

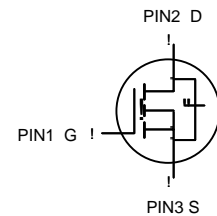
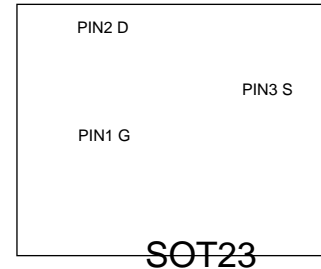
N-Channel Enhancement Mode Field Effect Transistor

$$z V_{DSS} = 30 \text{ V} \quad I_D = 5.8 \text{ A}$$

$$z R_{DS(on)} < 9 \text{ m}\Omega \quad V_{GS} = 9 \text{ V}$$

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N-Channel MOSFET

FEATURE

- High dense cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

APPLICATION

- Load/Power Switching
- Interfacing Switching

Maximum ratings ($T_a=25^\circ\text{C}$ unless otherwise noted)

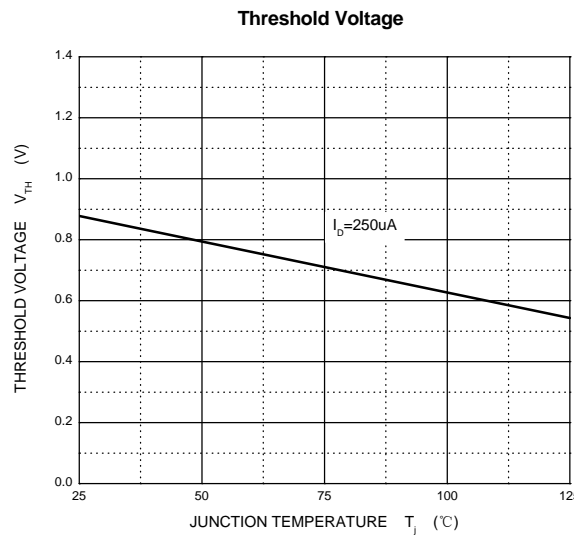
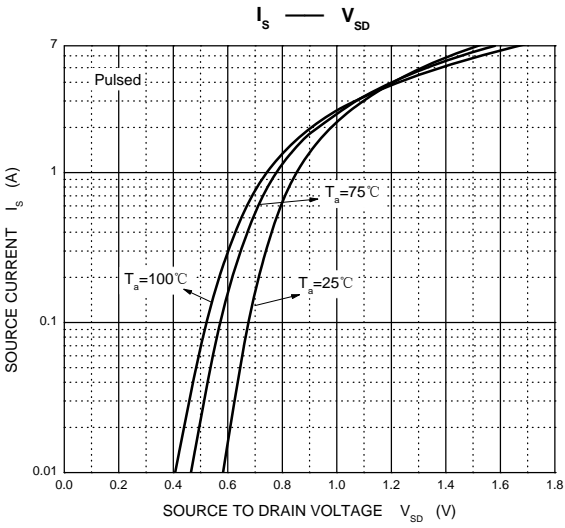
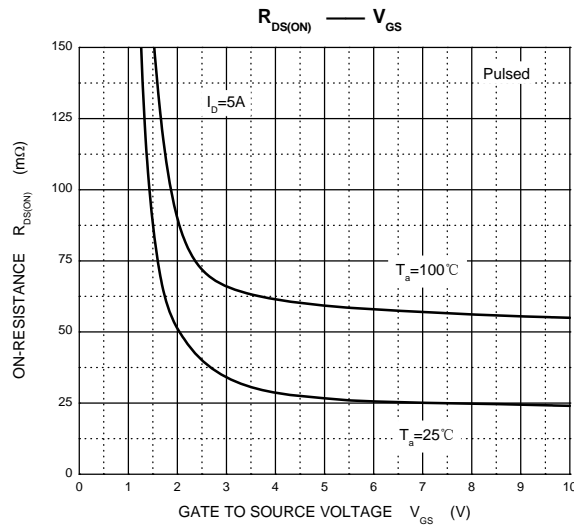
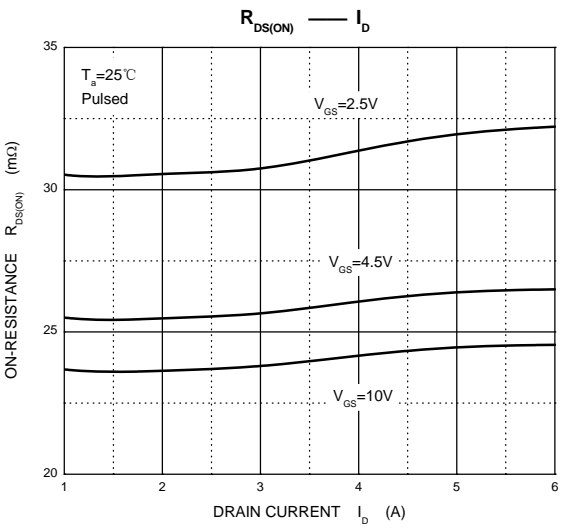
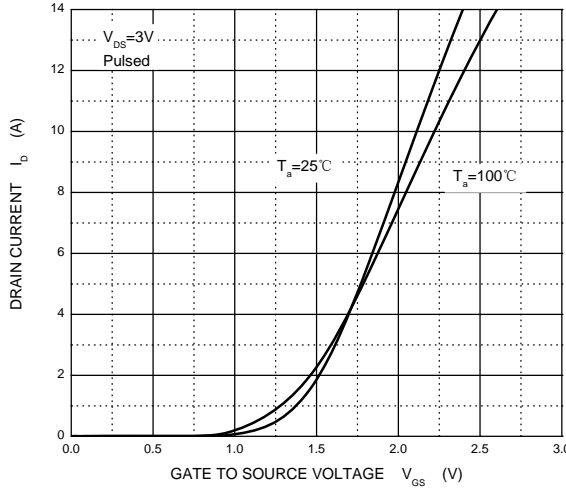
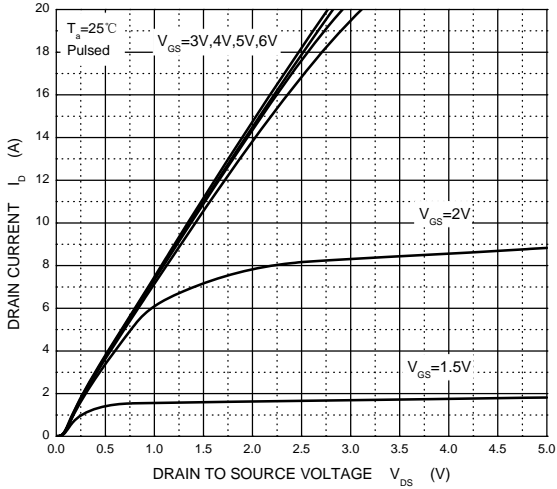
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	5.8	A
Drain Current-Pulsed (note 1)	I_{DM}	30	A
Power Dissipation	P_D	400	mW
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	313	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^\circ\text{C}$

