Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	110mΩ@-4.5V	-1.2A
	140mΩ@-2.5V	

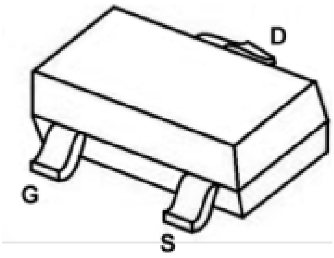
Feature

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

Applications

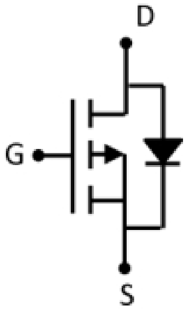
- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

Package

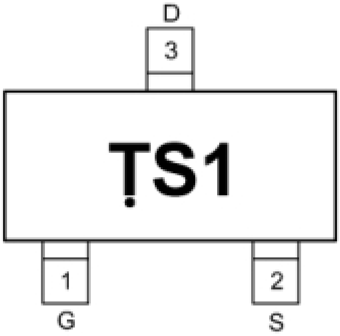


SOT-323

Circuit diagram



Marking



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	-1.2	A
Pulsed Drain Current	I_{DM}	-2.8	A
Power Dissipation	P_D	0.29	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	431	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

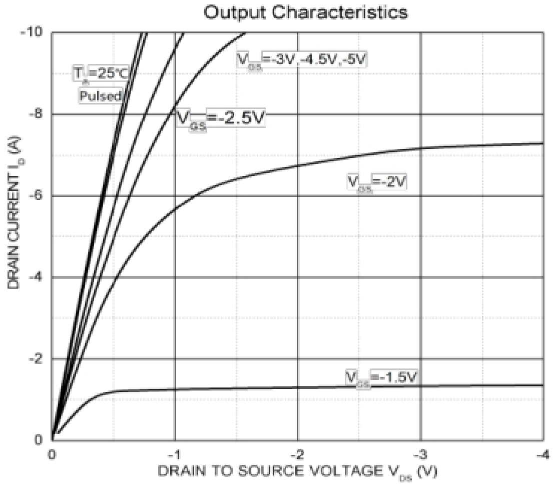
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-16V, V_{GS} = 0V			-1	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V			±100	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 =-0.5A		110	140	mΩ
		V_{GS} =-2.5V, I_D =-0.5A		140	180	
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS}=-8V, V_{GS}=0V, f=1MHz		640		pF
Output capacitance	C_{oss}			120		
Reverse transfer capacitance	C_{rss}			82		
Switching Characterisstics						
Total Gate Charge	Q_g	V_{DS} =-10V,V_{GS} =-4.5V, I_D=-3A		5.5		nC
		V_{DS} =-10V,V_{GS} =-2.5V, I_D=-3A		3.3		
Gate-Source Charge	Q_{gs}			0.7		
Gate-Drain Charge	Q_{gd}			1.3		
Turn-on Delay Time	$T_{d(on)}$	V_{GS}=-4.5V, V_{DD}=-4V, I_D =-1A, R_{GEN} =6.2Ω		6.2		nS
Turn-on Rise Time	T_r			15		
Turn-Off Delay Time	$T_{d(off)}$			26		
Turn-Off Fall Time	t_f			18		
Source-Drain Diode Characteristics						
Diode Forward voltage	V_{DS}	I_S=-1A, V_{GS} = 0V			-1.2	V

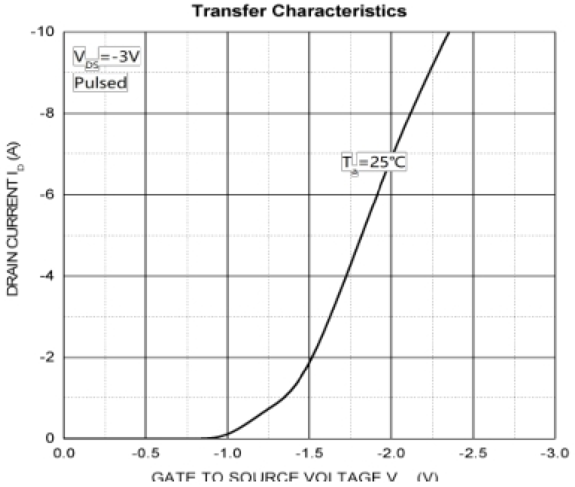
Notes:

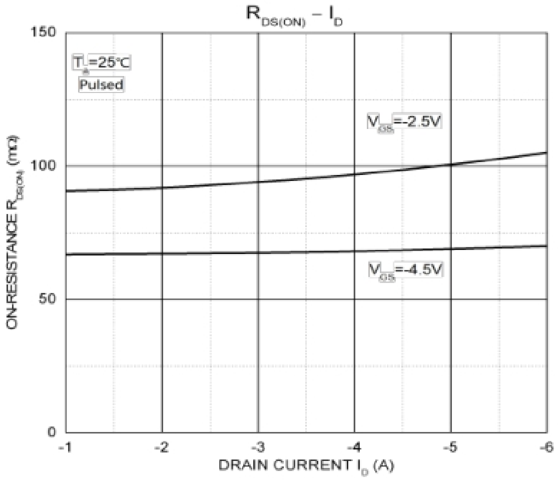
1. Pulse Test: Pulse Width < 300μs, Duty Cycle ≤2%.

