Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	80mΩ@-4.5V	-3A
	100mΩ@-2.5V	

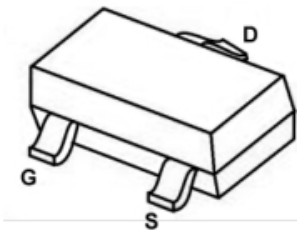
Feature

- TrenchFET Power MOSFET
- Excellent RDS(on) and Low Gate Charge

Applications

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

Package



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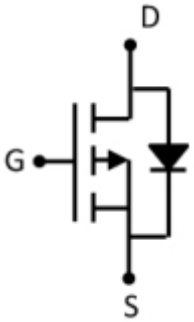
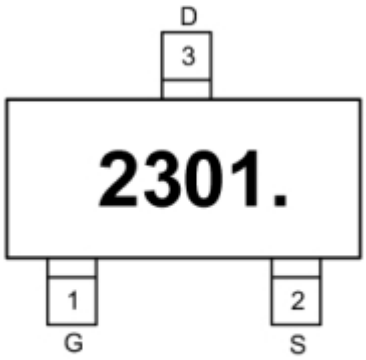
Circuit diagram



Marking



2301. =Device Code

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	-3	A
Pulsed Drain Current	I_{DM}	-12	A
Power Dissipation[1)]	P_D	0.9	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	130	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

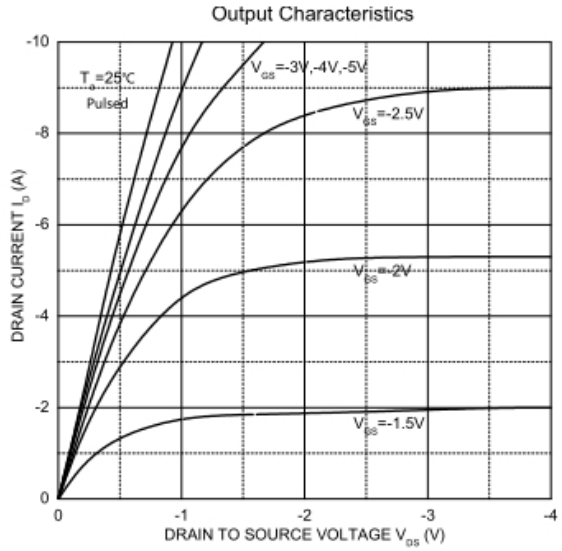
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-16V, V_{GS} = 0V			-1	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V			±100	uA
Gate threshold voltage (1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.5	-0.7	-1	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-4A		80	110	mΩ
		V_{GS} =-2.5V, I_D =-2A		100	140	
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS}=-10V, V_{GS}=0V, f=1MHz		405		pF
Output capacitance	C_{oss}			75		
Reverse transfer capacitance	C_{rss}			55		
Total Gate Charge	Q_g	V_{DS} =-10V, V_{GS} =-2.5V, I_D=-3A		3.3	12	nC
Gate-Source Charge	Q_{gs}			0.7		
Gate-Drain Charge	Q_{gd}			1.3		
Turn-on Delay Time	$T_{d(on)}$	V_{DD}=-10V, V_{GEN}=-4.5V, I_D=-1A, R_L =10Ω, R_{GEN} =1Ω		11		nS
Turn-on Rise Time	T_r			35		
Turn-Off Delay Time	$T_{d(off)}$			30		
Turn-Off Fall Time	t_f			10		
Source-Drain Diode Characteristics						
Body Diode Voltage	V_{DS}	I_S=-1.25A, V_{GS} = 0V		-0.8	-1.3	V

