

P-Channel Enhancement Mode Field Effect Transistor

$$z V_{DSS} = -30 \text{ V} \quad I_D = -4.2 \text{ A}$$

$$z R_{DS(on)} < 60 \text{ m}\Omega \quad \text{at } V_{GS} = 9 \text{ V}$$

$$z R_{DS(on)} < 70 \text{ m}\Omega \quad \text{at } V_{GS} = 9 \text{ V}$$

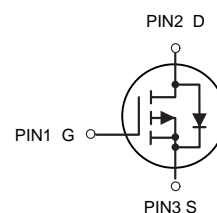
$$z R_{DS(on)} < 85 \text{ m}\Omega \quad \text{at } V_{GS} = 9 \text{ V}$$

PIN2 D

PIN3 S

PIN1 G

SOT23



FEATURE

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

APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

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

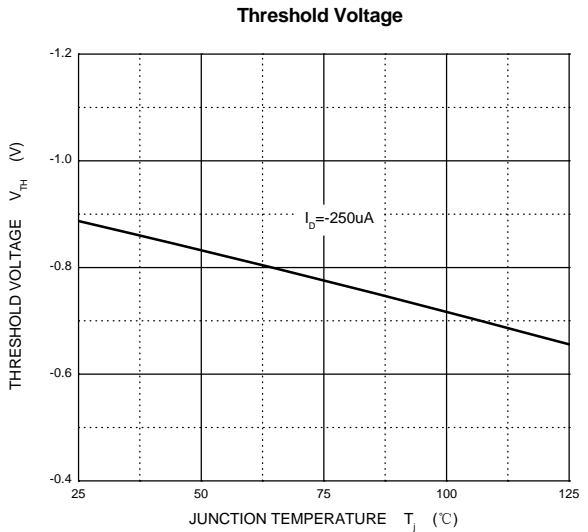
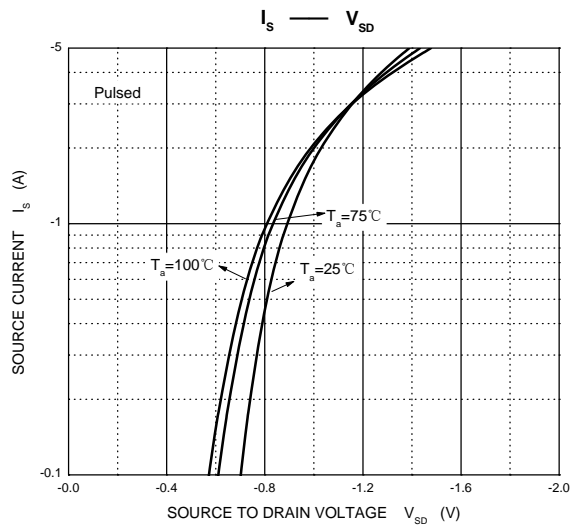
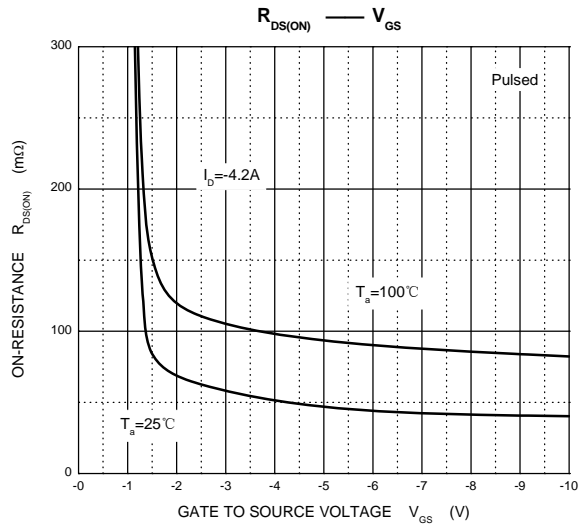
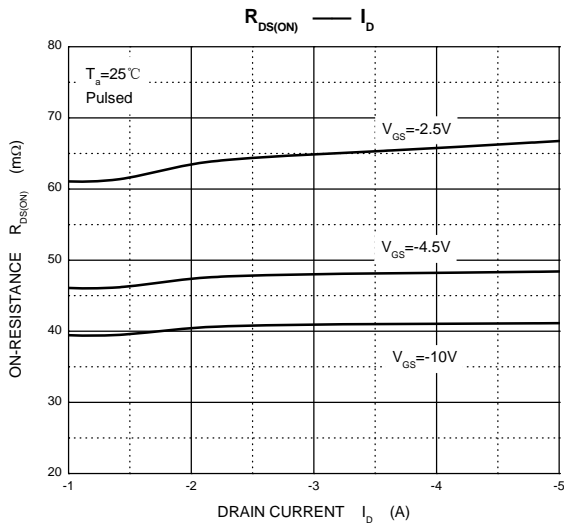
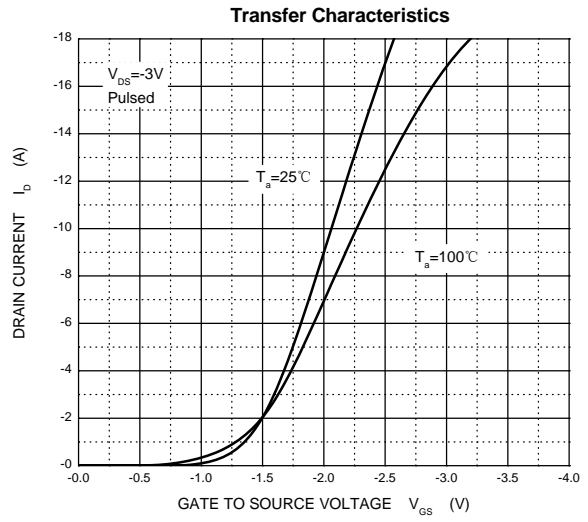
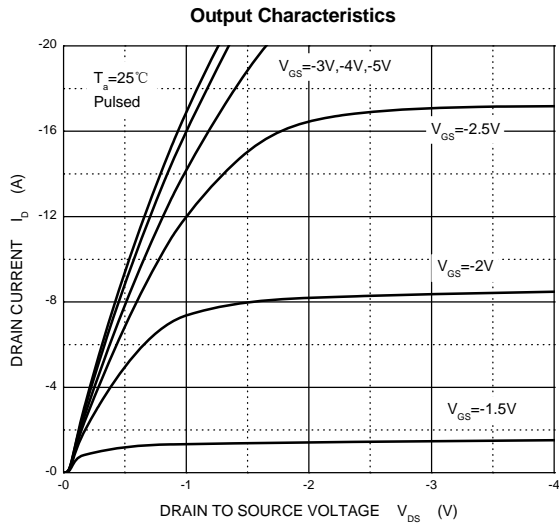
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	-4.2	A
Power Dissipation	P_D	400	mW
Thermal Resistance from Junction to Ambient (t<5s)	$R_{\theta JA}$	313	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^\circ\text{C}$

