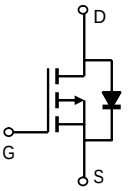
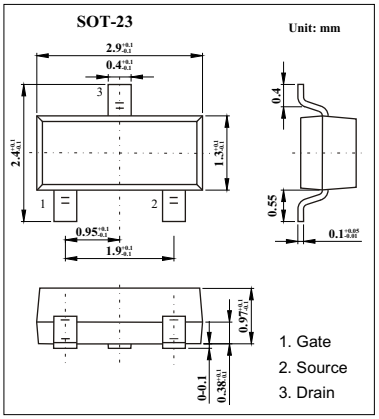
P-Channel 30-V (D-S) MOSFET

SI2307

■ Features

- V_{DS}=-30V, $r_{DS(on)}$=0.080Ω, V_{GS}=-10V, I_D=-3A
- V_{DS}=-30V, $r_{DS(on)}$=0.140Ω, V_{GS}=-4.5V, I_D=-2.5A





■ Absolute Maximum Ratings Ta = 25°C

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25°C T_A=70°C	I_D	-3 -2.5	A
Pulsed Drain Current *		I_{DM}	-12	A
Power Dissipation	T_A=25°C T_A=70°C	P_D	1.25 0.8	W
Maximum Junction-to-Ambient *		R_{thJA}	130	°C/W
Jumction Temperature,Storage Temperature		$T_{j,Tstg}$	-55 to 150	°C

* . Pulse width limited by maximum junction temperature

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	V_{GS} = 0 V, I_D = -10 μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -24 V, V_{GS} = 0 V			-1	μA
		V_{DS} = -24 V, V_{GS} = 0 V, T_J = 55 °C			-10	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20 V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250 μA	-1.0			V
Drain-Source On-State Resistance *	$r_{DS(on)}$	V_{GS} = -10 V, I_D = -3 A		0.064	0.080	Ω
		V_{GS} = -4.5 V, I_D =-2.5 A		0.103	0.140	
On-State Drain Current	$I_{D(on)}$	V_{DS} ≤ -5 V, V_{GS} = -10 V	-6			A
Forward Transconductance *	g_{fs}	V_{DS} = -10 V, I_D = -3 A		4.5		S
Input Capacitance	C_{iss}	V_{DS} = -15 V, V_{GS} = 0, f = 1 MHz		565		pF
Output Capacitance	C_{oss}			126		
Reverse Transfer Capacitance	C_{rss}			75		
Total Gate Charge	Q_g	V_{DS} = -15V ,V_{GS} = -10 V , I_D= -3A		10	15	nC
Gate-Source Charge	Q_{gs}			1.9		
Gate-Drain Charge	Q_{gd}			2		
Turn-On Time	$t_{d(on)}$	V_{DD}=-15V,R_L=15Ω,I_D=-1A,V_{GEN}=-10V,R_G=6Ω		10	20	ns
	t_r			9	20	
Turn-Off Time	$t_{d(off)}$			27	50	
	t_f			7	16	
Continuous Source Current (diode conduction)	I_S			-1.25		A
Diode Forward Voltage *	V_{SD}	I_S = -1.25 A, V_{GS} = 0 V			-1.2	V

* Pulse test: PW≤300μs duty cycle≤2%.

■ Marking

Marking	A7SHB