

SOT-323 Plastic-Encapsulate MOSFET

20V P-Channel MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	103mΩ@-4.5V	-1.4A
	116mΩ@-2.5V	
	155mΩ@-1.8V	

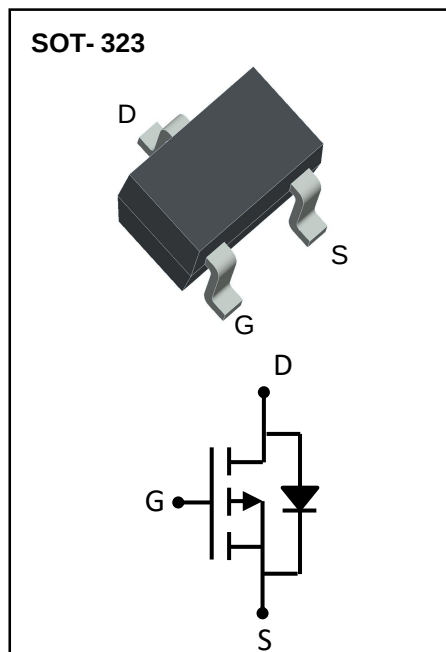
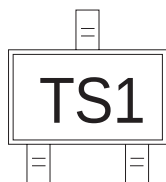
Feature

- Leading Trench Technology for Low $R_{DS(on)}$
- Extending Battery Life

Application

- High Side Load Switch
- Charging Circuit
- Single Cell Battery Applications

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 ^{1,2}	I_D	-1.4	A
Pulsed Drain Current	I_{DM}	-3.0	A
Power Dissipation	P_D	0.2	W
Thermal Resistance from Junction to Ambient ^{1,2}	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -16V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±8V, V _{DS} = 0V			±100	nA
On Characteristics ³						
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.4	-0.7	-1.0	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -1.0A		103	125	mΩ
		V _{GS} = -2.5V, I _D = -0.5A		116	140	
		V _{GS} = -1.8V, I _D = -0.3A		155	210	
Forward tranconductance	g _{FS}	V _{DS} = -10V, I _D = -0.8A		2.7		S
Dynamic Characteristics						
Input Capacitance	C _{iSS}	V _{DS} = -10V, V _{GS} = 0V, f = 1MHz		321		pF
Output Capacitance	C _{oSS}			55		
Reverse Transfer Capacitance	C _{rSS}			45		
Switchig Characteristics						
Turn-on delay time	t _{d(on)}	V _{GS} = -4.5V, V _{DD} = -4.0V, I _D = -1.0A, R _G = 6.2Ω		5.9		ns
Turn-on rise time	t _r			13		
Turn-off delay time	t _{d(off)}			24		
Turn-off fall time	t _f			16		
Total Gate Charge	Q _g	V _{DS} = -10V, V _{GS} = -2.5V, I _D = -3.0A		3.2		nC
Gate-Source Charge	Q _{gs}			0.6		
Gate-Drain Charge	Q _{gd}			1.2		
Diode Characteristics						
Diode Forward voltage ³	V _{DS}	V _{GS} = 0V, I _S = -0.3A			-1.2	V

