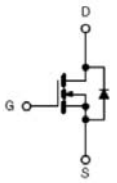
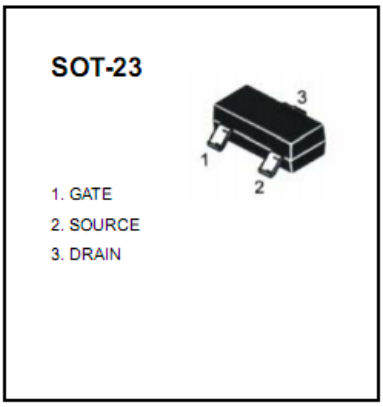
FH2300

N-Channel Enhancement Mode Field Effect Transistor

FEATURES

TrenchFET Power MOSFET





MARKING: 2300

MAXIMUM RATINGS (TA=25℃ unless otherwise noted)

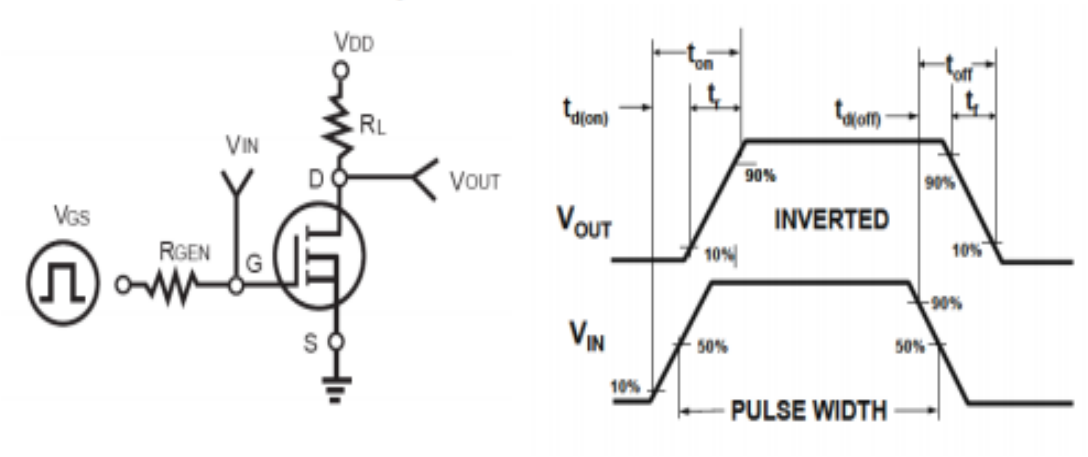
Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	20	V
V_{GS}	Gate-Source voltage	±12	V
I_D	Drain current	2.5	A
P_D	Power Dissipation	0.9	W
Tj	Junction Temperature	150	℃
Tstg	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	20			V
Gate-Threshold Voltage	$V_{th(GS)}$	V_{DS}= V_{GS}, I_D=250 uA	0.5	0.75	1.2	V
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	uA
Drain-Source On-Resistance	$r_{DS(ON)}$	V_{GS}=2.5V, I_D=2A		58	82	mΩ
		V_{GS}=4.5V, I_D=2.5A		43	59	mΩ
Forward Trans conductance	gfs	V_{DS}=5V, I_D=2.9A		9.5		s
Dynamic Characteristics						
Input Capacitance	Ciss	V_{DS}=10V, V_{GS}=0V, f=1MHz		280		pF
Output Capacitance	Coss			60		
Reverse Transfer Capacitance	Crss			40		
Switching Capacitance						
Turn-on Delay Time	td(on)	V_{DD}=10V, I_D=2.5A, V_{GS}=4.5V R_{GEN}=2.8Ω		6		nS
Turn-on Rise Time	t_r			5		nS
Turn-off Delay Time	td(off)			9		nS
Turn-off Fall Time	t_f			1.5		nS
Total Gate Charge	Q_g	V_{DS}=10V, I_D=2.5A, V_{GS}=4.5V,		1.7		nC
Gate-Source Charge	Q_{gs}			0.3		nC
Gate-Drain Charge	Q_{gd}			0.8		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=2.5A			1.2	V
Diode Forward Current	Is				2.5	A

Typical Characteristics

Switch Time Test Circuit and Switching Waveforms:



TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS (Curves)