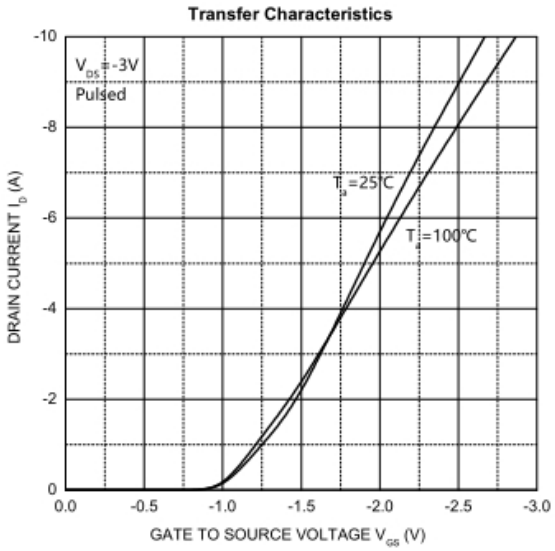
Notes:

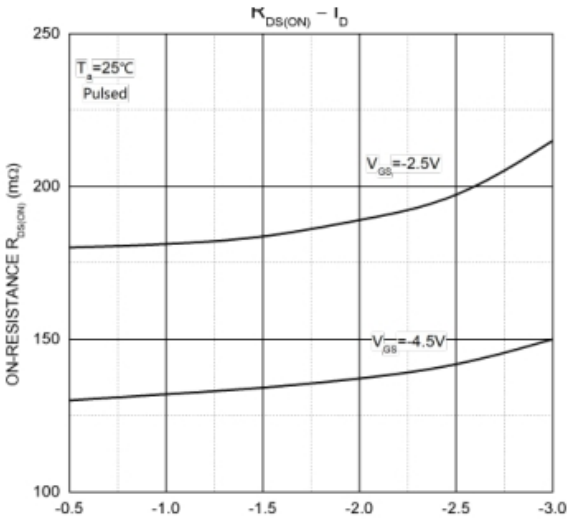
1. Pulse Test: Pulse Width < 300μs, Duty Cycle ≤2%.

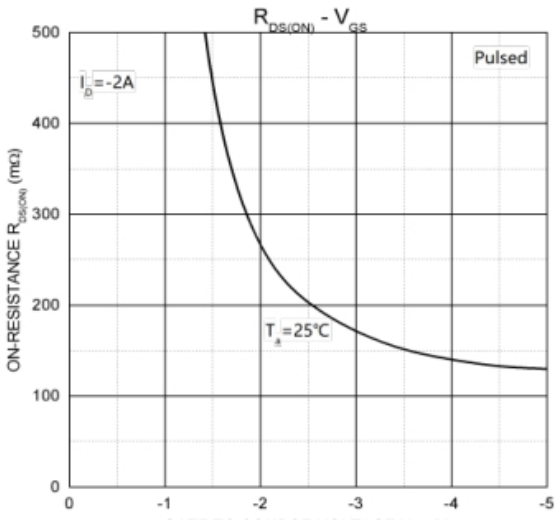
2. Guaranteed by design, not subject to production testing.

