

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	40mΩ@4.5V	2.1A
	60mΩ@2.5V	

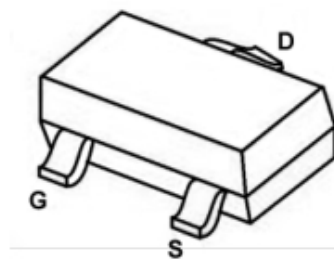
Feature

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

Applications

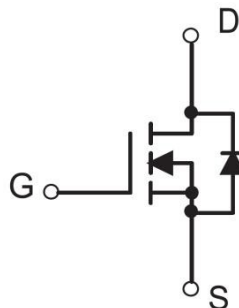
- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

Package

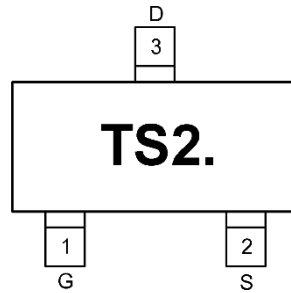


SOT-323

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}	± 10	V
Continuous Drain Current	I_D	2.1	A
Continuous Source-Drain Current(Diode Conduction)	I_S	0.6	A
Power Dissipation	P_D	0.2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics

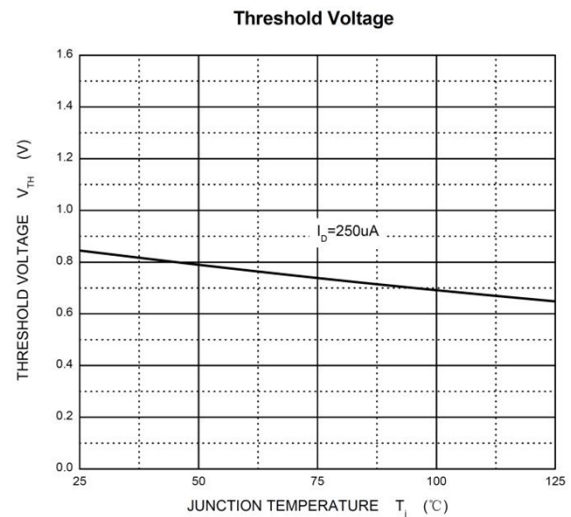
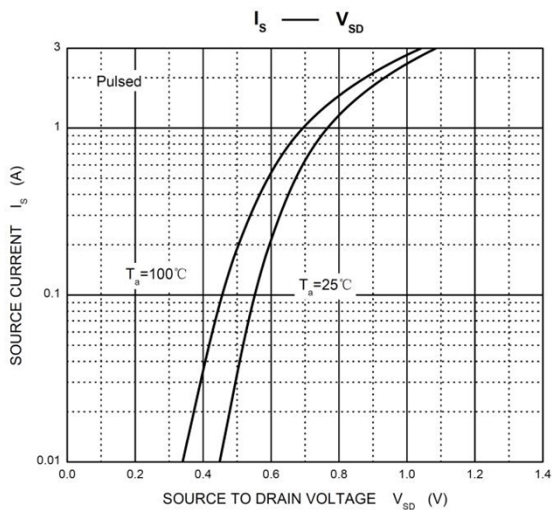
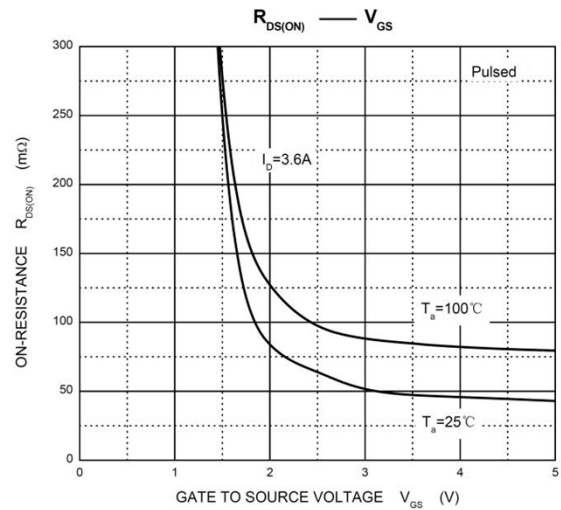
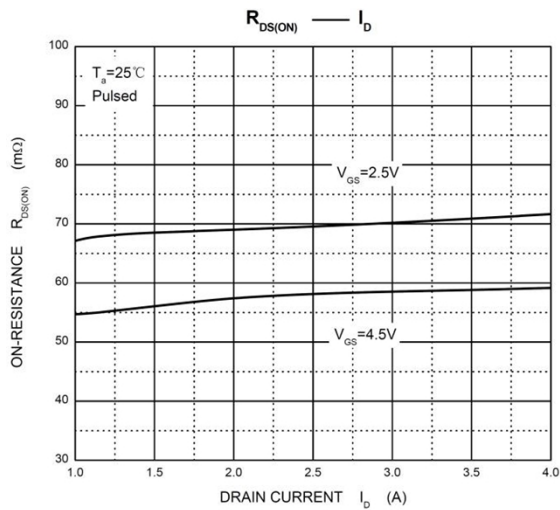
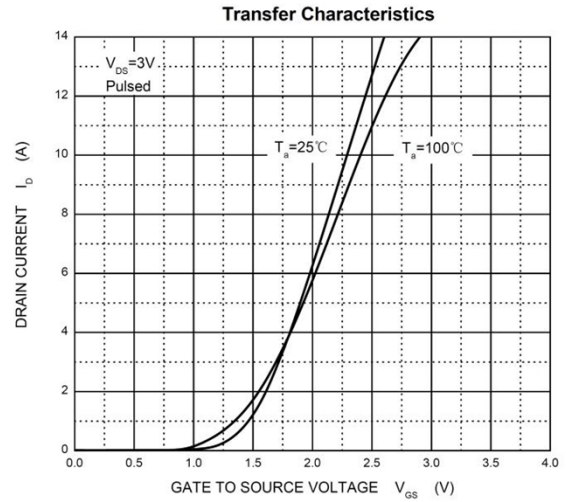
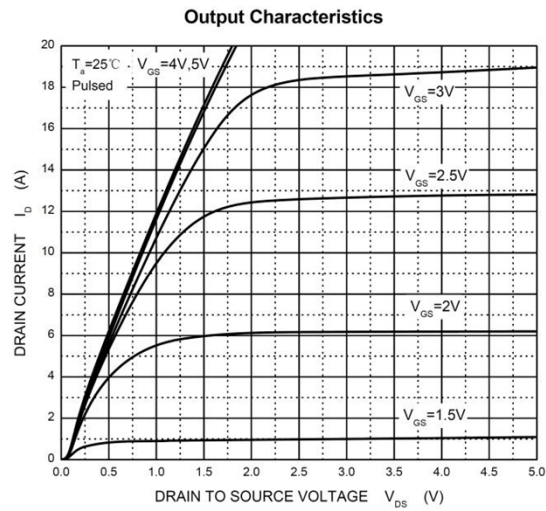
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V, V _{GS} = 0V			1	uA
Gate-body leakage current	I _{GSS}	V _{GS} =±8V, V _{DS} = 0V			±0.1	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 =2.9A		40	60	mΩ
		V _{GS} =2.5V, I _D =2.5A		60	90	
Dynamic Characteristics						
Input capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHz		300		pF
Output capacitance	C _{oss}			120		
Reverse transfer capacitance	C _{rss}			80		
Total Gate Charge	Q _g	V _{DS} =10V,V _{GS} =4.5V, I _D =3.6A		4.0	10	nC
Gate-Source Charge	Q _{gs}			0.65		
Gate-Drain Charge	Q _{gd}			1.5		
Switching Characterisitics						
Turn-on Delay Time	T _{d(on)}	V _{DS} =10V, R _L =5.5Ω, I _D =3.6A, V _{GEN} =4.5V R _G =6Ω		7	15	nS
Turn-on Rise Time	T _r			55	80	
Turn-Off Delay Time	T _{d(off)}			16	60	
Turn-Off Fall Time	t _f			10	25	
Source-Drain Diode Characteristics						
Diode Forward voltage	V _{DS}	I _S =0.94A, V _{GS} = 0V		0.76	1.2	V

