

Product Summary

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

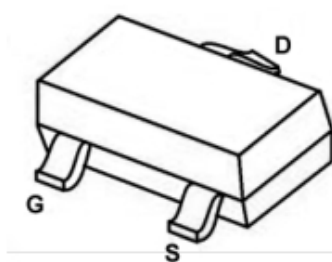
Feature

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

Applications

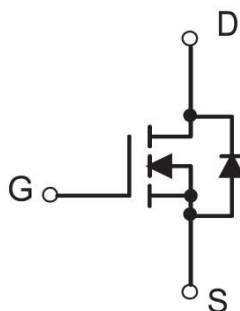
- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

Package

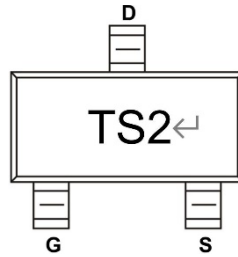


SOT-323

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

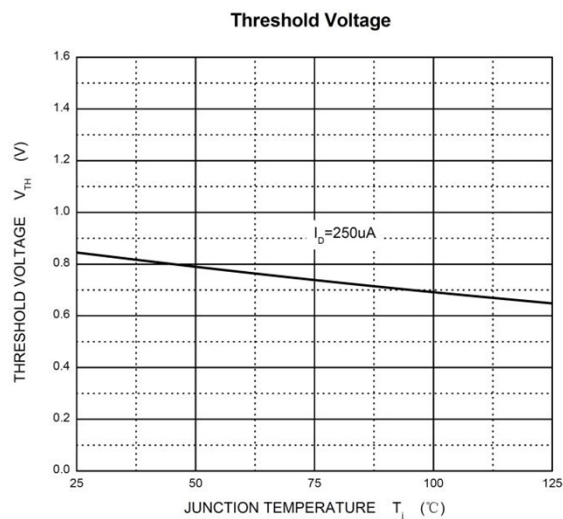
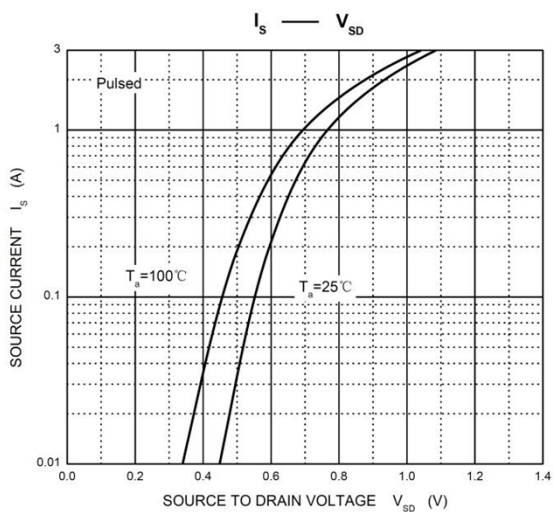
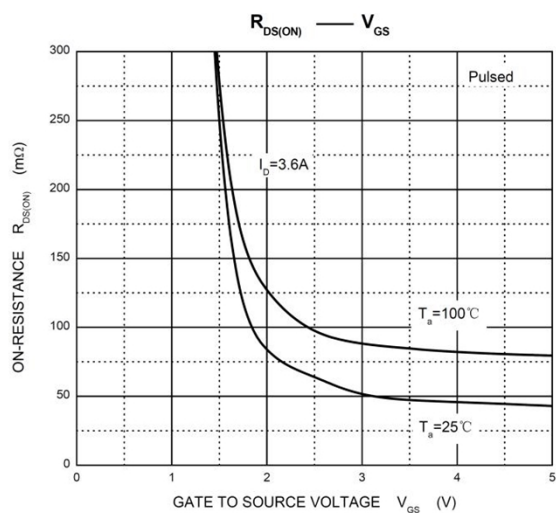
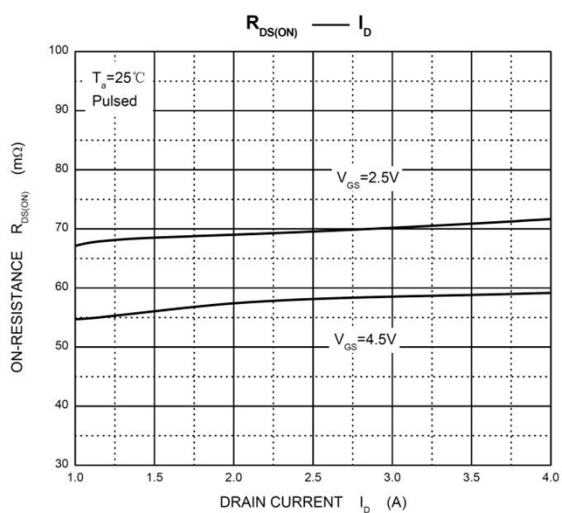
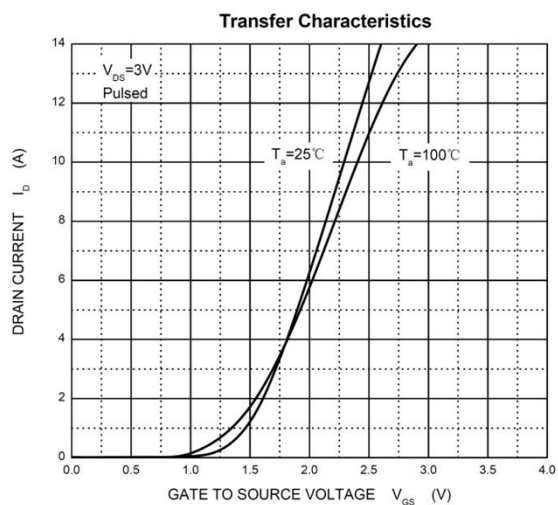
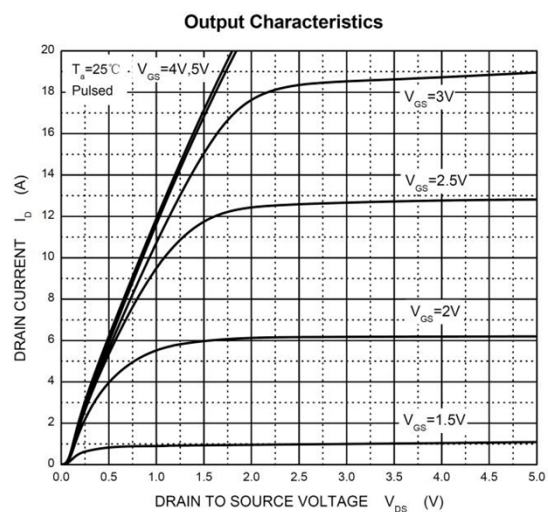
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$BV_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 0.1	μA
Gate threshold voltage ⁽¹⁾	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	0.7	1	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 2.9A$		40	60	m Ω
		$V_{GS} = 2.5V, I_D = 2.5A$		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	$T_{d(on)}$	$V_{DS}=10V, R_L = 5.5\Omega,$ $I_D = 3.6A, V_{GEN}=4.5V$ $R_G = 6\Omega$		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

