

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
20V	60mΩ@4.5V	1.8A
	70mΩ@2.5V	

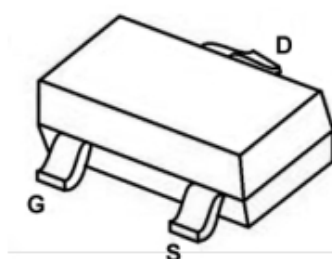
## Feature

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

## Applications

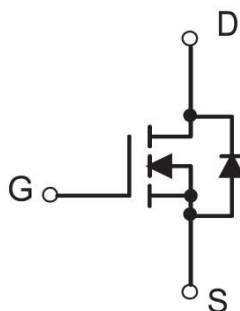
- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

## Package

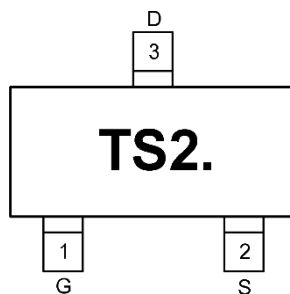


**SOT-323**

## 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	$I_D$	1.8	A
Power Dissipation	$P_D$	0.18	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	695	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}\text{C}$

## Electrical characteristics

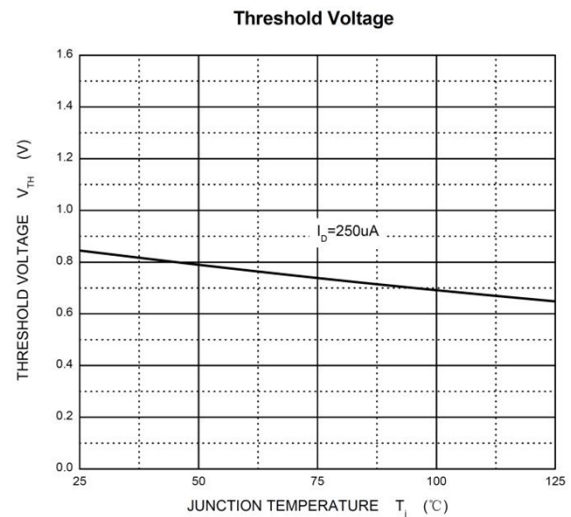
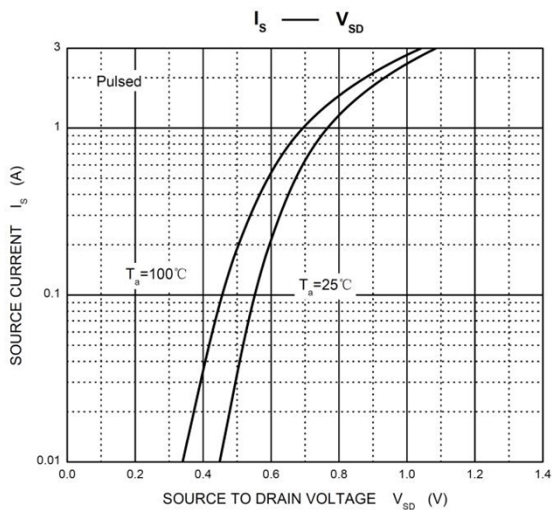
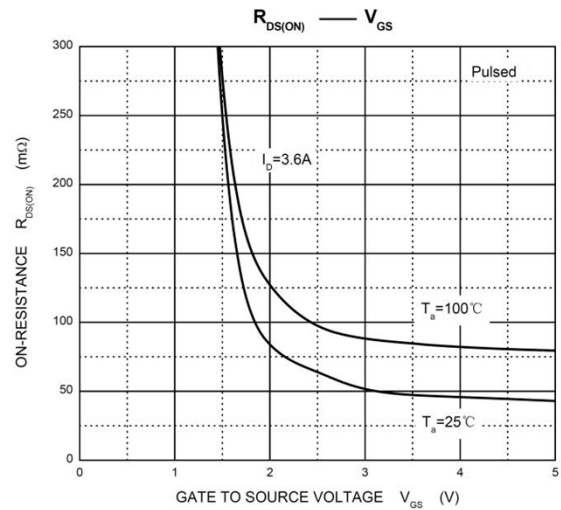
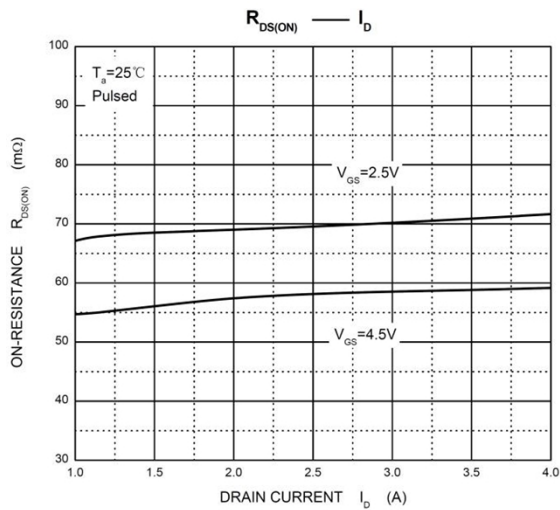
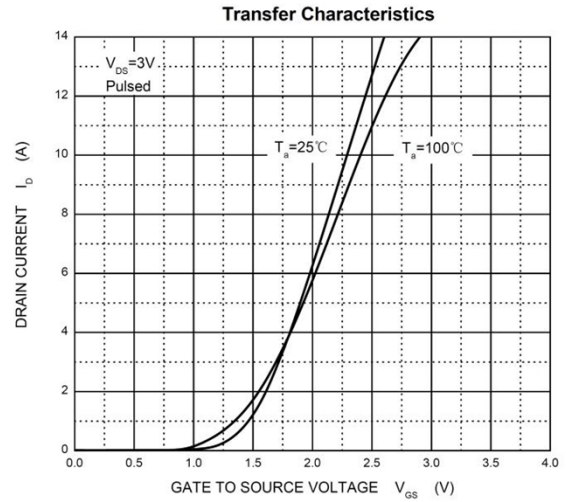
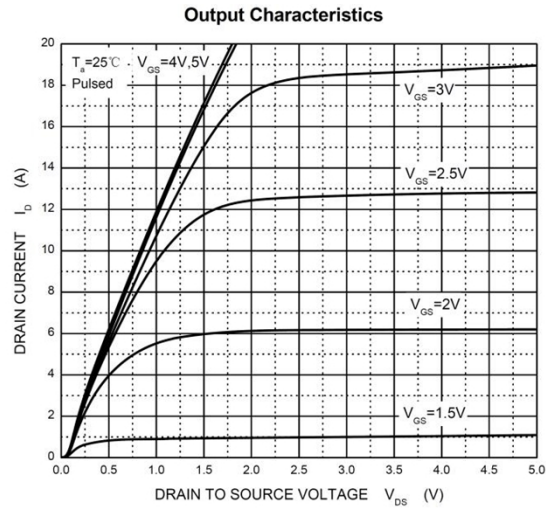
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