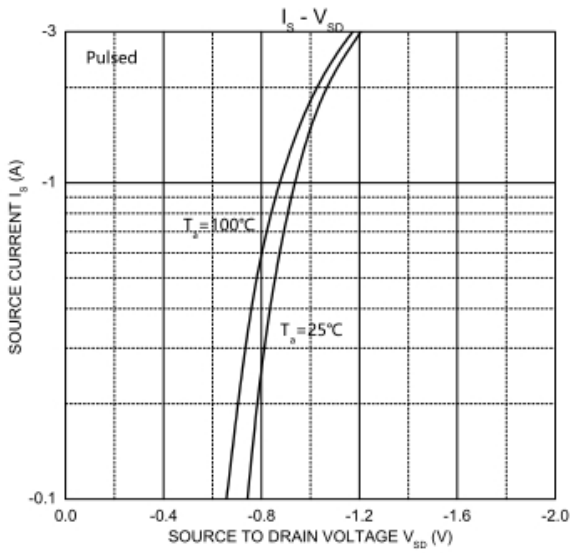
Typical Characteristics

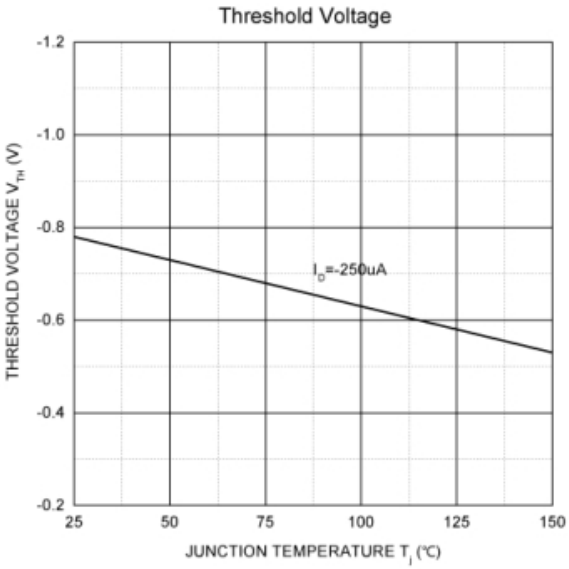




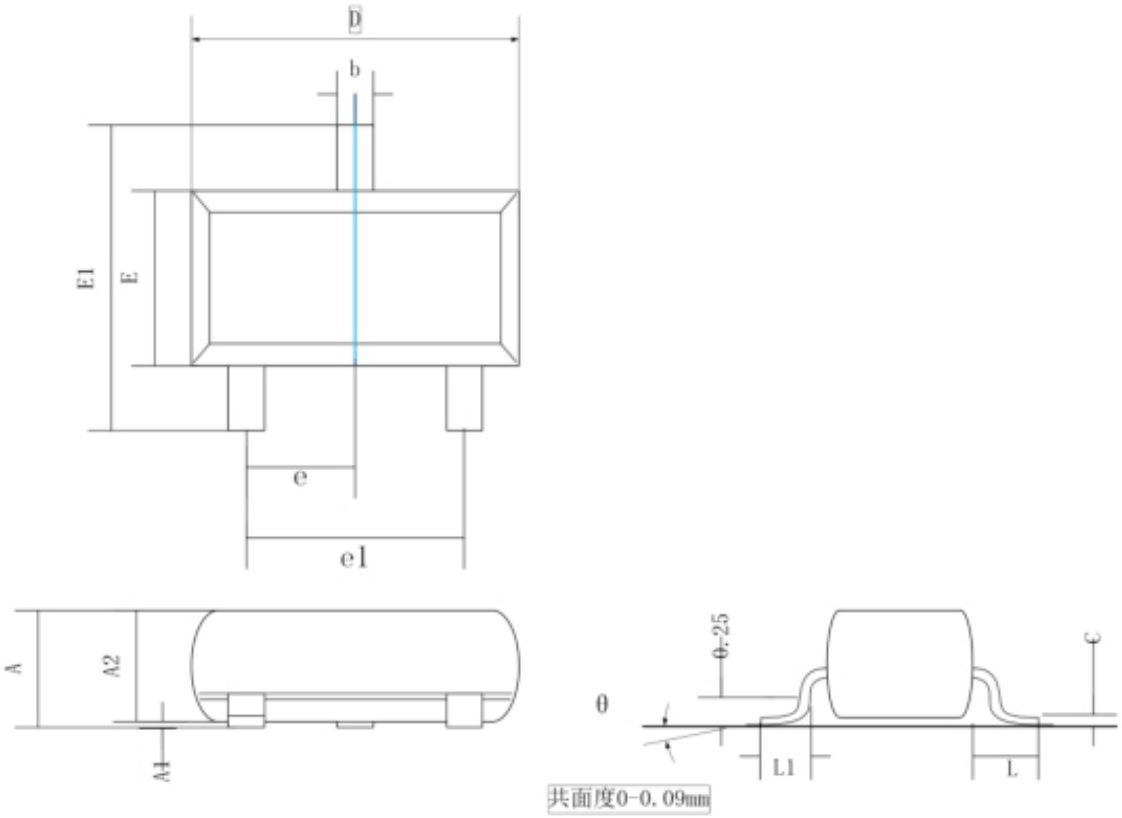








SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50
θ	0°	8°