Langxintong

FS2302

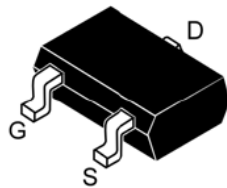## N-Channel Enhancement Mode MOSFET

- **Features**

20V/3A ,

$R_{DS(ON)}$=30mΩ(typ.) @ V_{GS}=10V

$R_{DS(ON)}$=35mΩ(typ.) @ V_{GS}=4.5V

$R_{DS(ON)}$=45mΩ(typ.) @ V_{GS}=2.5V

Super High Dense Cell Design

Reliable and Rugged

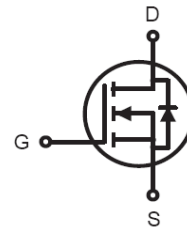Lead Free Available (RoHS Compliant)

- **General Description**

Power Management in Notebook Computer ,

Portable Equipment and Battery Powered Systems.

- **Pin Configuration**

SOT23

- **Absolute Maximum Ratings** @ T_A = 25°C unless otherwise specified

| Symbol	Parameter		Rating	Unit
V_{DSS}	Drain-Source Voltage		20	V
V_{GSS}	Gate-Source Voltage		±8	
I_D	Continuous Drain Current	V_{GS}=10V	3	A
I_{DM}	300μs Pulsed Drain Current		20	
I_S	Diode Continuous Forward Current		1	A
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	
P_D	Maximum Power Dissipation	T_A=25°C	0.83	W
		T_A=100°C	0.3	
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient		150	°C/W

Notes：

mounted on a 1in^2 FR-4 board with 2oz. Copper in a still air environment at 25°C， the current rating is based on the DC
（<10s） test conditions , for each single die. Pulse Test：Pulse Width < 300 μS, Duty Cycle < 2%.

● **Electrical Characteristics** @ T_A = 25°C unless otherwise specified

Symbol	Parameter	Test Condition		Min.	Typ.	Max.	Unit
		Static Characteristics					
B_{VDSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_{DS}=250μA		20			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=20V, V_{GS}=0V	25°C			1	μA
			80°C			30	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_{DS}=250μA		0.5	0.7	1	V
I_{GSS}	Gate Leakage Current	V_{GS}=±12V, V_{DS}=0V				±100	nA
$R_{DS(ON)}$	Drain-Source On-state Resistance	V_{GS}=10V, I_{DS}=3A			30		mΩ
		V_{GS}=4.5V, I_{DS}=3A			35		
		V_{GS}=2.5V, I_{DS}=2A			45		
V_{SD}	Diode Forward Voltage	I_{SD}=1.25A, V_{GS}=0V			0.7	1.3	V
		Gate Charge Characteristics					
Q_g	Total Gate Charge	V_{DS}=10V, V_{GS}=4.5V, I_{DS}=6A			5	10	nC
Q_{gs}	Gate-Source Charge				1		
Q_{gd}	Gate-Drain Charge				1.1		
		Dynamic Characteristics					
R_G	Gate Resistance	V_{GS}=0V,V_{DS}=0V,F=1MHz			6		Ω
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=15V, Frequency=1.0MHz			420		pF
C_{oss}	Output Capacitance				100		
C_{rss}	Reverse Transfer Capacitance				60		
$t_{d(ON)}$	Turn-on Delay Time	V_{DD}=10V, R_L=10Ω, I_{DS}=1A, V_{GEN}=4.5V, R_G=6Ω			8	15	ns
T_r	Turn-on Rise Time				6	12	
$t_{d(OFF)}$	Turn-off Delay Time				19	35	
T_f	Turn-off Fall Time				7	23	

NOTE:

1、mounted on a 1in2 FR-4 board with 2oz. Copper in a still air environment at 25°C， the current rating is based on the DC （<10s） test conditions

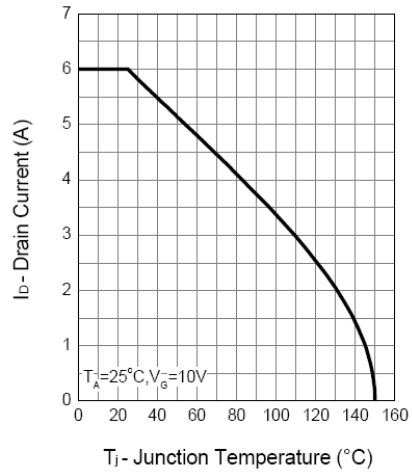2、Pulse test ; pulse width≤300μs, duty cycle≤2%.
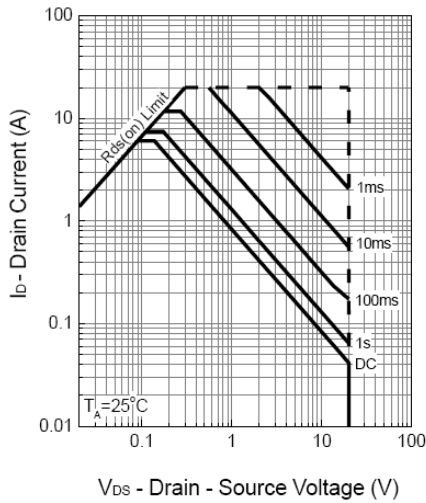
FS2302

