



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-12V	30m Ω @-4.5V	-4.1A
	40m Ω @-2.5V	
	60m Ω @-1.8V	

Feature

TrenchFET Power MOSFET

Excellent $R_{DS(on)}$ and Low Gate Charge

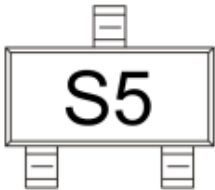
Application

DC/DC Converter

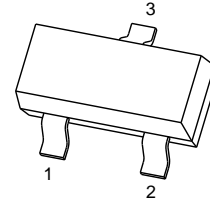
Load Switch for Portable Devices

Battery Switch

MARKING:

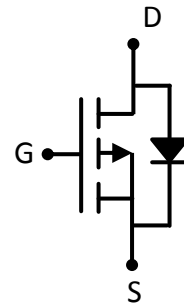


SOT-23



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}	-12	V
Gate-Source Voltage	V_{GS}	± 10	V
Continuous Drain Current	I_D	-4.1	A
Pulsed Drain Current ($t=300\mu\text{s}$)	I_{DM}	-15	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

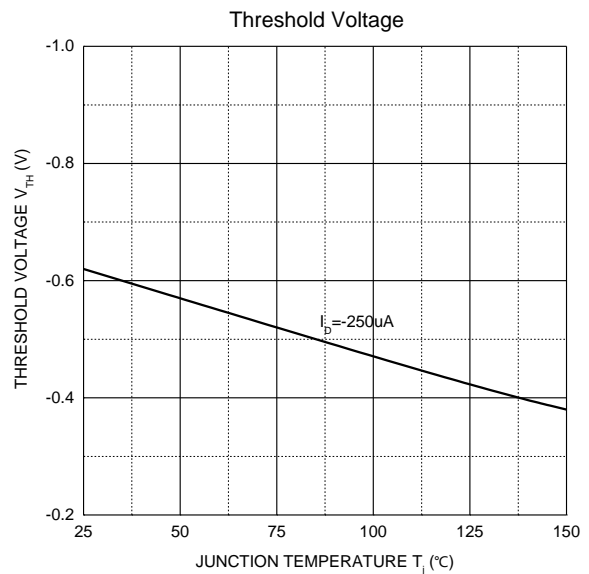
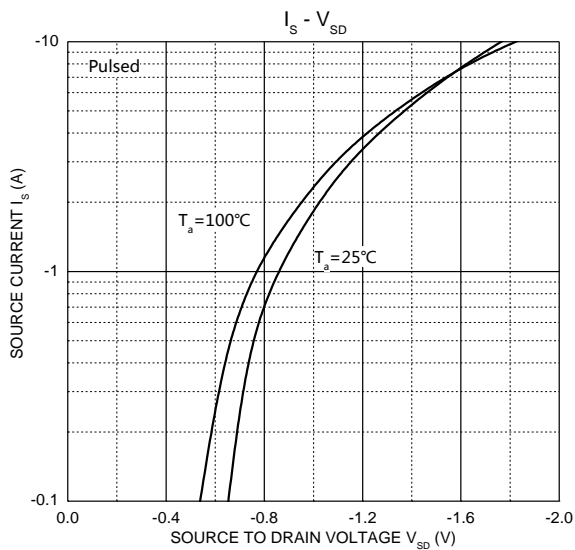
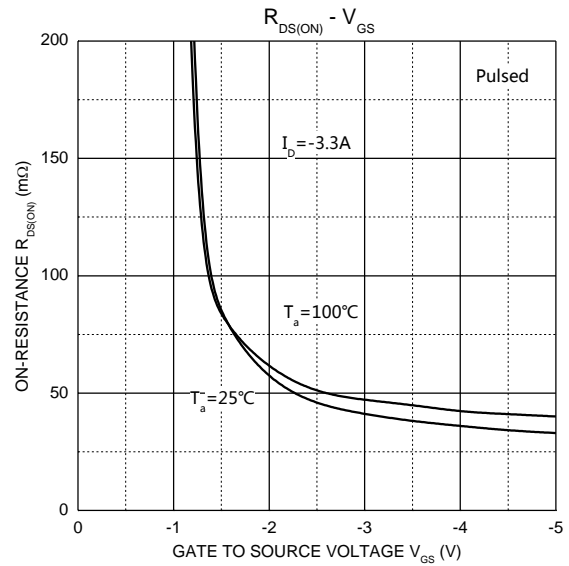
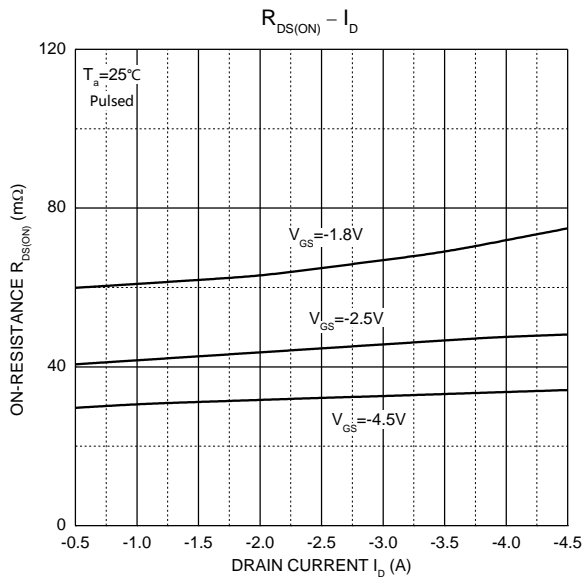
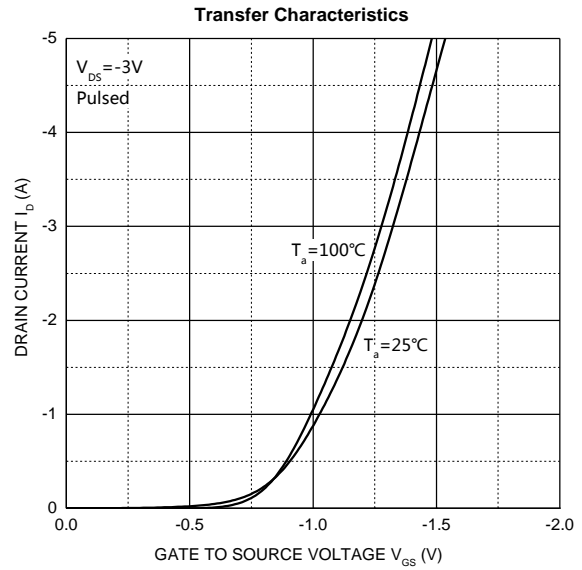
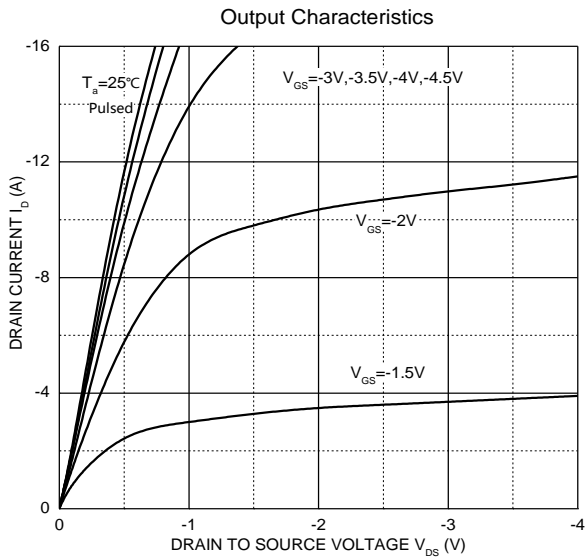
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

