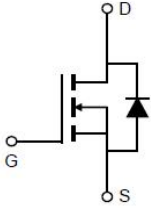
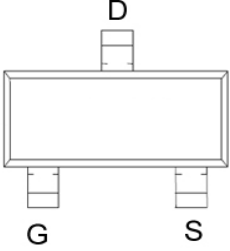
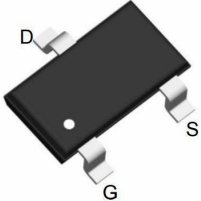


FH2314

N-Channel Enhancement Mode MOSFET

<p>Description</p> <ul style="list-style-type: none"> ◆ Trench Power LV MOSFET technology ◆ High Power and current handing capability <p>Application</p> <ul style="list-style-type: none"> ◆ PWM application ◆ Load switch 	<p>General Features</p> <ul style="list-style-type: none"> ◆ $V_{DS} = 20V$, $I_D = 6.8A$ $R_{DS(ON)(Max.)} = 18m\Omega$ @ $V_{GS} = 4.5V$ $R_{DS(ON)(Max.)} = 22m\Omega$ @ $V_{GS} = 2.5V$ $R_{DS(ON)(Max.)} = 39m\Omega$ @ $V_{GS} = 1.8V$
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Schematic diagram</p> </div> <div style="text-align: center;">  <p>Marking and Pin Assignment</p> </div> <div style="text-align: center;">  <p>SOT-23 top view</p> </div> </div>	

Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	20	V
Gate-source Voltage	V_{GS}	± 10	V
Drain Current	I_D	$T_A = 25^\circ C$ @ Steady State	6.8
		$T_A = 70^\circ C$ @ Steady State	5.4
Pulsed Drain Current ^A	I_{DM}	27	A
Total Power Dissipation @ $T_A = 25^\circ C$	P_D	1.2	W
Thermal Resistance Junction-to-Ambient @ Steady State ^B	$R_{\theta JA}$	104	$^\circ C/W$
Junction and Storage Temperature Range	T_J, T_{STG}	$-55 \sim +150$	$^\circ C$

Electrical Characteristics (TA=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V, T_C=25^\circ C$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.45	0.62	1.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=6.8A$		13.5	18	m Ω
		$V_{GS}=2.5V, I_D=3.0A$		17	22	
		$V_{GS}=1.8V, I_D=2.5A$		27	39	
Diode Forward Voltage	V_{SD}	$I_S=6.8A, V_{GS}=0V$			1.2	V
Maximum Body-Diode Continuous Current	I_S				6.8	A
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0V, f=1MHz$		900		pF
Output Capacitance	C_{oss}			165		
Reverse Transfer Capacitance	C_{rss}			75		
Switching Parameters						
Total Gate Charge	Q_g	$V_{GS}=4.5V, V_{DS}=10V, I_D=6.8A$		9.2		nC
Gate Source Charge	Q_{gs}			1.7		
Gate Drain Charge	Q_{gd}			2.9		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=4.5V, V_{DD}=10V, R_L=1.5\Omega, R_{GEN}=3\Omega$		12		ns
Turn-on Rise Time	t_r			52		
Turn-off Delay Time	$t_{D(off)}$			17		
Turn-off Fall Time	t_f			10		

