

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
20V	68mΩ@4.5V	2.1A
	115mΩ@2.5V	

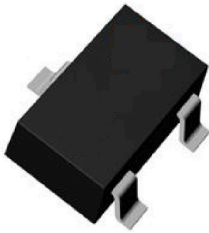
### Feature

- Advanced trench process technology
- High density cell design for ultra low on-resistance

### Application

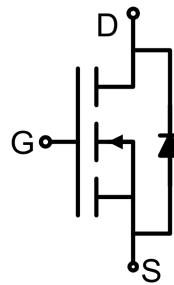
- Load Switch for Portable Devices
- DC/DC Converter

### Package

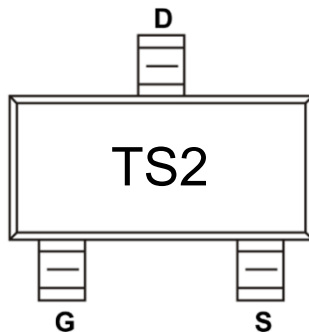


SOT-323

### Circuit diagram



### Marking



### Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	±8	V
Continuous Drain Current	$I_D$	2.1	A
Power Dissipation	$P_D$	0.2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-55 ~ +150	°C

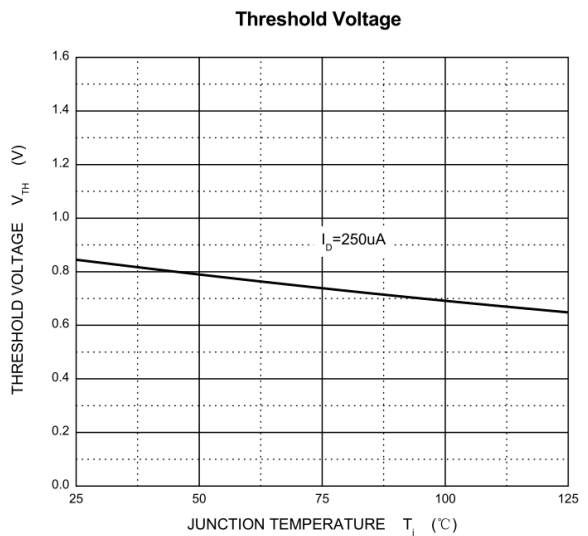
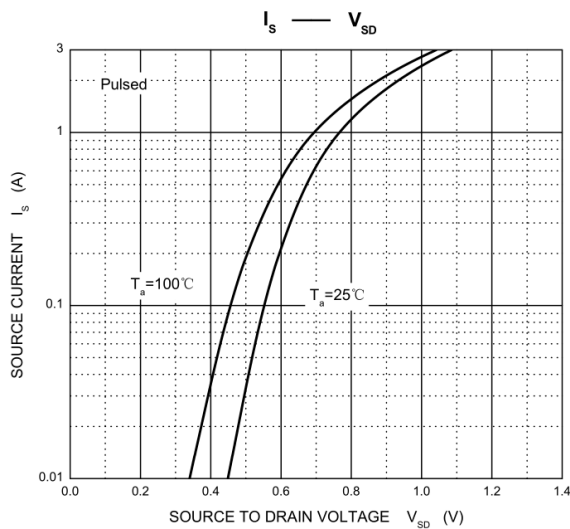
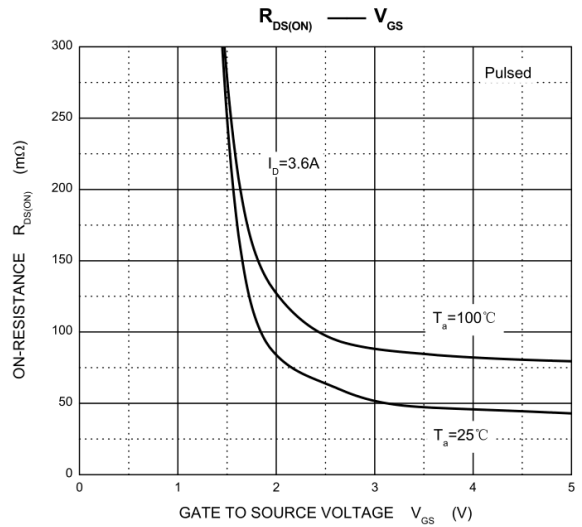
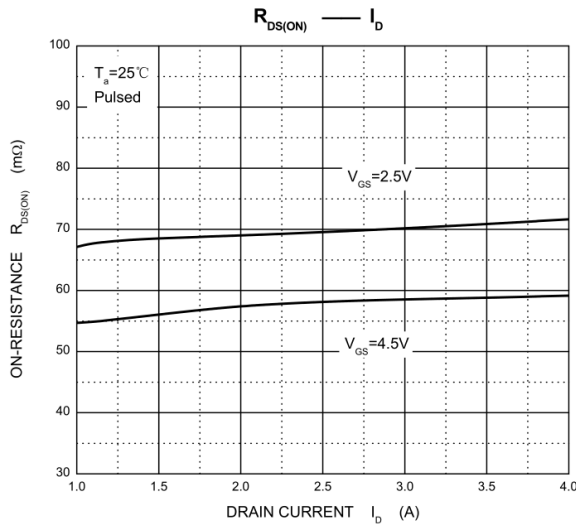
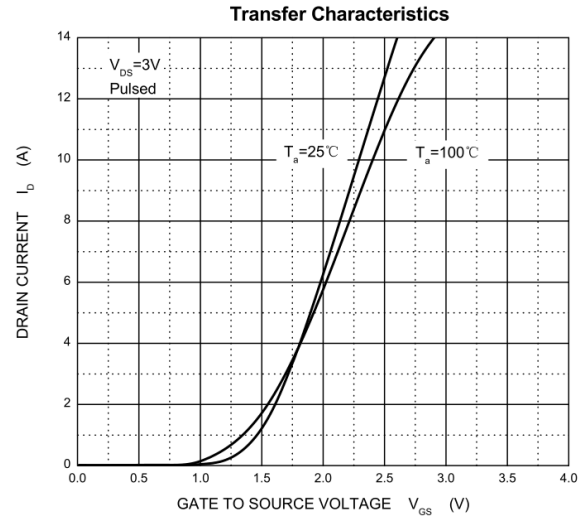
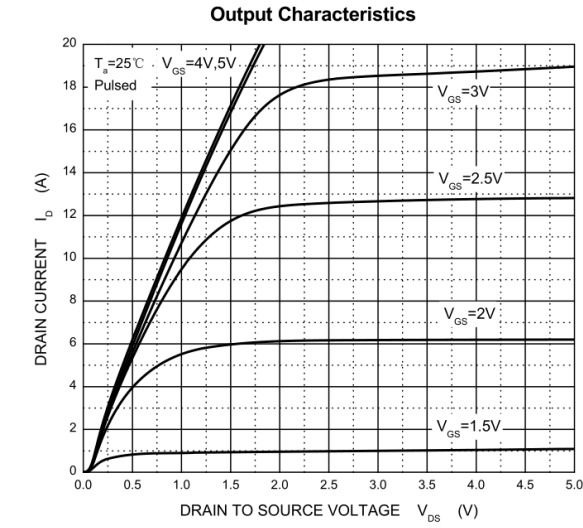
### Electrical characteristics (T<sub>A</sub>=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 10\mu A$	20			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0V$			1	μA
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 8V, V_{DS} = 0V$			±100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 50\mu A$	0.65		1.2	V
Drain-source on-resistance <sup>1)</sup>	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3.6A$		59	68	mΩ
		$V_{GS} = 2.5V, I_D = 3.1A$		70	115	
Forward transconductance <sup>1)</sup>	$g_{FS}$	$V_{DS} = 5V, I_D = 3.6A$		8		S
<b>Dynamic characteristics<sup>2)</sup></b>						
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		nC
Gate-Source Charge	$Q_{gs}$			0.65		
Gate-Drain Charge	$Q_{gd}$			1.5		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 10V, V_{GS} = 4.5V, I_D = 3.6A, R_L = 5.5\Omega, R_{GEN} = 6\Omega$		7		nS
Turn-on rise time	$t_r$			55		
Turn-off delay time	$t_{d(off)}$			16		
Turn-off fall time	$t_f$			10		
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage	$V_{DS}$	$V_{GS} = 0V, I_S = 0.94A$			1.2	V