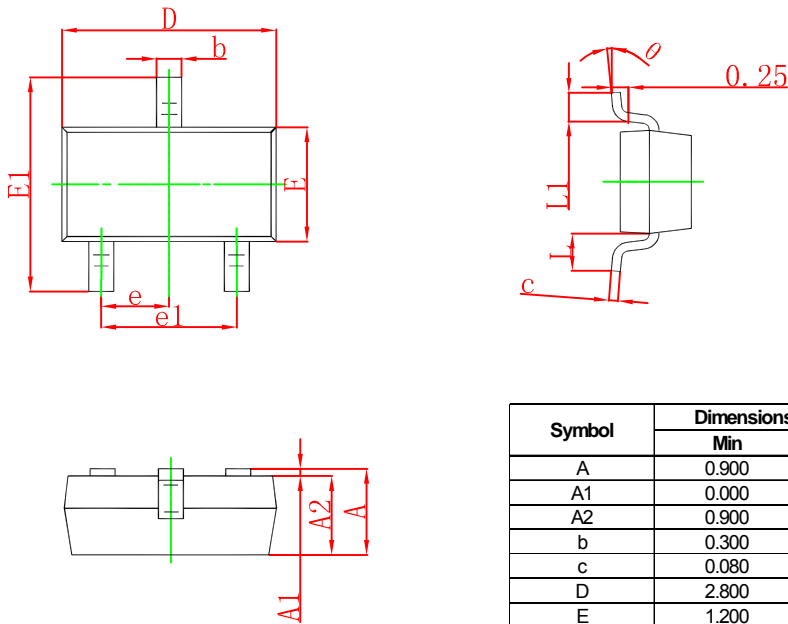
T_a=25 °C unless otherwise specified

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						
Drain-source on-resistance (note 1)	R _{DS(on)}	V _{GS} = -10V, I _D = -4.2A		41	60	mΩ
		V _{GS} = -4.5V, I _D = -4A		47	70	mΩ
		V _{GS} = -2.5V, I _D = -1A		61	85	mΩ
Forward tranconductance (note 1)	g _{FS}	V _{DS} = -5V, I _D = -5A	7			S
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.7		-1.3	V
Dynamic characteristics (note 2)						
Input capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz		1050		pF
Output capacitance	C _{oss}			127		pF
Reverse transfer capacitance	C _{rss}			85		pF
Switching characteristics (note 2)						
Turn-on delay time	t _{d(on)}	V _{GS} = -10V, V _{DS} = -15V, R _L = 3.6Ω, R _{GEN} = 6Ω			6.5	ns
Turn-on rise time	t _r				3.5	ns
Turn-off delay time	t _{d(off)}				40	ns
Turn-off fall Time	t _f				13	ns
Drain-source diode characteristics and maximum ratings						
Diode forward voltage (note 1)	V _{SD}	I _S = -1A, V _{GS} = 0V			-1	V

Note :

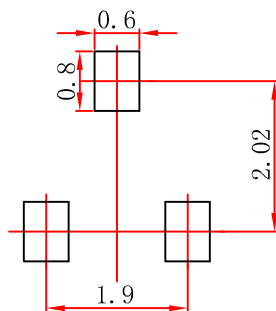
1. Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
2. These parameters have no way to verify.





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: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.