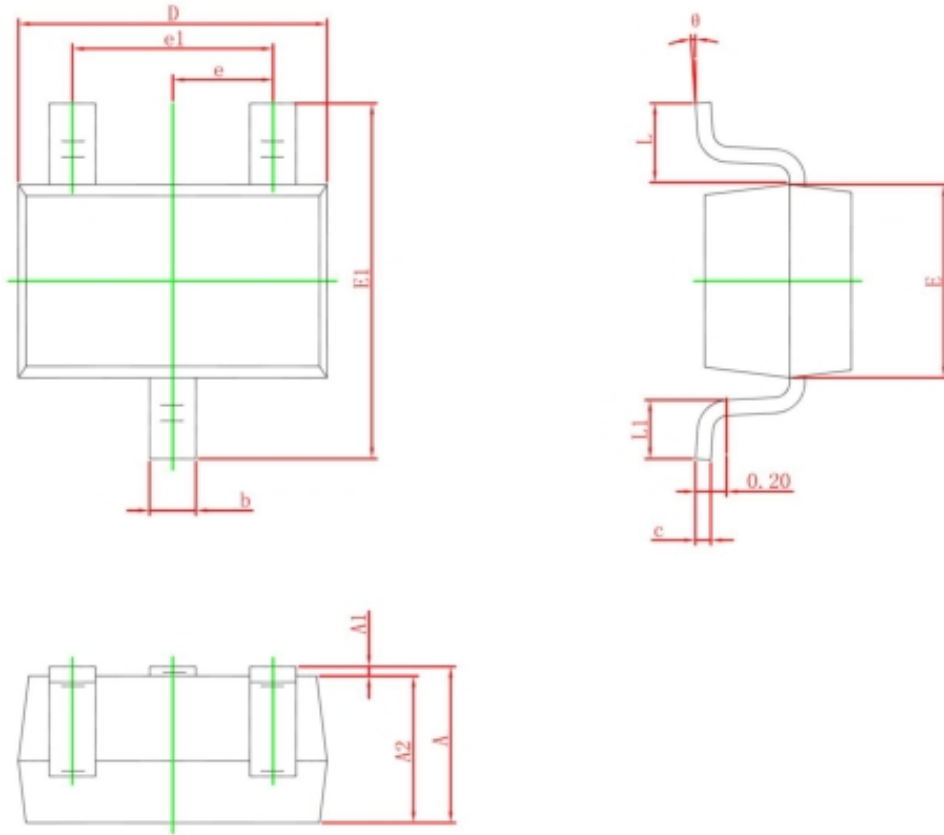
Notes:

1. Pulse Test: Pulse Width < 300 μs , 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°