

Product Summary

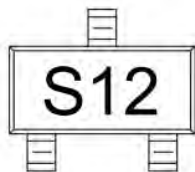
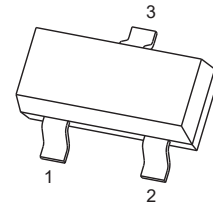
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	17mΩ@4.5V	5 A
	20mΩ@2.5V	
	30mΩ@1.8V	

Feature

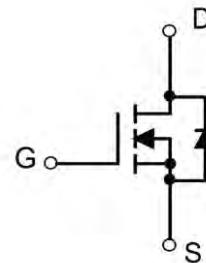
- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

Application

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

MARKING:

SOT-23


1. GATE
2. SOURCE
3. DRAIN

Schematic diagram

ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	20	V
Gate - Source Voltage		V_{GS}	±8	V
Continuous Drain Current ^{1,5}	$T_A = 25^{\circ}\text{C}$	I_D	5	A
Pulsed Drain Current ²		I_{DM}	20	A
Power Dissipation ^{4,5}	$T_A = 25^{\circ}\text{C}$	P_D	1.5	W
Thermal Resistance from Junction to Ambient ⁵		$R_{\theta JA}$	83.3	$^{\circ}\text{C/W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~ +150	$^{\circ}\text{C}$

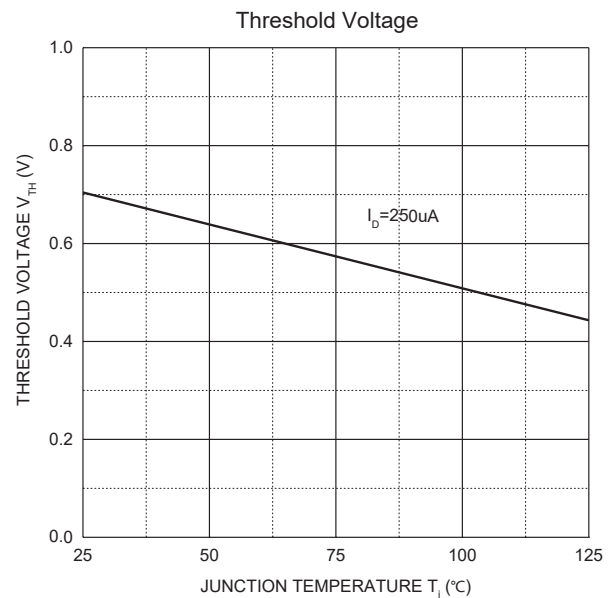
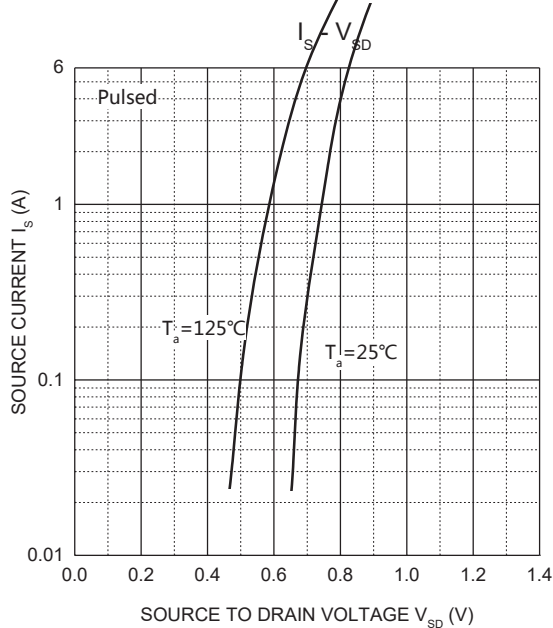
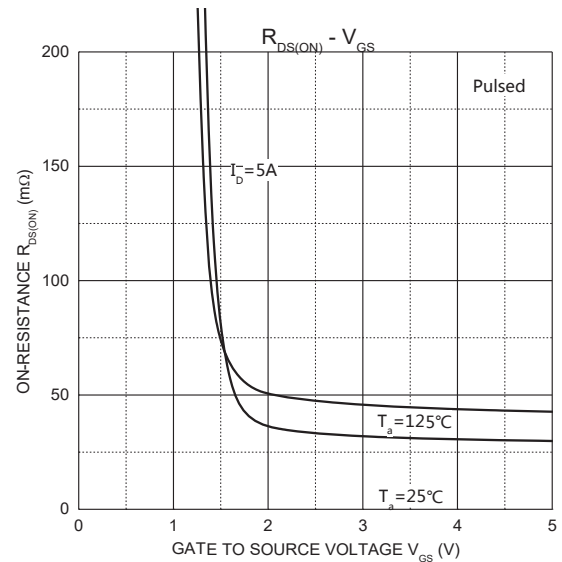
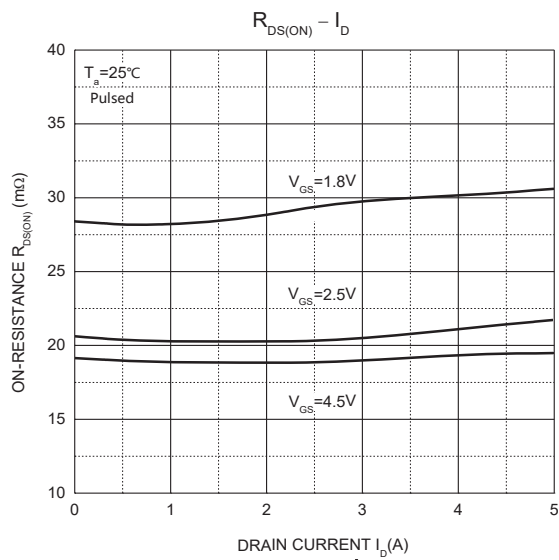
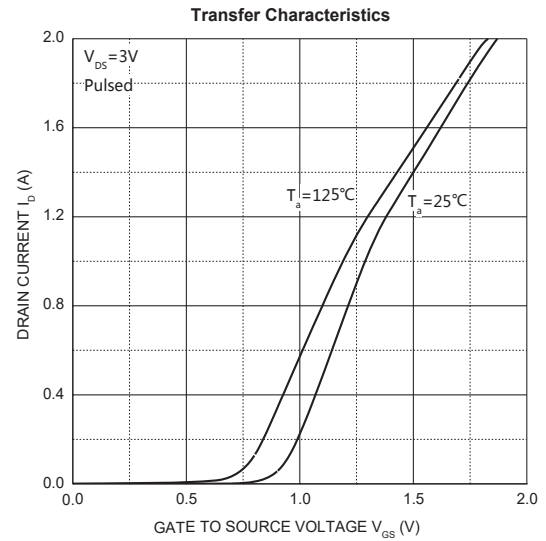
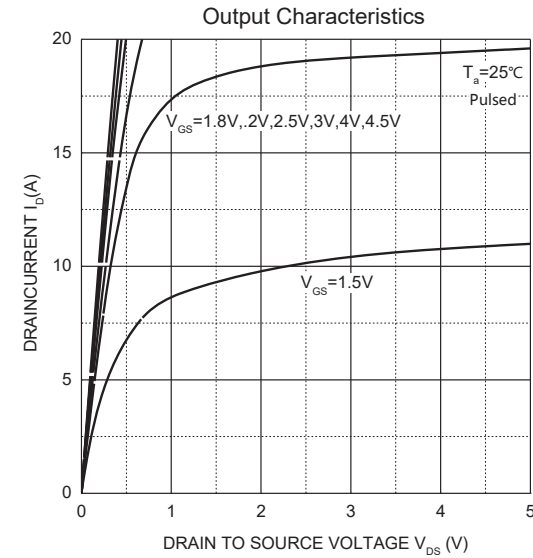
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