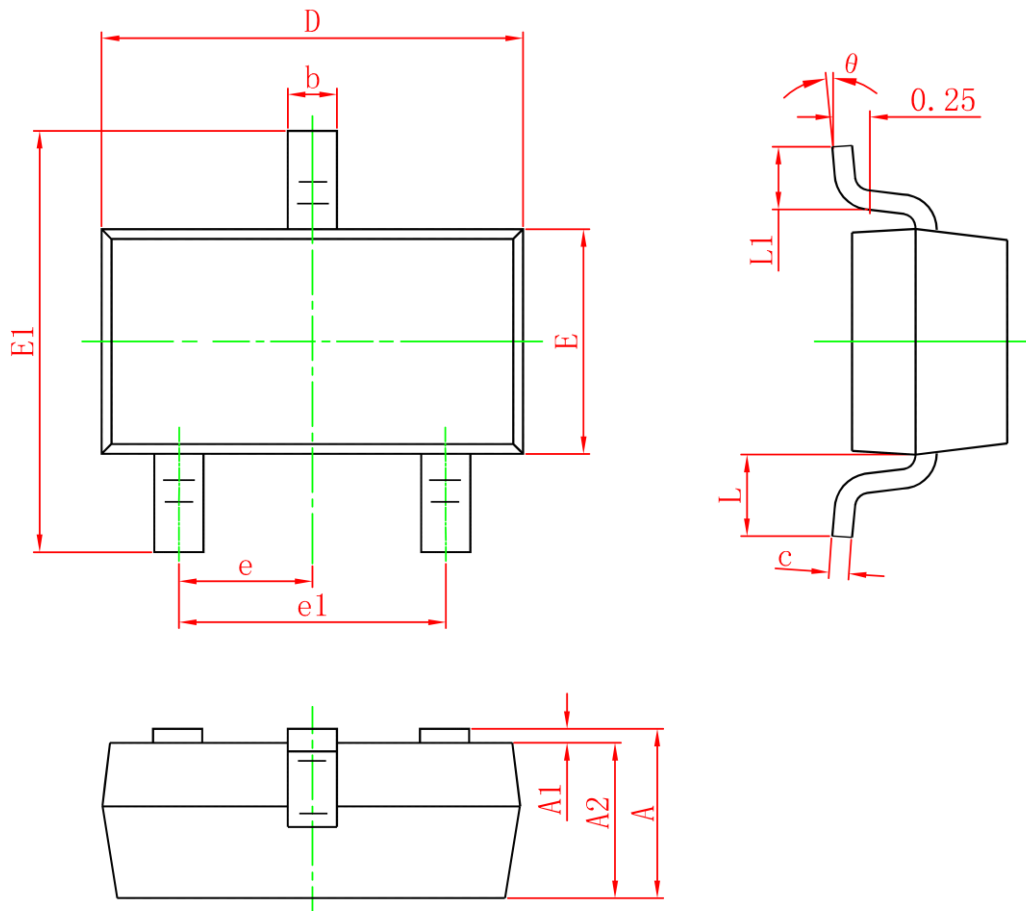
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-12			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -12V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±10V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.5	-0.65	-0.9	V
Drain-source on-resistance ^a	R _{DS(on)}	V _{GS} = -4.5V, I _D = -3.5A		30	45	mΩ
		V _{GS} = -2.5V, I _D = -3.0A		40	60	
		V _{GS} = -1.8V, I _D = -2.0A		60	90	
Forward tranconductance ^a	g _{FS}	V _{DS} = -5V, I _D = -4.1A	6			S
Dynamic characteristics^{b,c}						
Input Capacitance	C _{iss}	V _{DS} = -4V, V _{GS} = 0V, f = 1MHz		740		pF
Output Capacitance	C _{oss}			290		
Reverse Transfer Capacitance	C _{rss}			190		
Gate resistance	R _g	f = 1MHz	1.4		14	Ω
Total Gate Charge	Q _g	V _{DS} = -4V, V _{GS} = -2.5V, I _D = -4.1A		4.5	9	nC
Gate-Source Charge	Q _{gs}			1.2		
Gate-Drain Charge	Q _{gd}			1.6		
Turn-on delay time	t _{d(on)}	V _{DD} = -4V, V _{GEN} = -4.5V, I _D = -3.3A R _L = 1.2Ω, R _{GEN} = 1Ω		13	20	ns
Turn-on rise time	t _r			35	53	
Turn-off delay time	t _{d(off)}			32	48	
Turn-off fall time	t _f			10	20	
Turn-on delay time	t _{d(on)}	V _{DD} = -4V, V _{GEN} = -8V, I _D = -3.3A R _L = 6Ω, R _{GEN} = 1Ω		5	10	
Turn-on rise time	t _r			11	17	
Turn-off delay time	t _{d(off)}			22	33	
Turn-off fall time	t _f			16	24	
Source-Drain Diode characteristics						
Diode forward current	I _S	T _C = 25°C			-1.4	A
Diode pulsed forward current ^a	I _{SM}				-10	A
Diode Forward voltage	V _{DS}	V _{GS} = 0V, I _S = -3.3A			-1.2	V

Note :

- Pulse Test ; Pulse Width ≤300μs, Duty Cycle ≤2%.
- Guaranteed by design, not subject to production testing.
- These parameters have no way to verify.

Typical Electrical and Thermal Characteristics



SOT-23 Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0	0.100	0	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	1.150	1.500	0.045	0.059
E1	2.250	2.650	0.089	0.104
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°