● **Typical Performance Characteristics**
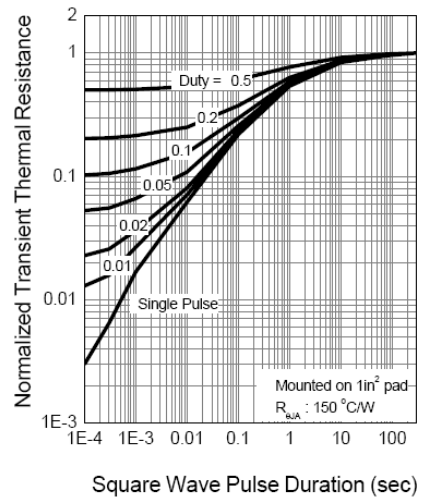
Power Dissipation
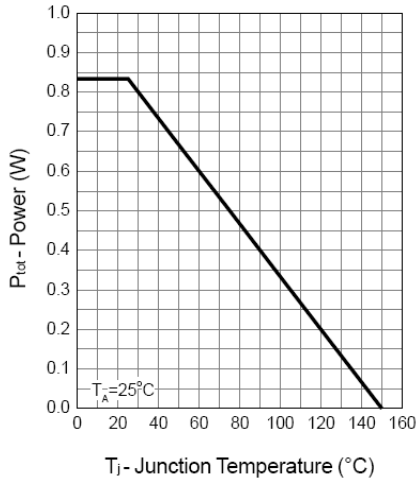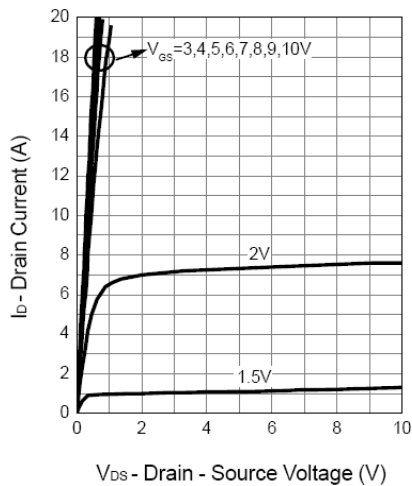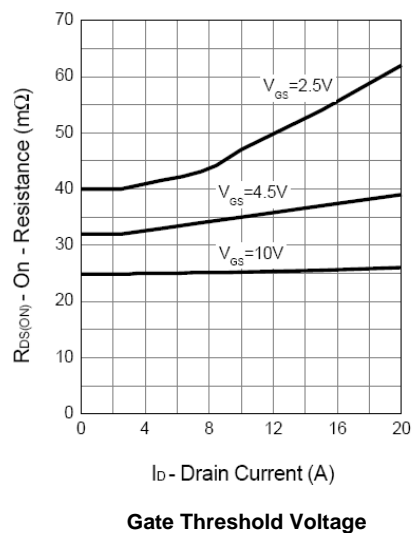

Drain Current

Safe Operation Area

Thermal Transient Impedance

Output Characteristics

Drain-Source On Resistance

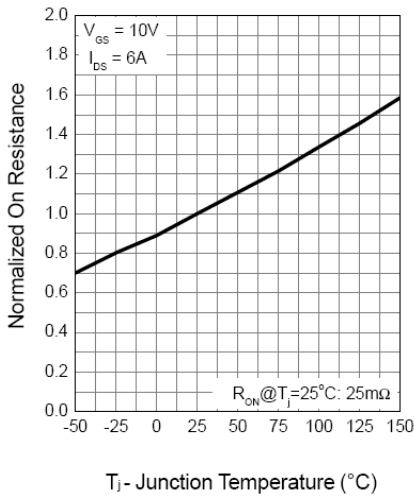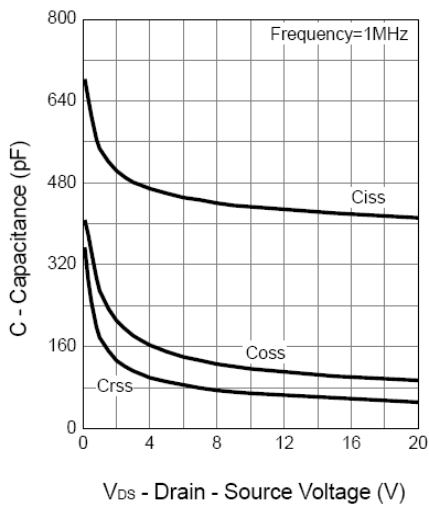
Transfer Characteristics

Gate Threshold Voltage

Drain-Source On Resistance
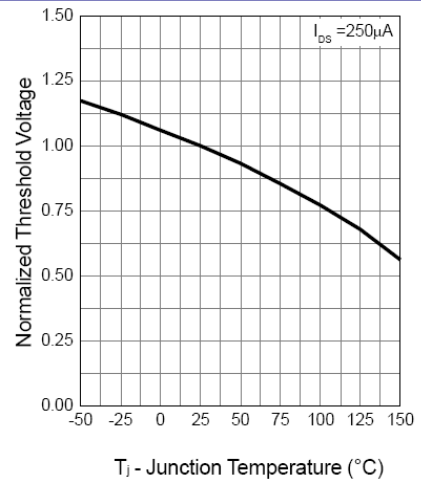
Source-Drain Diode Forward

Capacitance

Gate Charge