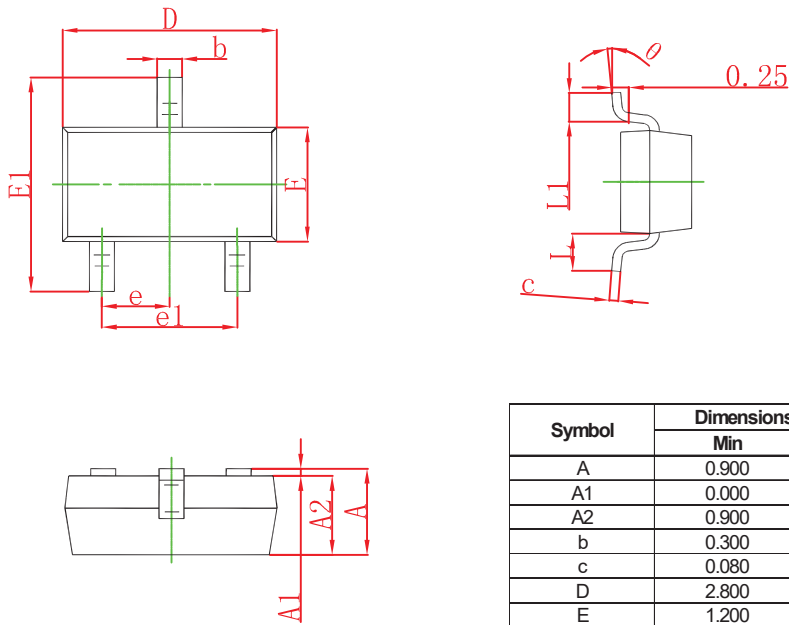
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V,V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±8V, V _{DS} = 0V			±0.1	μA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.45	0.7	1.0	V
Drain-source on-resistance ³	R _{DS(on)}	V _{GS} =4.5V, I _D =5.0A		17	24	mΩ
		V _{GS} =2.5V, I _D =4.7A		20	32	
		V _{GS} =1.8V, I _D =4.3A		30	42	
Forward tranconductance ³	g _{FS}	V _{DS} =10V, I _D =5A	6			S
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =10V,V _{GS} =0V,f=1MHz		865		pF
Output Capacitance	C _{oss}			105		
Reverse Transfer Capacitance	C _{rss}			55		
Gate resistance	R _g	f =1MHz	0.5		4.8	Ω
Switching Characteristics						
Turn-on delay time	t _{d(on)}	V _{GEN} =5V,V _{DD} =10V, I _D =4A,R _G =1Ω, R _L =2.2Ω			10	ns
Turn-on rise time	t _r				20	
Turn-off delay time	t _{d(off)}				32	
Turn-off fall time	t _f				12	
Source-Drain Diode characteristics						
Diode Forward voltage ³	V _{DS}	V _{GS} =0V, I _S =4A		0.75	1.2	V

Notes:

- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 4.The power dissipation P_D is limited by T_{J(MAX)} = 150°C.
- 5.Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

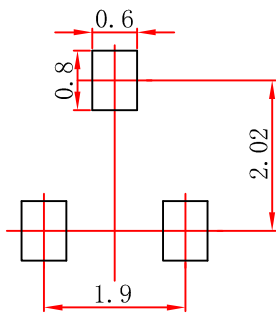
Typical Electrical and Thermal Characteristics





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.

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