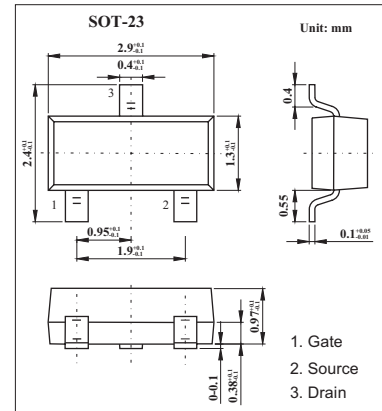




N-Channel Enhancement Mode Field Effect Transistor TF2300

■ Features

- $V_{DS}=20V, R_{DS(ON)}=30m\Omega$ @ $V_{GS}=10V, I_D=6.0A$
- $V_{DS}=20V, R_{DS(ON)}=40m\Omega$ @ $V_{GS}=4.5V, I_D=3.0A$
- $V_{DS}=20V, R_{DS(ON)}=55m\Omega$ @ $V_{GS}=2.5V, I_D=2.0A$



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 10	V
Drain-Current -Continuous * $T_J=125^\circ C$ -Pulsed	I_D	6.0	A
	I_{DM}	20	A
Power Dissipation *	P_D	1.25	W
Thermal Resistance, Junction- to-Ambient	R_{thJA}	100	$^\circ C/W$
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ C$

* Surface Mounted on FR 4 Board , $t \leq 10$ sec.



Shenzhen Tuofeng Semiconductor Technology Co., Ltd

N-Channel Enhancement Mode Field Effect Transistor

TF2300

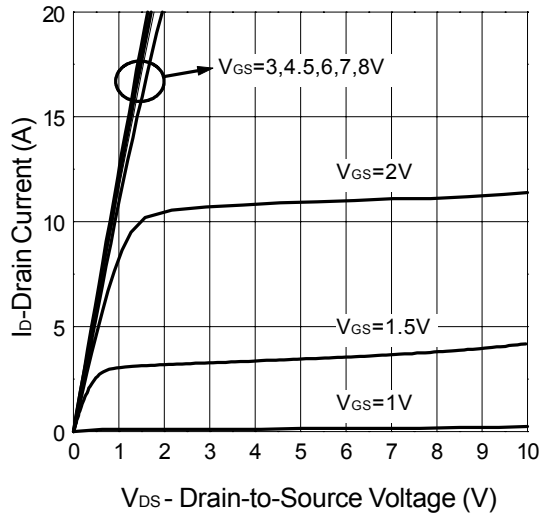
■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	V _{GS} =0V, I _D =250uA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =16V, V _{GS} =0V			1	uA
Gate-Body Leakage	I _{GSS}	V _{GS} =±10V, V _{DS} =0V			±100	nA
Gate Threshold Voltage *	V _{GS(th)}	V _{GS} =V _{DS} , I _D =250uA	0.5	0.78	1.0	V
Drain- Source on-state Resistance *	R _{DS(on)}	V _{GS} =10.0V, I _D =6.0A		28	30	m Ω
		V _{GS} =2.5V, I _D =3.0A		38	40	m Ω
		V _{GS} =1.8V, I _D =2.0A		52	55	m Ω
On-State Drain Current *	I _{D(on)}	V _{DS} =5V, V _{GS} =4.5V	5			A
Forward Transconductance *	g _{FS}	V _{DS} =15V, I _D =6A	30			S
Input Capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f =1.0MHZ		888		pF
Output Capacitance	C _{oss}			144		pF
Reverse Transfer Capacitance	C _{rss}			115		pF
Turn-On Delay Time	t _{D(on)}	V _{DD} =10V, I _D =1A, V _{GS} =4.5V, R _L =10 Ω, R _{GEN} =6 Ω		31.8		ns
Rise Time	t _r			14.5		ns
Turn-Off Delay Time	t _{D(off)}			50.3		ns
Fall Time	t _f			31.9		ns
Total Gate Charge	Q _g	V _{DS} = 10V, I _D = 3.5A, V _{GS} = 4.5V		16.8		nC
Gate-Source Charge	Q _{gs}			2.5		nC
Gate-Drain Charge	Q _{gd}			5.4		nC
Drain-Source Diode Forward Current *	I _S				1.25	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =1.25A		0.825	1.3	V

