

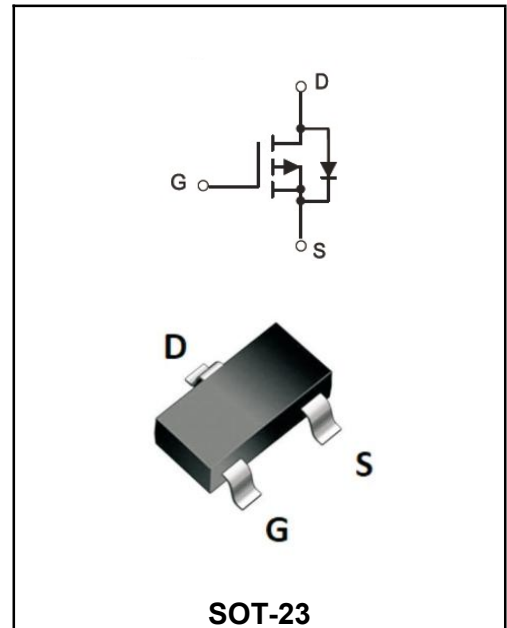
-60V P-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	-2A
V_{DSS}	-60V
R_{DS(on)}-typ(@V_{GS}=-10V)	< 190mΩ (Typ:145 mΩ)
R_{DS(on)}-typ(@V_{GS}=-4.5V)	< 240mΩ (Typ:172 mΩ)

DESCRIPTION

The YFW2309 uses advanced trench technology to provide excellent R_{DS(on)}. This device is suitable for use as a uni-directional or bi-directional load switch.



Marking Code

YFW2309

S9

Maximum ratings (Ta=25°C unless otherwise noted)

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	-60	V
Gate - Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-2	A
Pulsed Drain Current	I_{DM}	-8	A
Total Power Dissipation ⁴	P_D	1.56	W
Thermal Resistance from Junction to Ambient ⁴	R_{θJA}	80	°C/W
Operating Junction Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

MOSFET ELECTRICAL CHARACTERISTICS

Ta=25℃ unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	BV_{DSS}	-60	-	-	V
Zero gate voltage drain current	$V_{DS}=-60V, V_{GS}=0V, T_J=25^\circ C$	I_{DSS}			-1	μA
	$V_{DS}=-60V, V_{GS}=0V, T_J=125^\circ C$				-1	μA
Gate-source leakage current	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	-	± 100	nA
Static Drain-Source On-Resistance ²	$V_{GS}=-10V, I_D=-2A$	$R_{DS(ON)}$	-	145	190	mΩ
	$V_{GS}=-4.5V, I_D=-1.5A$		-	172	240	
Forward transconductance	$V_{DS}=-10V, I_D=-2A$	g_{FS}	-	3.5	-	S
Gate -Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	$V_{GS(th)}$	-1.2	-1.5	-2.5	V
Input Capacitance	$V_{DS}=-30V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}	-	425	615	pF
Output Capacitance		C_{oss}	-	35	50	
Reverse Transfer Capacitance		C_{rss}	-	20	30	
Gate resistance	$V_{GS}=0V, V_{DS}=0V, f=1MHz$	R_g	-	17	-	Ω
Turn-on delay time	$V_{GS}=-10V, V_{DD}=-30V,$ $I_D=-1A, R_G=6\Omega$	$t_{d(on)}$	-	5.2	10	ns
Rise Time		T_r	-	19	36	
Turn-Off Delay Time		$t_{d(OFF)}$	-	35	67	
Fall Time		t_f	-	10.6	20	
Total Gate Charge	$V_{DS}=-30V$ $V_{GS}=-10V$ $I_D=-2A$	Q_g	-	8.2	12	nC
Gate-Source Charge		Q_{gs}	-	1.8	3.6	
Gate-Drain Charge		Q_{gd}	-	1.5	3	
Diode Forward Voltage ²	$V_{GS}=0V, I_S=-1A$	V_{SD}	-	-0.83	-1	V
Maximum Body-Diode Continuous Current		I_S	-	-	-2	A
Pulsed drain-source diode forward current ¹		I_{SM}	-	-	-8	A

Notes:

