FH2301-2.5A

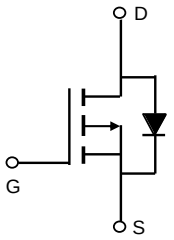
P-Channel Enhancement Mode MOSFET

Application

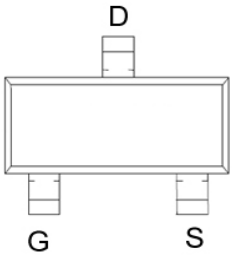
- PWM applications
- Load switch
- Power management

General Features

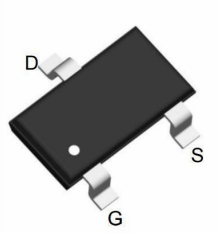
- V_{DS} =-20V，I_D =-2.5A
  $R_{DS(ON)}$(Max.)≤130 mΩ @V_{GS} = 4.5V
  $R_{DS(ON)}$(Max.)≤150 mΩ @V_{GS} = 2.5V



Schematic diagram



Marking and Pin Assignment



SOT-23 top view

Absolute 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	-0.4	-0.7	-1	V
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±12V			±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}=-4.5V, I_D=-2.5A		95	130	mΩ
		V_{GS}=-2.5V, I_D=-1A		100	150	mΩ
Dynamic Characteristics						
Input Capacitance	Ciss	V_{DS}=-10V, V_{GS}=0V, f=1MHz		325		pF
Output Capacitance	Coss			55		
Reverse Transfer Capacitance	Crss			35		
Switching Capacitance						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=-10V, I_D=-1A, V_{GS}=-4.5V R_{GEN}=-60ohm R_L=10ohm		10		nS
Turn-on Rise Time	t_r			6		nS
Turn-off Delay Time	$t_{d(off)}$			22		nS
Turn-off Fall Time	t_f			8		nS
Total Gate Charge	Q_g	V_{DS}=-10V, I_D=-1A, V_{GS}=-4.5V,		3		nC
Gate-Source Charge	Q_{gs}			0.7		nC
Gate-Drain Charge	Q_{gd}			0.8		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_D=-1.25A			-1.2	V
Diode Forward Current	Is				-2.5	A