

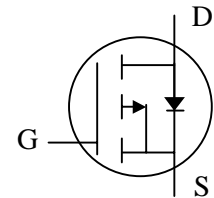
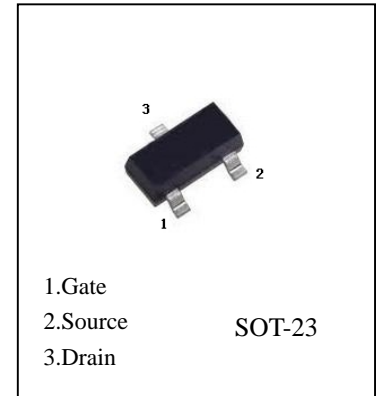
FEATURES

- High dense cell design for extremely low $R_{DS(ON)}$
- Rugged and reliable
- Case Material: Molded Plastic.

Absolute Maximum Ratings (TA=25°C, unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V _{DS}	-12	V
Gate-source Voltage	V _{GS}	± 8	V
Drain Current (Continuous)	I _D	-4.1	A
Drain Current (Pulsed) ^a	I _{DM}	-10	A
Total Power Dissipation @TA=25°C	P _D	0.35	W
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 to +150	°C
Thermal Resistance Junction to Ambient (PCB mounted) ^b	R _{JA}	357	°C/W

P-Channel MOSFET



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

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-12			V
Gate-source threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.5		-0.9	
Gate-source leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} = -8V, V _{GS} = 0V			-1	μA
Drain-source on-state resistance ^e	R _{DS(on)}	V _{GS} = -4.5V, I _D = -3.5A		30	45	mΩ
		V _{GS} = -2.5V, I _D = -3A		40	60	
		V _{GS} = -1.8V, I _D = -2.0A		60	90	
Forward transconductance ^a	g _{fs}	V _{DS} = -5V, I _D = -4.1A	6			S
Dynamic						
Input capacitance ^{b,c}	C _{iss}	V _{DS} = -4V, V _{GS} = 0V, f = 1MHz		740		pF
Output capacitance ^{b,c}	C _{oss}			290		
Reverse transfer capacitance ^{b,c}	C _{rss}			190		
Total gate charge ^b	Q _g	V _{DS} = -4V, V _{GS} = -4.5V, I _D = -4.1A		7.8	15	nC
		V _{DS} = -4V, V _{GS} = -2.5V, I _D = -4.1A		4.5	9	
Gate-source charge ^b	Q _{gs}			1.2		
Gate-drain charge ^b	Q _{gd}		1.6			
Gate resistance ^{b,c}	R _g	f = 1MHz	1.4	7	14	Ω

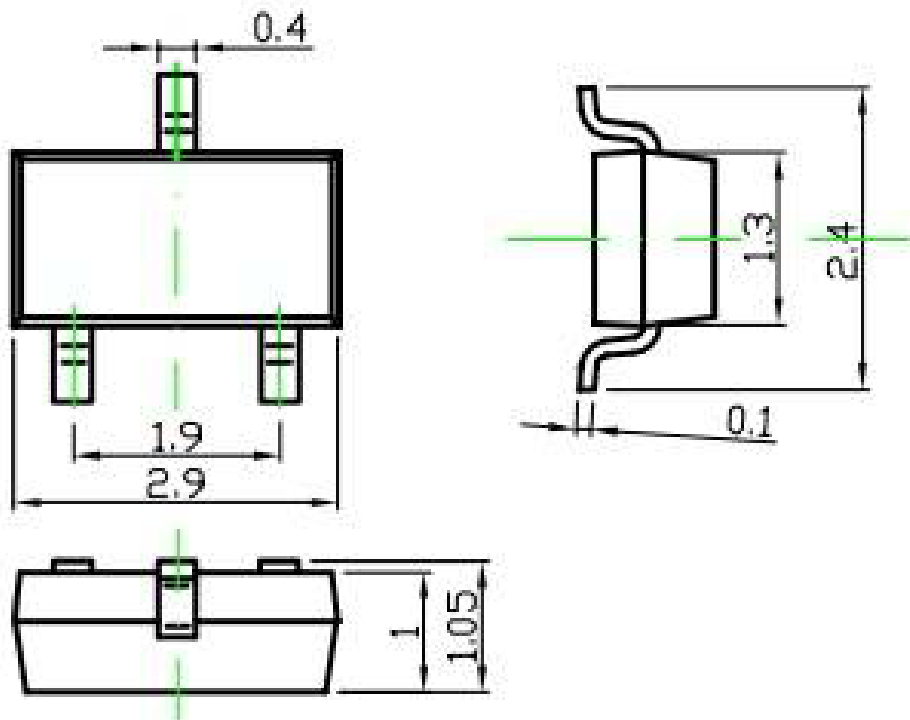
Electrical Characteristics (TA=25°C, unless otherwise noted)

Turn-on delay time ^{b,c}	$t_{d(on)}$	$V_{DD}=-4V,$ $R_L=1.2\Omega, I_D \approx 3.3A,$ $V_{GEN}=-4.5V, R_g=1\Omega$		13	20	ns
Rise time ^{b,c}	t_r			35	53	
Turn-off Delay time ^{b,c}	$t_{d(off)}$			32	48	
Fall time ^{b,c}	t_f			10	20	
Turn-on delay time ^{b,c}	$t_{d(on)}$	$V_{DD}=-4V,$ $R_L=1.2\Omega, I_D \approx 3.3A,$ $V_{GEN}=-8V, R_g=1\Omega$		5	10	
Rise time ^{b,c}	t_r			11	17	
Turn-off delay time ^{b,c}	$t_{d(off)}$			22	33	
Fall time ^{b,c}	t_f			16	24	
Drain-source body diode characteristics						
Continuous source-drain diode current	I_S	$T_C=25^\circ C$			-1.4	A
Pulse diode forward current ^a	I_{SM}				-10	
Body diode voltage	V_{SD}	$I_F=-3.3A$			-1.2	V

Note :

- a. Pulse Test ; Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
- b. Guaranteed by design, not subject to production testing.
- c. These parameters have no way to verify.

SOT-23



Typical Characteristics