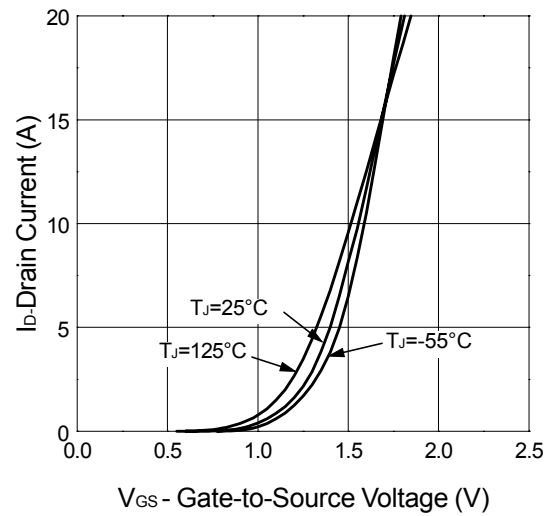
* Pulse Test:Pulse Width≤300 μ, Duty Cycle≤2%

Typical Characteristics

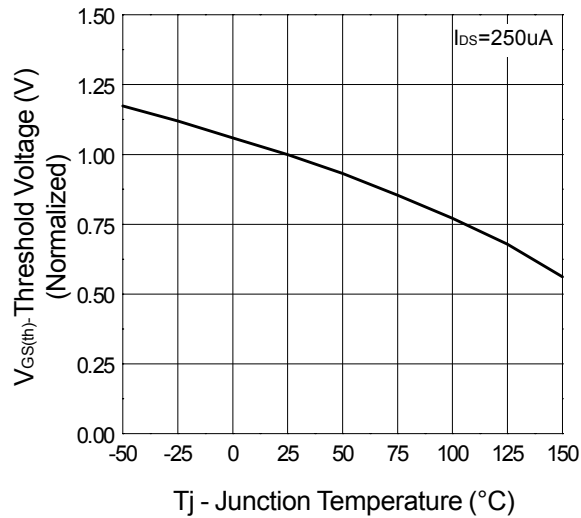
Output Characteristics



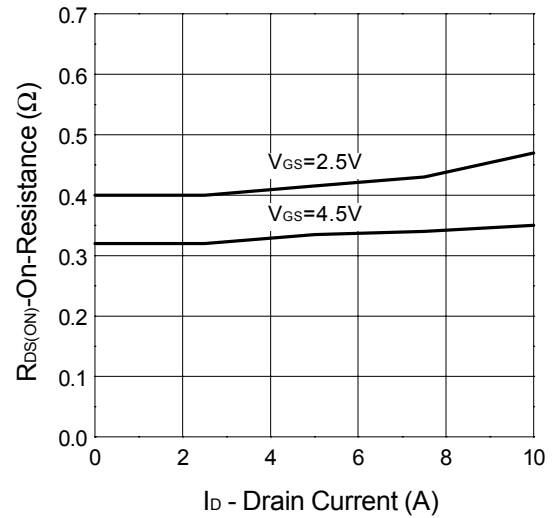
Transfer Characteristics



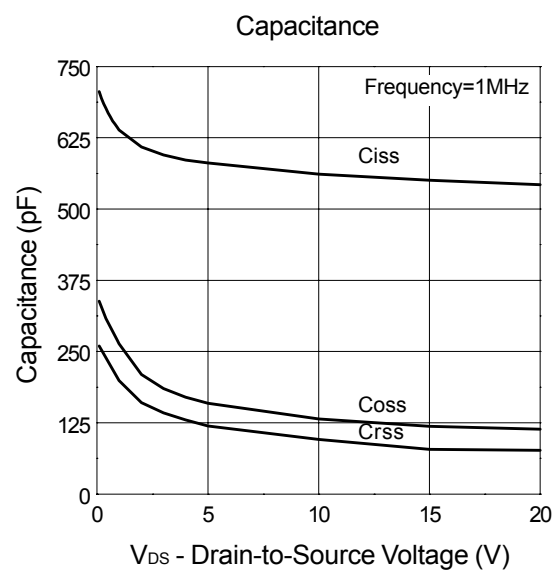