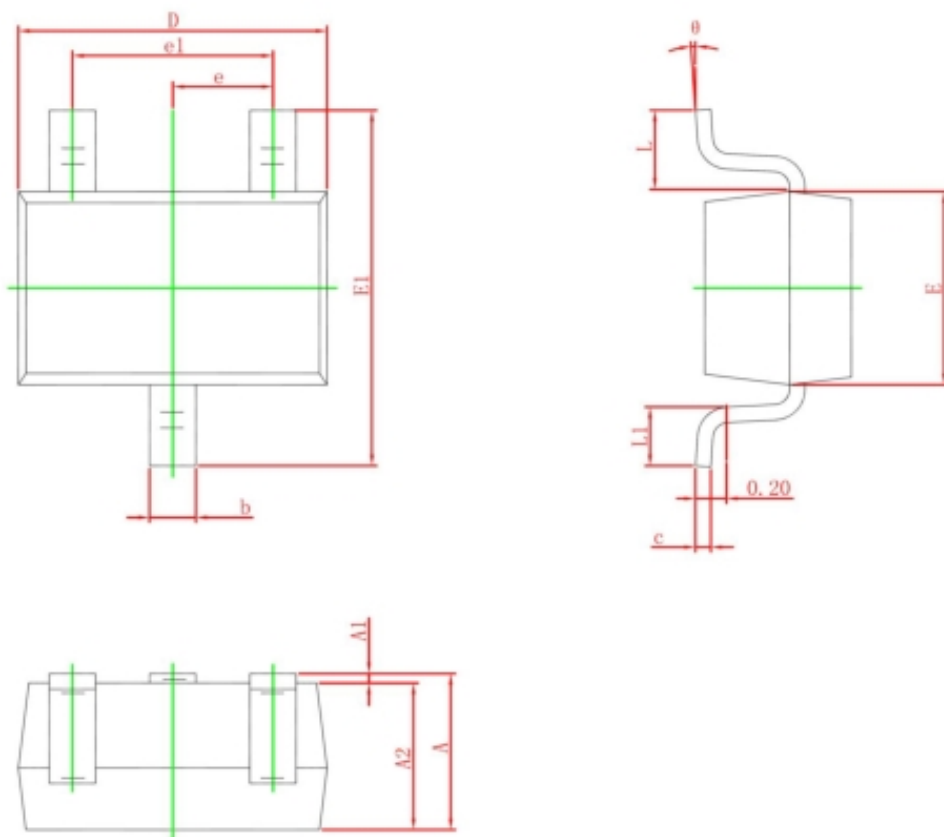
Notes:

1. Pulse Test: Pulse Width < 300 μs , Duty Cycle $\leq 2\%$.
2. 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°