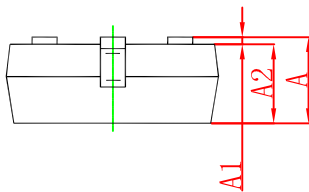
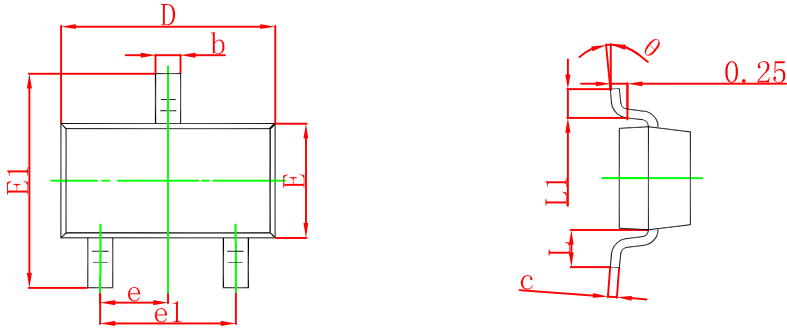
T_a=25 °C unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =24V, V _{GS} = 0V			1	μA
Gate-source leakage current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V			±100	nA
On characteristics (note 3)						
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =5.8A		29	32	mΩ
		V _{GS} =4.5V, I _D =5A		32	40	mΩ
		V _{GS} =2.5V, I _D =4A		40	46	mΩ
Forward tranconductance	g _{FS}	V _{DS} =5V, I _D =5A	8			S
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.7		1.4	V
Dynamic Characteristics (note 4,5)						
Input capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f =1MHz			1155	pF
Output capacitance	C _{oss}			108		pF
Reverse transfer capacitance	C _{rss}			84		pF
Gate resistance	R _g	V _{DS} =0V, V _{GS} =0V, f =1MHz			3.6	Ω
Switching Characteristics (note 4,5)						
Turn-on delay time	t _{d(on)}	V _{GS} =10V, V _{DS} =15V, R _L =2.7Ω, R _{GEN} =3Ω			5	ns
Turn-on rise time	t _r				7	ns
Turn-off delay time	t _{d(off)}				40	ns
Turn-off fall time	t _f				6	ns
Drain-source diode characteristics and maximum ratings						
Diode forward voltage (note 3)	V _{SD}	I _S =1A, V _{GS} =0V			1	V

Note :

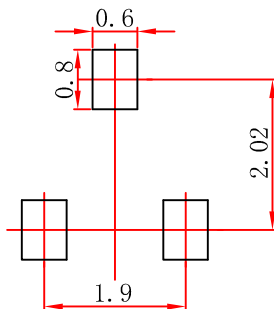
1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.





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°

SOT-23 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.05mm.
 3. The pad layout is for reference purposes only.