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> =16V, V <sub>GS</sub> = 0V			1	uA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±12V, V <sub>DS</sub> = 0V			±0.1	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	R <sub>DS(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =1A		60	80	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =1A		70	110	
Dynamic Characteristics						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1MHz		300		pF
Output capacitance	C <sub>oss</sub>			120		
Reverse transfer capacitance	C <sub>rss</sub>			80		
Switching Characterisitics						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V,V <sub>GS</sub> =4.5V, I <sub>D</sub> =3.6A		4.0		nC
Gate-Source Charge	Q <sub>gs</sub>			0.65		
Gate-Drain Charge	Q <sub>gd</sub>			1.5		
Turn-on Delay Time	T <sub>d(on)</sub>	V <sub>DD</sub> =10V, R <sub>L</sub> =5.5Ω, I <sub>D</sub> =3.6A, V <sub>GEN</sub> =4.5V R <sub>G</sub> =6Ω		7		nS
Turn-on Rise Time	T <sub>r</sub>			55		
Turn-Off Delay Time	T <sub>d(off)</sub>			16		
Turn-Off Fall Time	t <sub>f</sub>			10		
Source-Drain Diode Characteristics						
Diode Forward voltage	V <sub>DS</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> = 0V			1.2	V

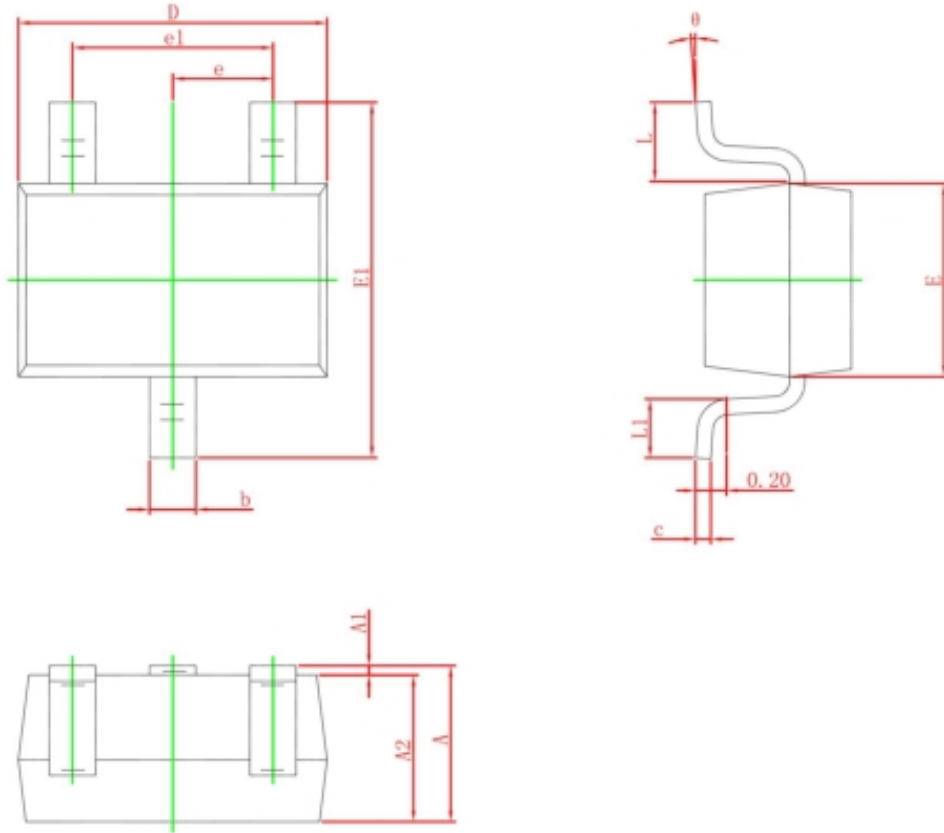
### Notes:

1. Pulse Test: Pulse Width < 300 $\mu s$ , Duty Cycle  $\leq 2\%$ .
2. These parameters have no way to verify.

## 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°