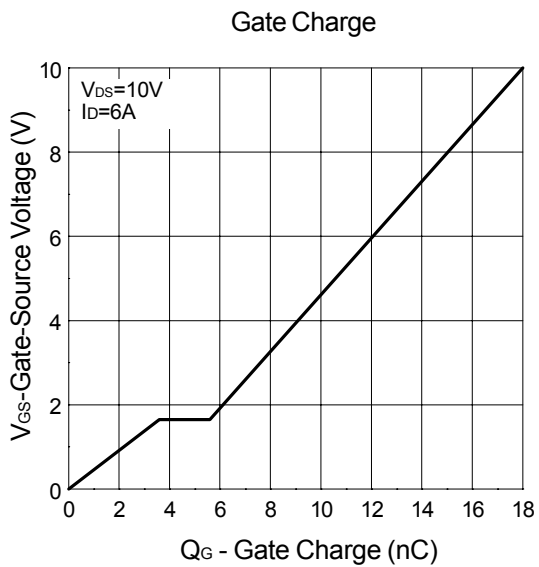
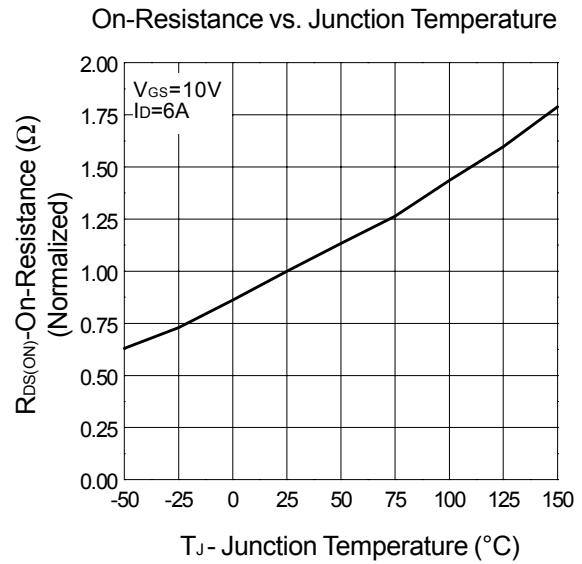
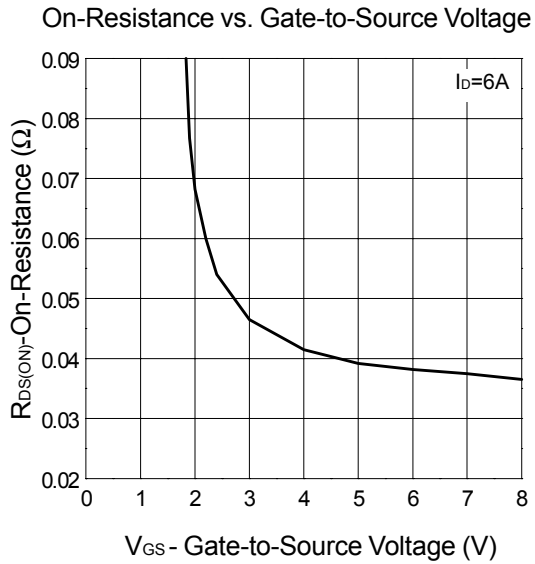
Threshold Voltage vs. Junction Temperature



On-Resistance vs. Drain Current



Typical Characteristics (Cont.)



Typical Characteristics (Cont.)

