

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	48mΩ@4.5V	3A
	55mΩ@2.5V	
	69mΩ@2.5V	

Feature

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

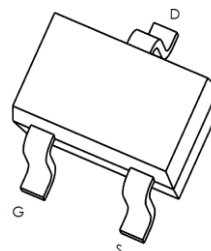
Application

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

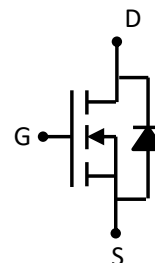
MARKING:



SOT-323



Schematic diagram



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}	± 12	V
Continuous Drain Current	I_D	3	A
Pulsed Drain Current ($t=300\mu\text{s}$)	I_{DM}	9	A
Power Dissipation	P_D	0.2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

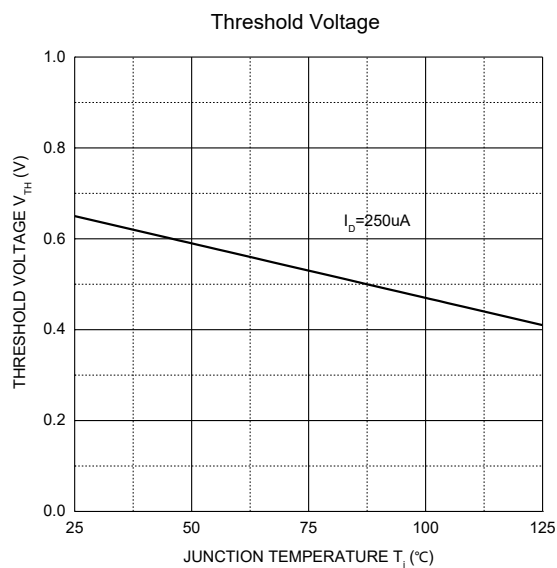
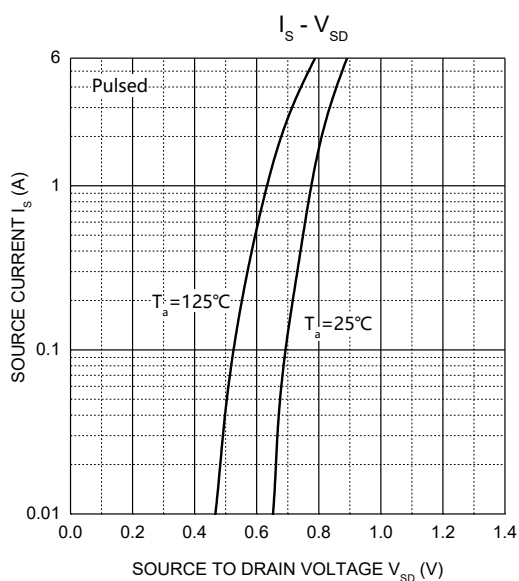
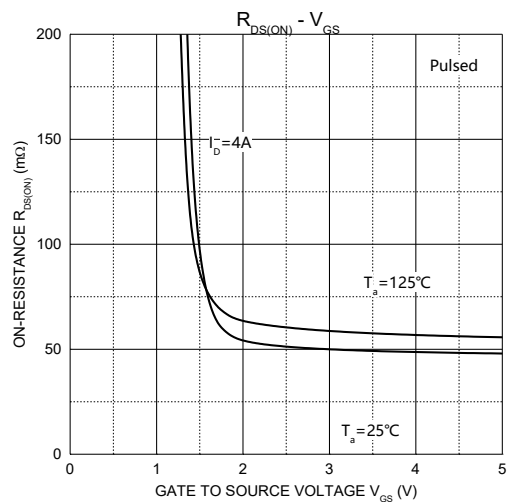
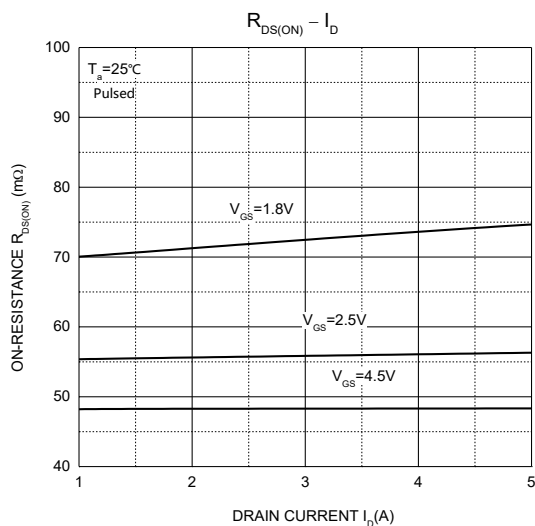
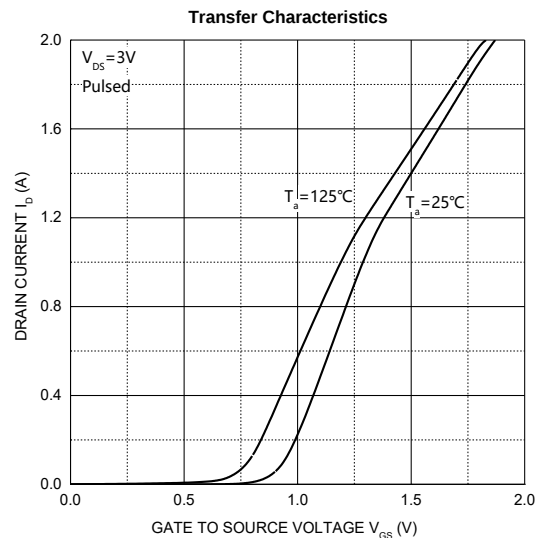
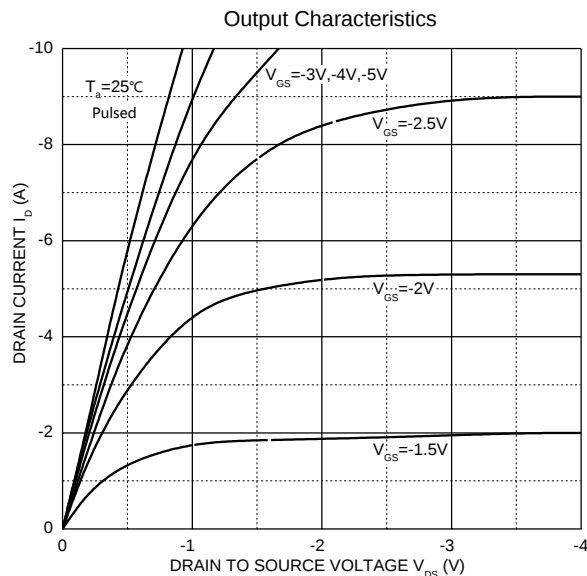
MOSFET ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$ unless otherwise noted)