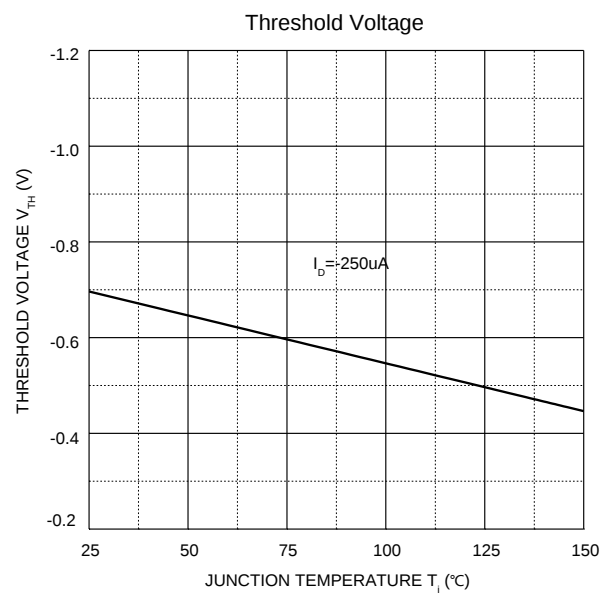
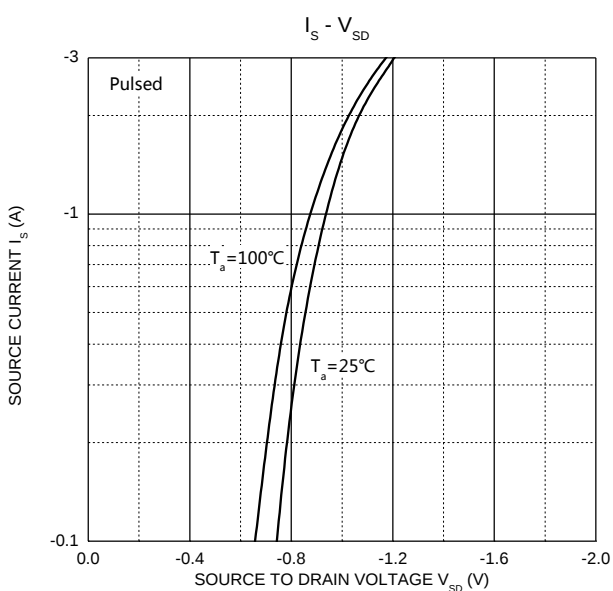
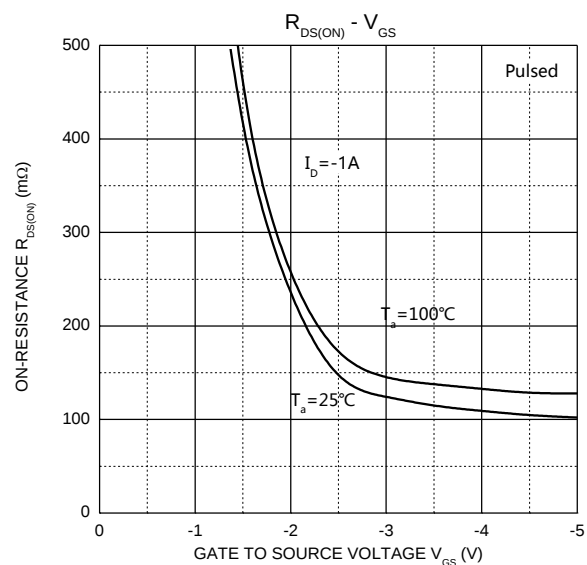
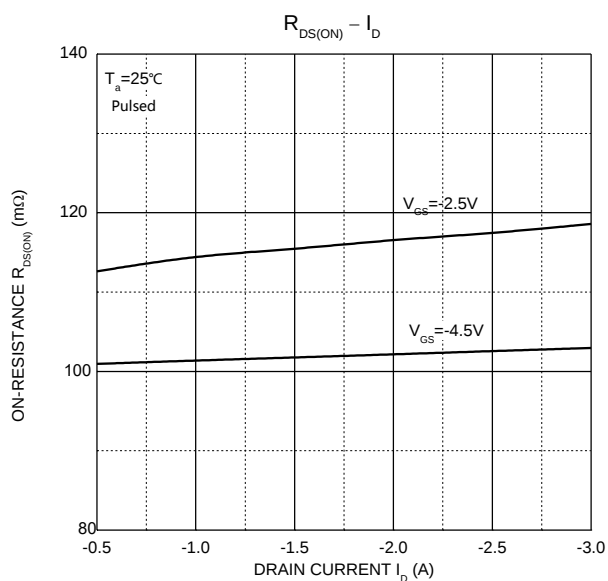
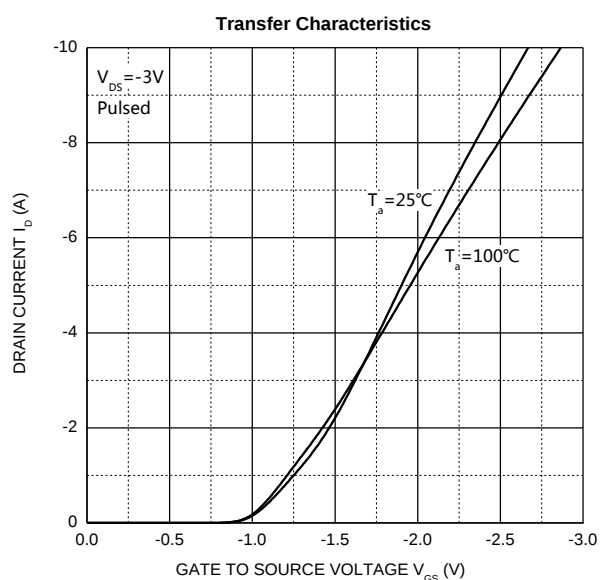
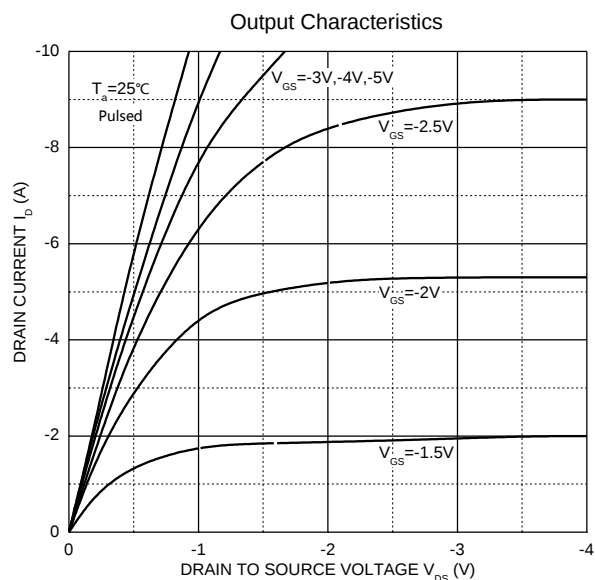
Notes :