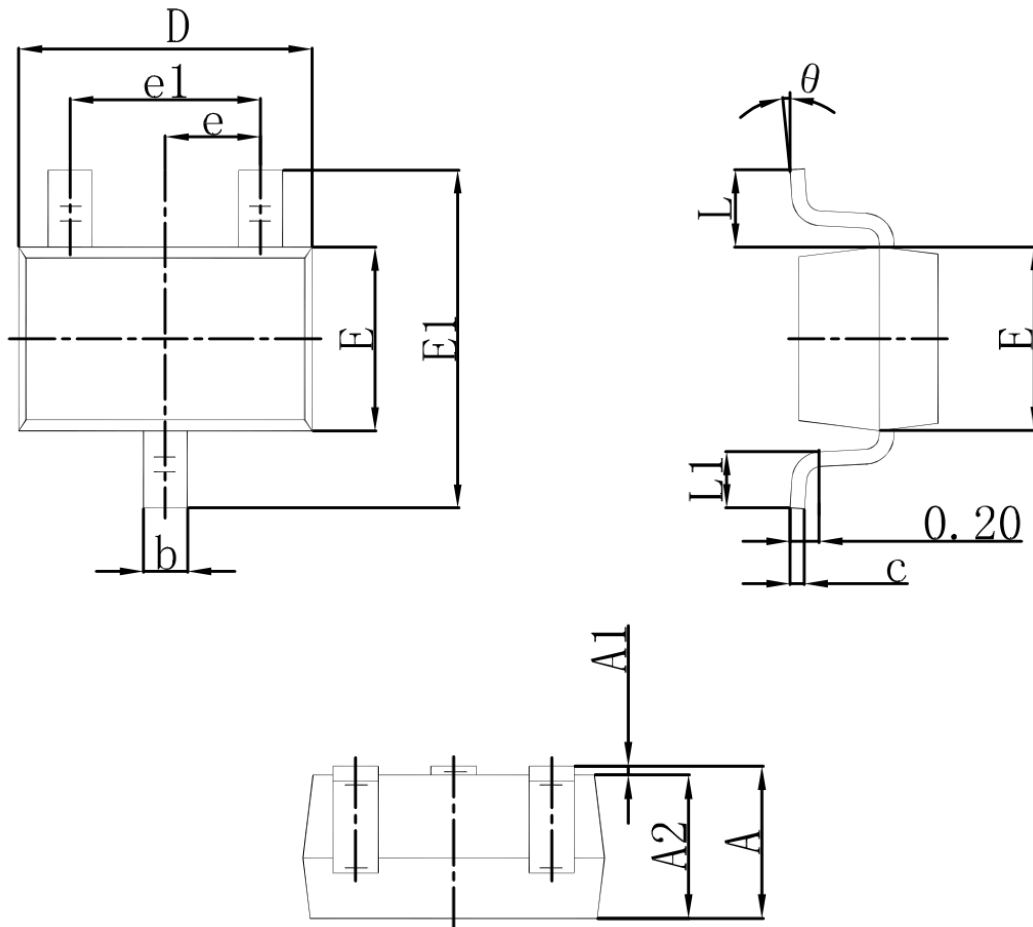
Notes:

- 1) Pulse Test: Pulse Width < 300μs, Duty Cycle ≤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	2.150	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
$\theta$	0°	8°	0°	8°

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