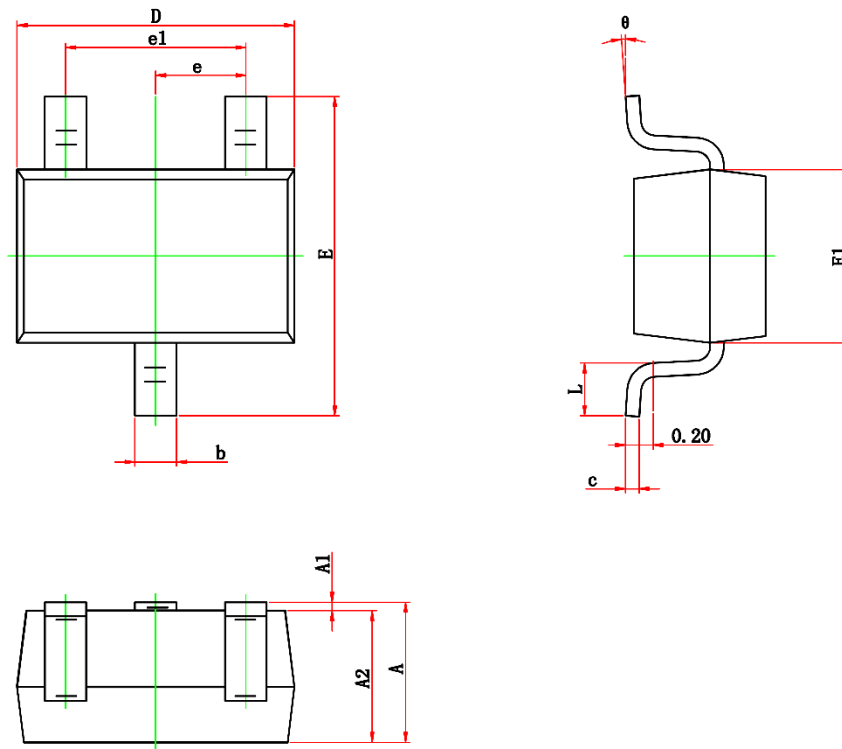
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =16V,V _{GS} = 0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V			±0.1	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.4	0.6	1.0	V
Drain-Source On-Resistance ¹	R _{DS(on)}	V _{GS} =4.5V, I _D =4A		48	63	mΩ
		V _{GS} =2.5V, I _D =2.5A		55	72	
		V _{GS} =1.8V, I _D =1.5A		69	100	
Forward Tranconductance ¹	g _{FS}	V _{DS} =5V, I _D =4A	10			S
Dynamic Characteristics						
Input Capacitance ²	C _{iss}	V _{DS} =10V,V _{GS} =0V,f=1MHz		480		pF
Output Capacitance ²	C _{oss}			85		
Reverse Transfer Capacitance ²	C _{rss}			65		
Total Gate Charge	Q _g	V _{DS} =10V,V _{GS} =4.5V,I _D =4A		6.8		nC
Gate-Source Charge	Q _{gs}			1.1		
Gate-Drain Charge	Q _{gd}			2.8		
Switching Characteristics ²						
Turn-On Delay Time	t _{d(on)}	V _{DD} =10V, R _L =5.5Ω,I _D =4A V _{GEN} =4.5V,R _g =6Ω		12		ns
Turn-On Rise Time	t _r			80		
Turn-Off Delay Time	t _{d(off)}			26		
Turn-Off Fall Time	t _f			13		
Source-Drain Diode characteristics						
Diode Forward Voltage	V _{DS}	V _{GS} =0V, I _S =1A		0.7	1.2	V

Notes:

1. Pulse test; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics



SOT-323 Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.800	1.100	0.031	0.043
A1	0.000	0.100	0.000	0.004
A2	0.800	1.100	0.031	0.043
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°

Attention:

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
- Any and all semiconductor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.
- GreenPower Electronics products belong to consumer electronics or other civilian electronic products.