A. Pulse Test: Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Typical Performance Characteristics

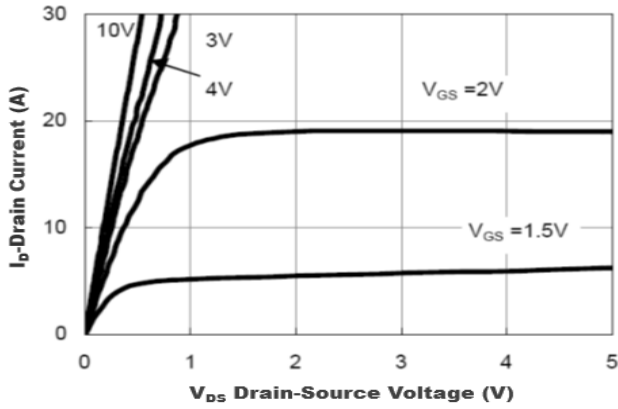


Figure1. Output Characteristics

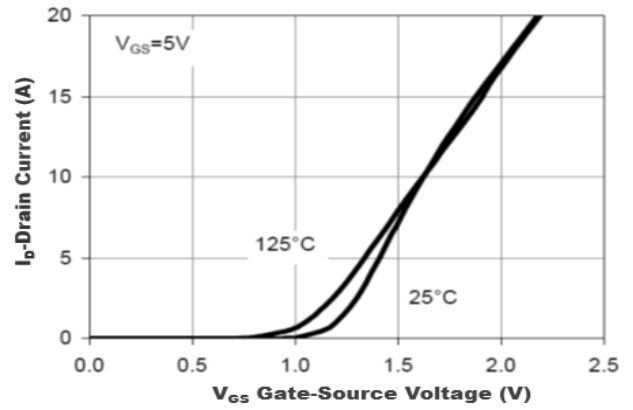


Figure2. Transfer Characteristics

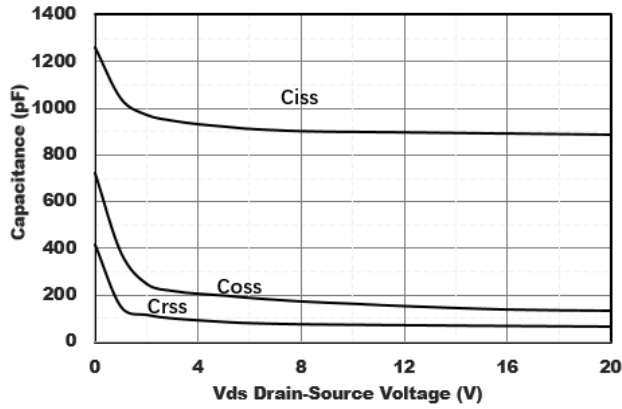


Figure3. Capacitance Characteristics

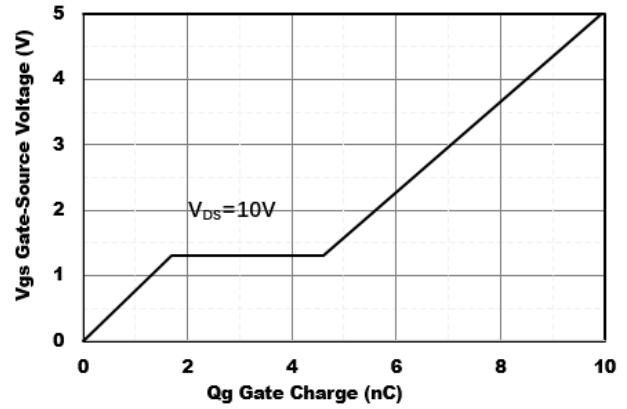


Figure4. Gate Charge

