

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
-20V	80mΩ@-4.5V	-1.4A
	95mΩ@-2.5V	

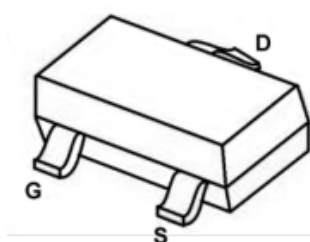
## Feature

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

## Applications

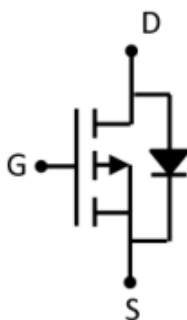
- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

## Package

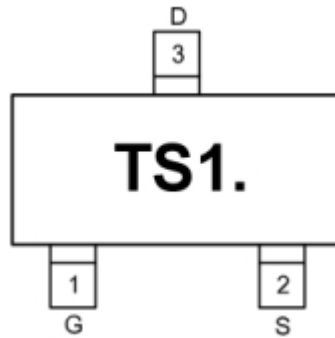


SOT-323

## Circuit diagram



## Marking



## Absolute maximum ratings

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	-1.4	A
Pulsed Drain Current	$I_{DM}$	-5.6	A
Power Dissipation	$P_D$	1	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	125	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_J$	150	
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}\text{C}$

## Electrical characteristics

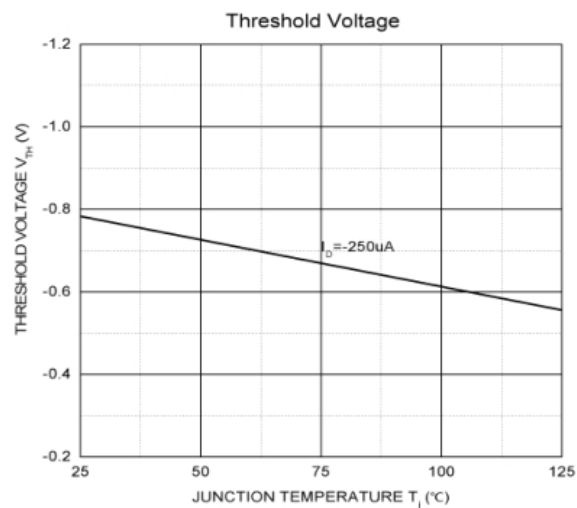
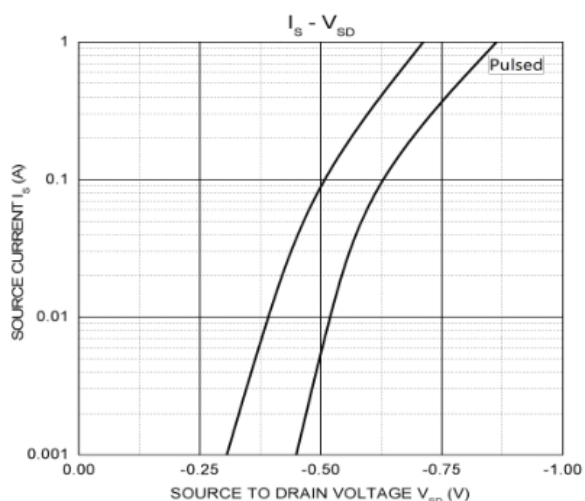
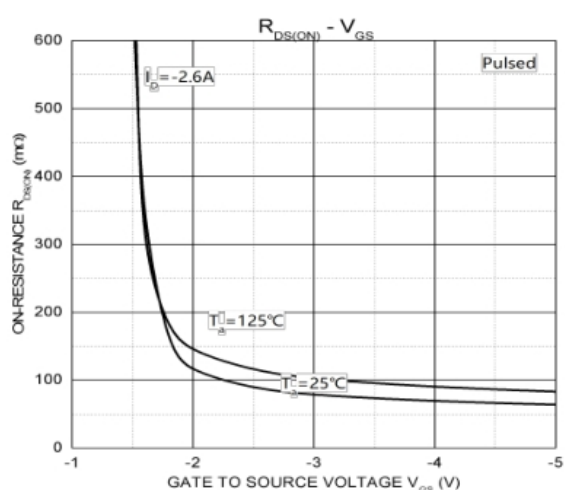
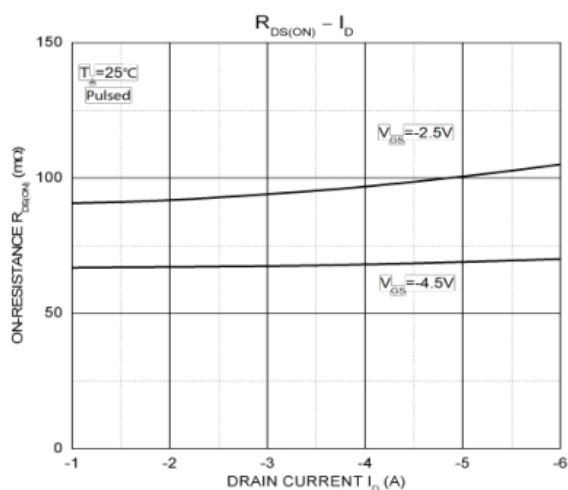
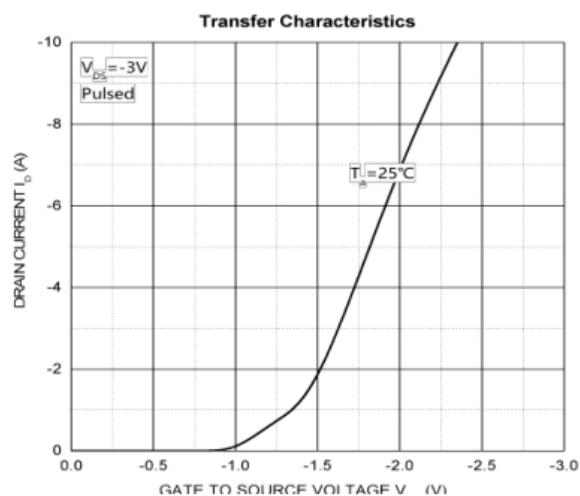
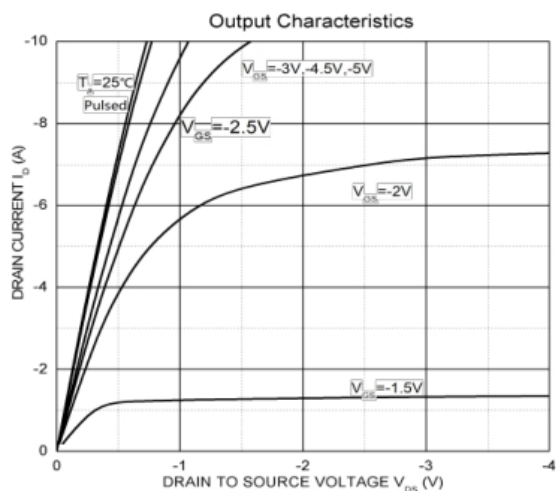
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV (BR)DSS	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-20			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -20V, V <sub>GS</sub> = 0V			-1	uA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V			±100	uA
Gate threshold voltage <sup>(1)</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.5	-0.7	-1	V
Drain-source on-resistance <sup>1)</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -0.5A		80	110	mΩ
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -0.5A		95	140	
Dynamic Characteristics <sup>2)</sup>						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -8V, V <sub>GS</sub> =0V, f=1MHz		640		pF
Output capacitance	C <sub>oss</sub>			120		
Reverse transfer capacitance	C <sub>rss</sub>			82		
Switching Characterisstics						
Turn-on Delay Time	T <sub>d(on)</sub>	V <sub>GS</sub> = -4.5V, V <sub>DD</sub> = -4V, I <sub>D</sub> = -1A, R <sub>G</sub> =6.2Ω		6.2		nS
Turn-on Rise Time	T <sub>r</sub>			15		
Turn-Off Delay Time	T <sub>d(off)</sub>			26		
Turn-Off Fall Time	t <sub>f</sub>			18		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -10V,V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -3A		5.5	10	nC
		V <sub>DS</sub> = -10V,V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -3A		3.3	6	
Gate-Source Charge	Q <sub>gs</sub>			0.7		
Gate-Drain Charge	Q <sub>gd</sub>			1.3		
Source-Drain Diode Characteristics						
Diode Forward voltage	V <sub>DS</sub>	I <sub>S</sub> = -1.25A, V <sub>GS</sub> = 0V			-1.2	V

