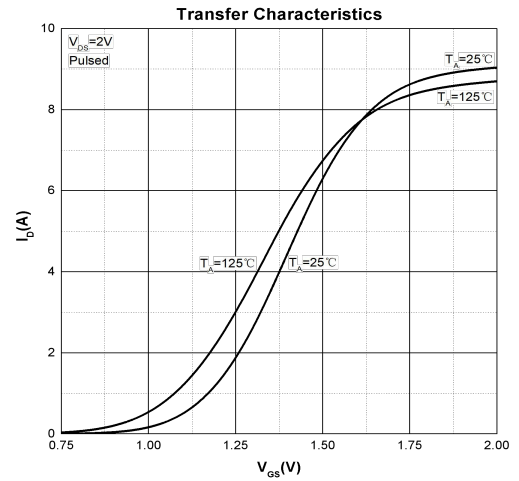
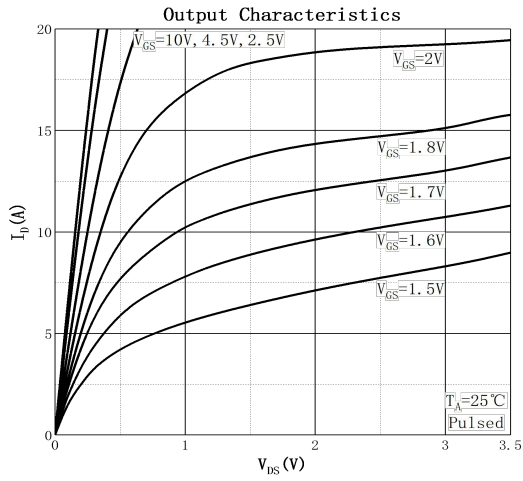
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
<b>Off characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	20			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0V$			1	$\mu A$
Gate-source leakage current	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			$\pm 100$	nA
<b>On characteristics</b>						
Drain-source on-resistance(3)	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3A$		18	32	m $\Omega$
		$V_{GS} = 2.5V, I_D = 2A$		22	40	m $\Omega$
		$V_{GS} = 1.8V, I_D = 2A$		28	62	m $\Omega$
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.4	0.7	1	V
<b>Dynamic characteristics (note 2)</b>						
Input capacitance	$C_{iss}$	$V_{DS} = 10V, f = 1MHz$		336		pF
Output capacitance	$C_{oss}$			78.4		pF
Reverse transfer capacitance	$C_{rss}$			70		pF
<b>Switching characteristics (note 2)</b>						
Total Gate Charge	$Q_g$	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 6A$		6.4	8.2	nC
Gate-source Charge	$Q_{gs}$			1.8	2.3	nC
Gate-drain Charge	$Q_{gd}$			1.3	1.9	nC
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 4.5V, I_D = 6A, R_{GEN} = 6\Omega$		10.5	21	ns
Turn-on rise time	$t_r$			4.5	9	ns
Turn-off delay time	$t_{d(off)}$			27.5	55	ns
Turn-off fall Time	$t_f$			4.3	8.6	ns
<b>Drain-source diode characteristics and maximum ratings</b>						
Diode forward voltage (3)	$V_{SD}$	$I_S = 1.7A, V_{GS} = 0V$			1.2	V

**Note :**

- 1.The maximum current rating is limited by package.
- 2.Pulse Test: PulseWidth 10 $\mu s$ ,dutycycle 1%.
- 3.Pulse Test: PulseWidth 300 $\mu s$ ,dutycycle 2%.
- 4.The power dissipation PD is limited by  $T_{J(MAX)} = 150^\circ\text{C}$ .
- 5.Device mounted on 1in<sup>2</sup>FR-4board with 2oz.Copper,in a still air environment with  $T_A = 25^\circ\text{C}$ .



### TYPICAL TRANSIENT CHARACTERISTICS



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## **IMPORTANT NOTICE**

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