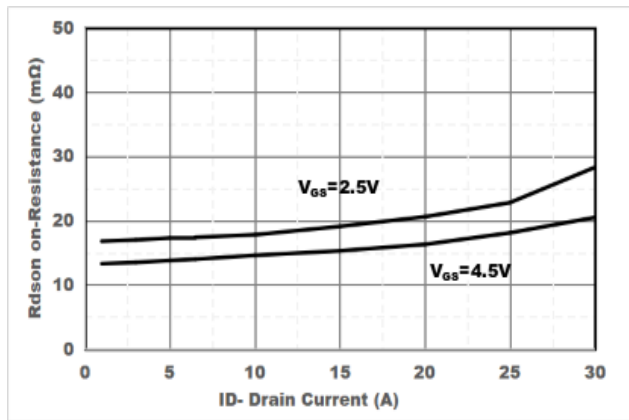


Figure5. Drain-Source on Resistance

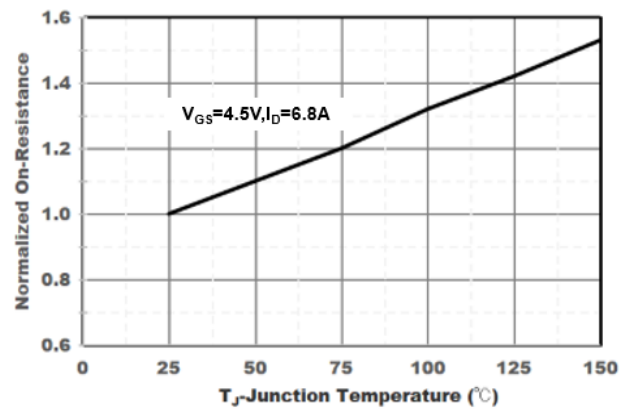


Figure6. Drain-Source on Resistance

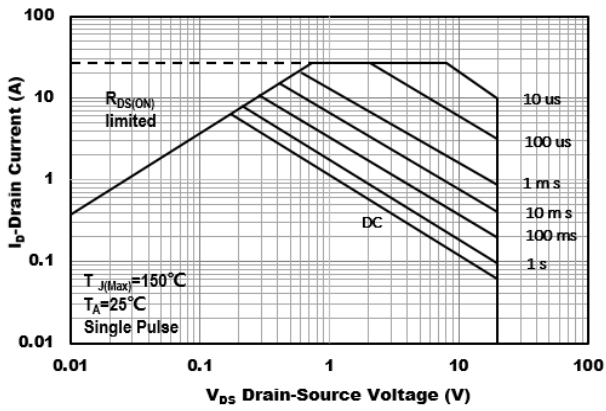


Figure7. Safe Operation Area

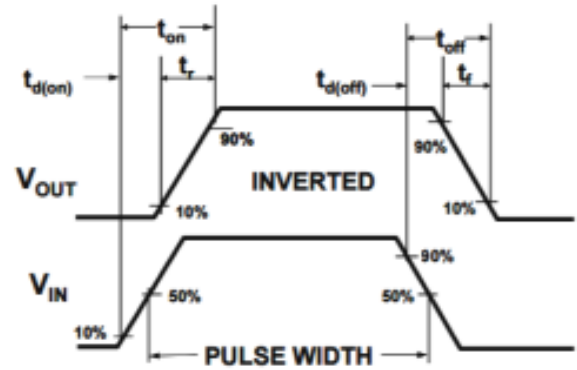
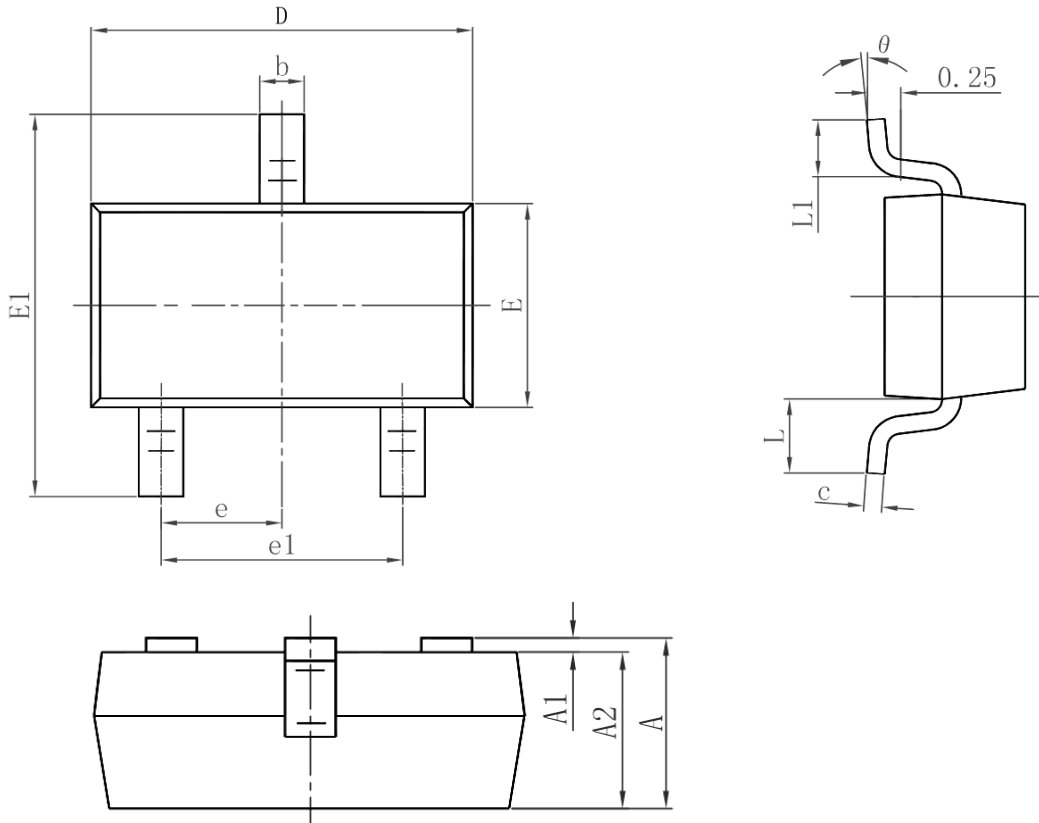


Figure8. Switching wave

Package Information : SOT-23



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°