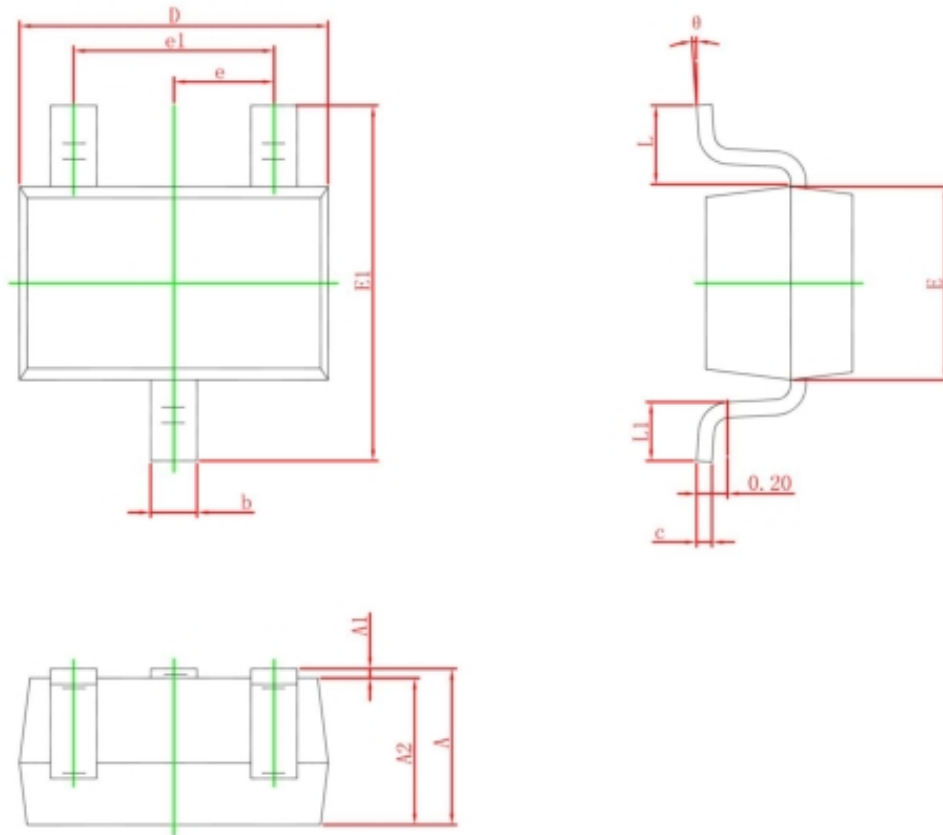
### Notes:

1. Pulse Test: Pulse Width  $< 300\mu s$ , Duty Cycle  $\leq 2\%$ .
2. Guaranteed by design, not subject to production testing.

## Typical Characteristics



## 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°