Figure1. Power Dissipation

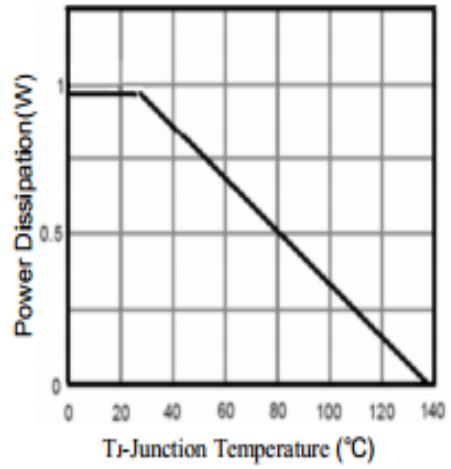


Figure2. Drain Current

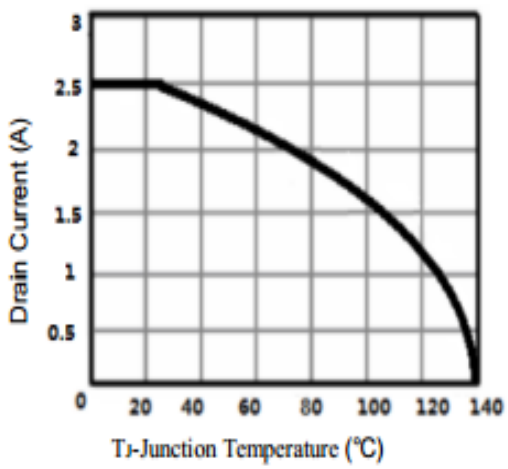


Figure3. Output Characteristics

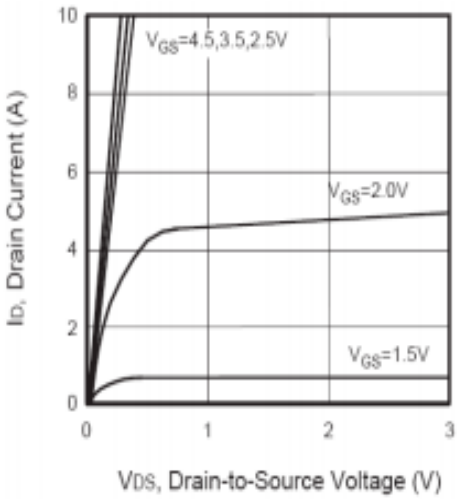
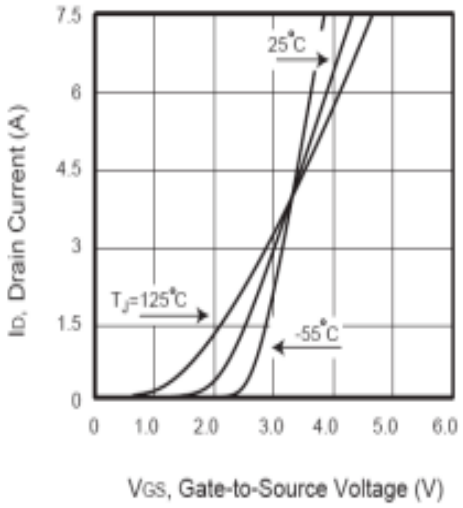
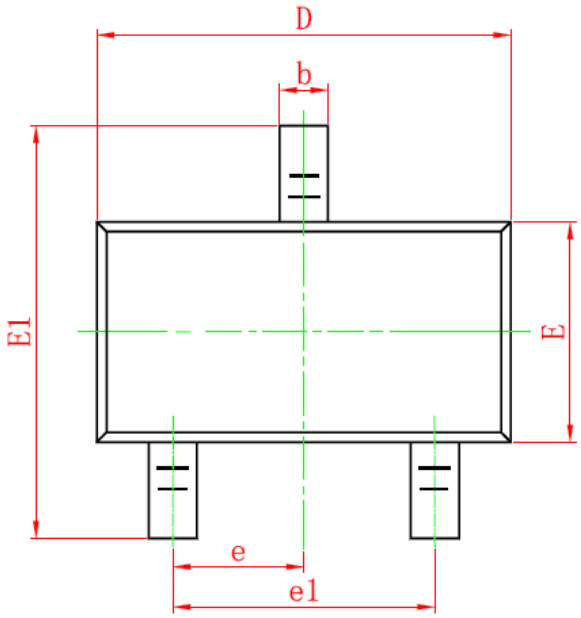
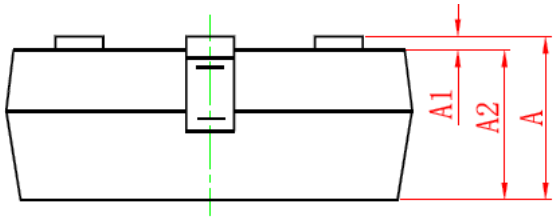


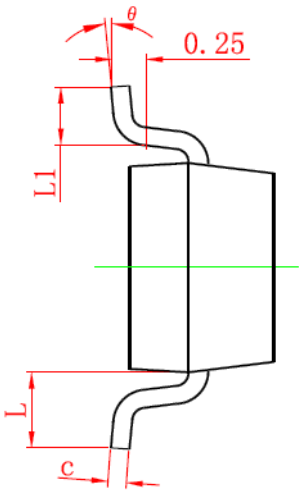
Figure4. Transfer Characteristics



SOT-23 PACKAGE INFORMATION







Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500