1. R_{θJA} is measured with the device mounted on 1 in² FR4 board with 1oz. single side copper, in a still air environment with T_A = 25°C.

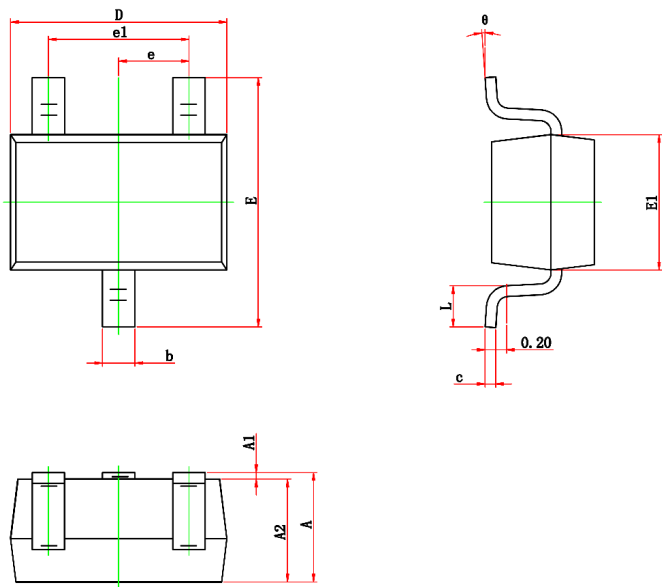
2. R_{θJA} is measured in the steady state

3. Pulse test : Pulse width ≤ 380μs, duty cycle ≤ 2%.

Typical Characteristics

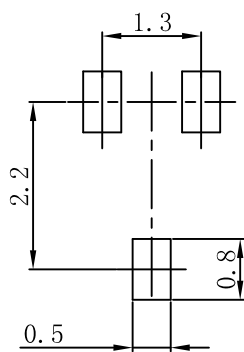


SOT-323 Package Outline Dimensions



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	0.050	0.150	0.002	0.006
D	1.900	2.200	0.075	0.087
E	2.000	2.450	0.079	0.096
E1	1.150	1.350	0.045	0.053
e	0.650TYP.		0.026TYP.	
e1	1.200	1.400	0.047	0.055
L	0.200	0.460	0.008	0.018
θ	0°	8°	0°	8°

SOT-323 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

NOTICE

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