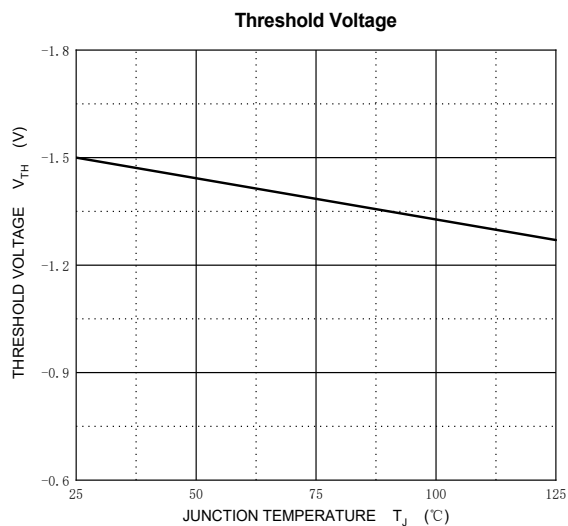
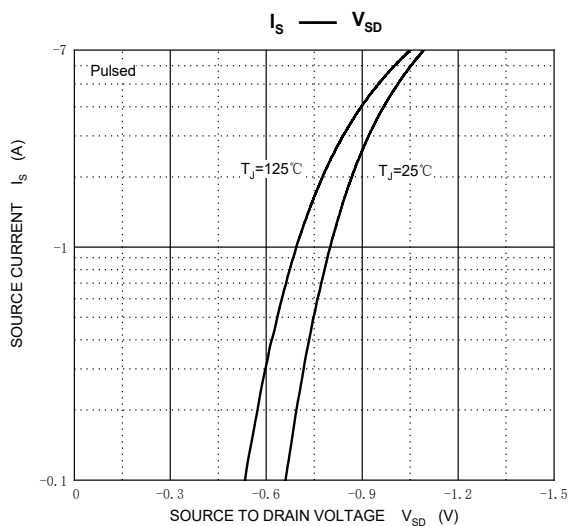
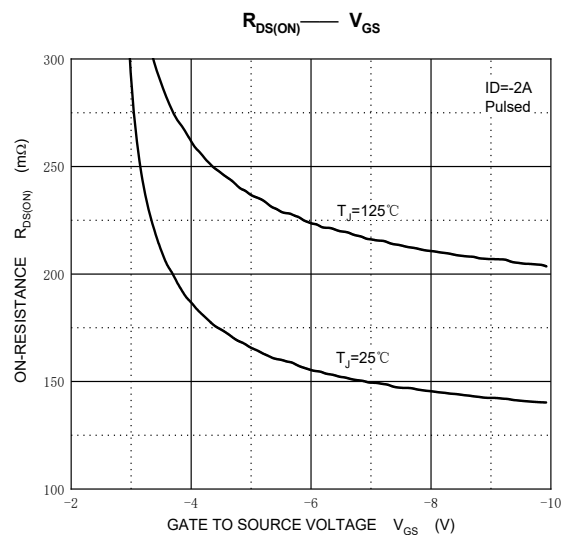
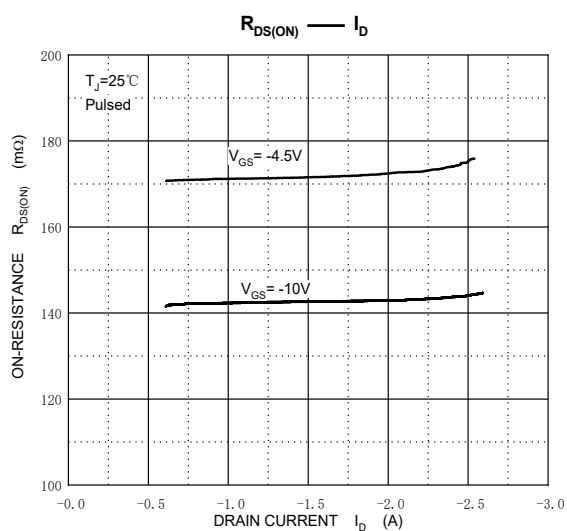
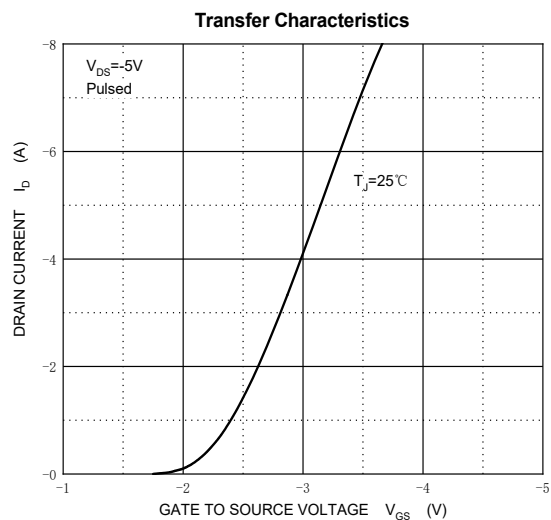
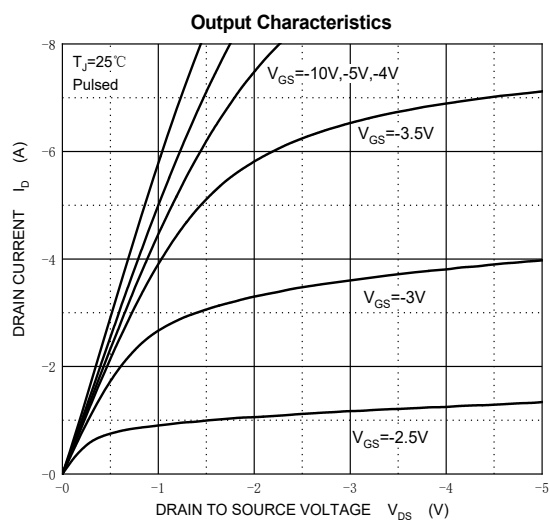
1.Repetitive Rating : Pulse width limited by maximum junction temperature.

2.Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.

3.Guaranteed by design, not subject to production testing.

4.The value of RθJA is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with Ta=25 ℃.

Typical Characteristics



Ordering information

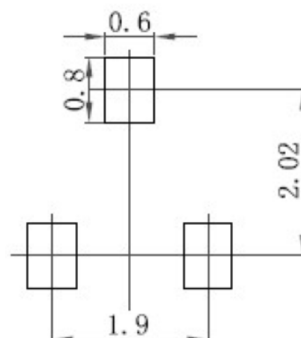
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-23

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
E	1.9		75	
E1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

The recommended mounting pad size



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