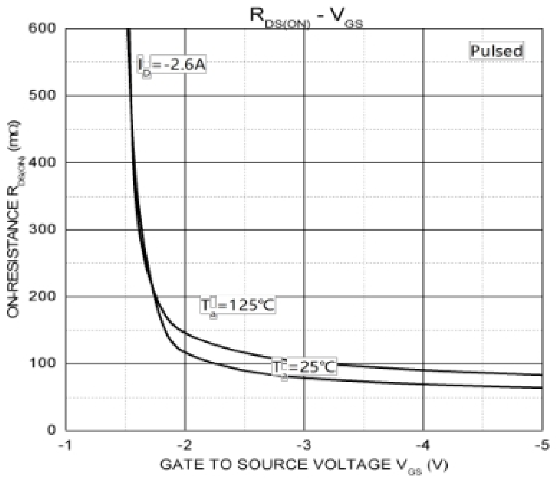
2. Guaranteed by design, not subject to production testing.

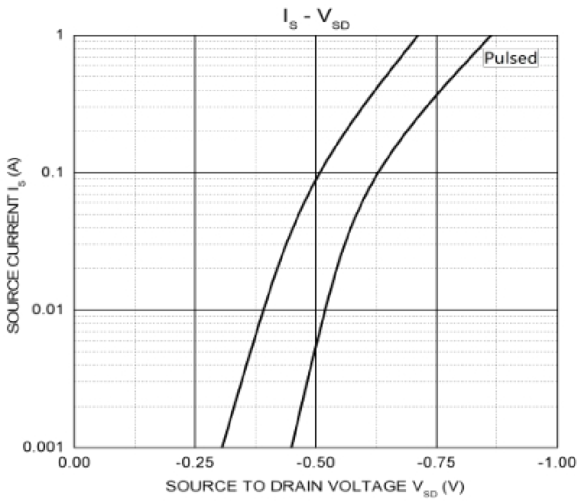
Typical Characteristics

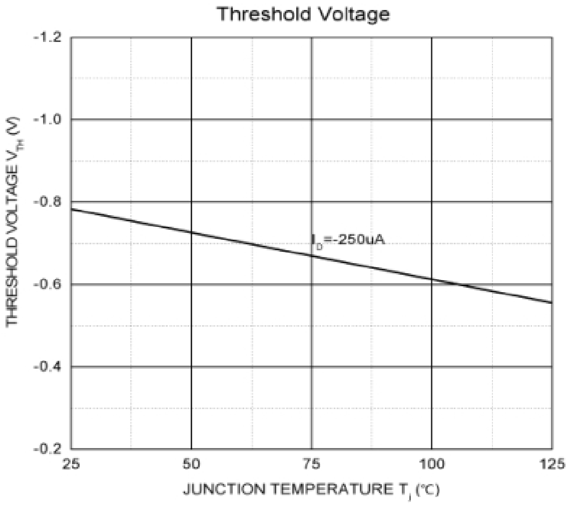

Output Characteristics


Transfer Characteristics

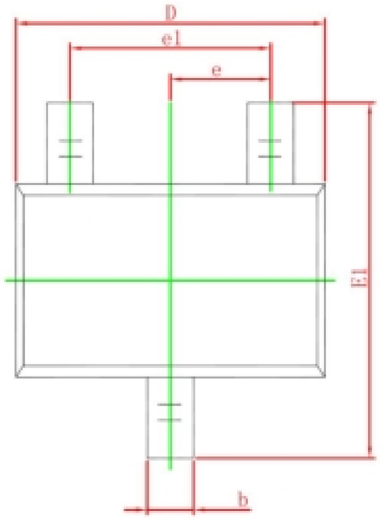

$R_{DS(ON)} - I_D$

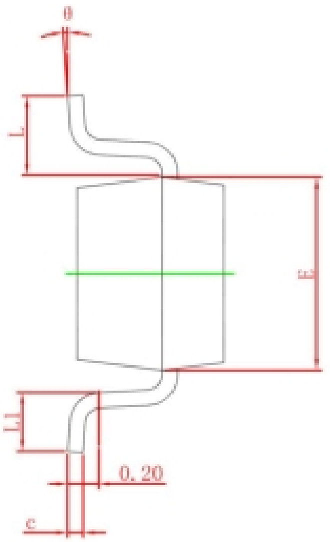

$R_{DS(ON)} - V_{GS}$

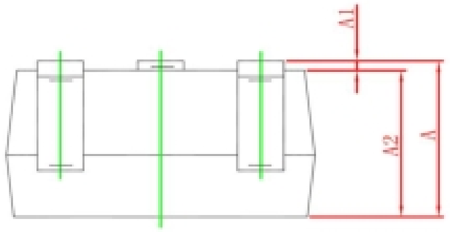

$I_S - V_{SD}$


Threshold Voltage

SOT-323 Package Information







Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.000	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°