



#### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
30V	20mΩ@10V	5.8A
	22mΩ@4.5V	
	25mΩ@2.5V	

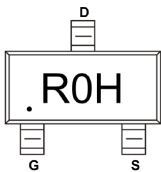
#### Features

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

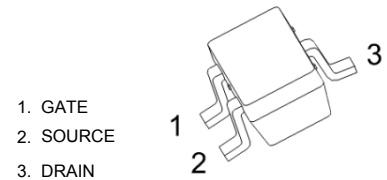
#### Application

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

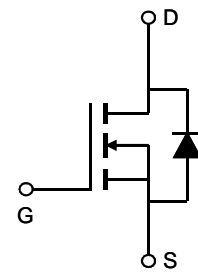
#### MARKING:



#### SOT-23-3L



#### Schematic diagram



#### ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	5.8	A
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	30	A
Power Dissipation	$P_D$	1.2	W
Thermal Resistance from Junction to Ambient <sup>2</sup>	$R_{\theta JA}$	104	$^\circ\text{C/W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^\circ\text{C}$

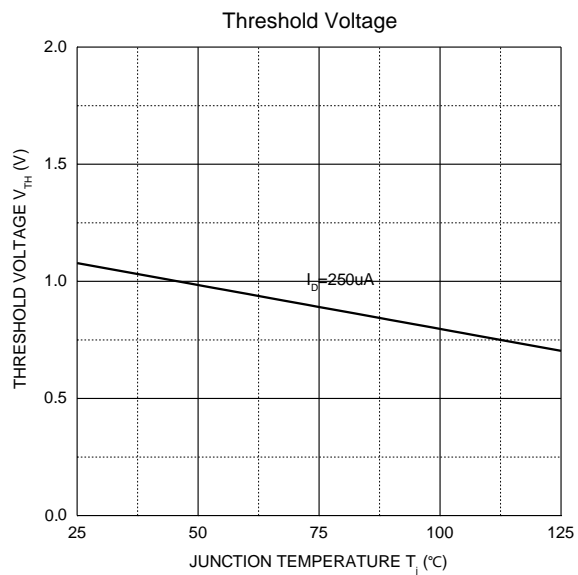
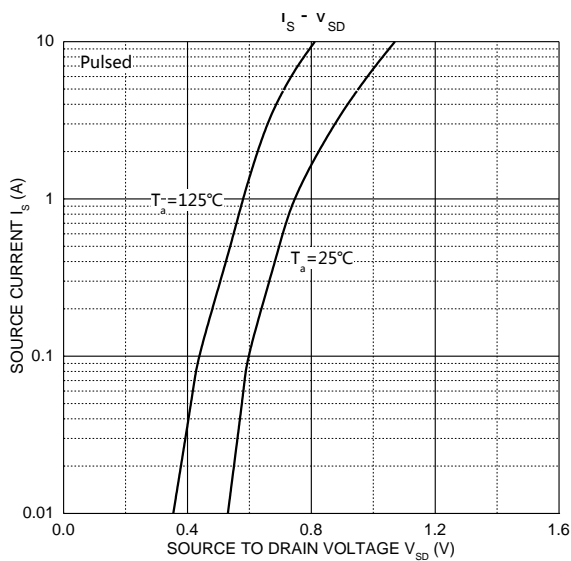
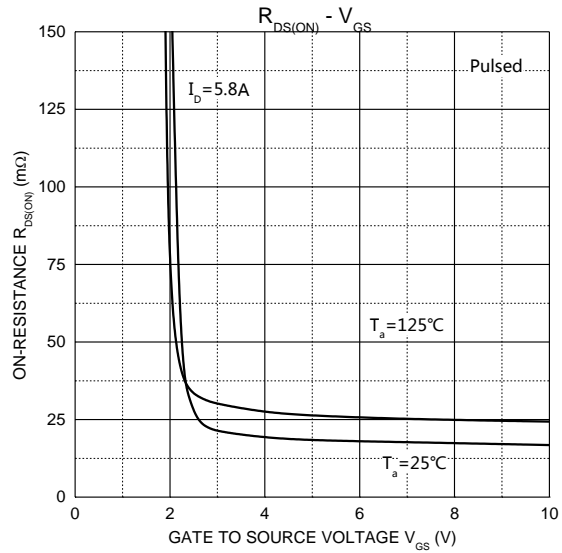
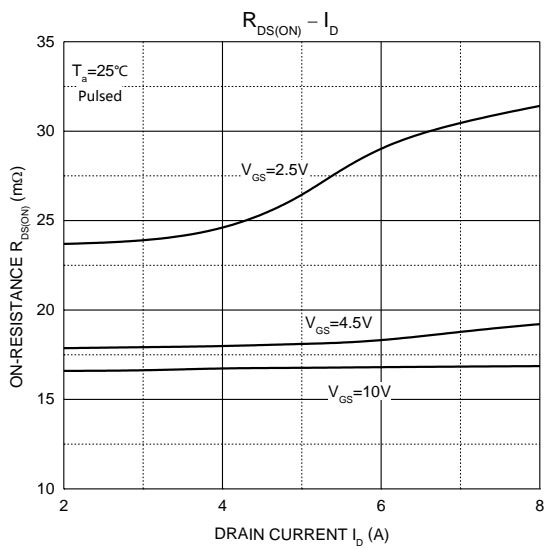
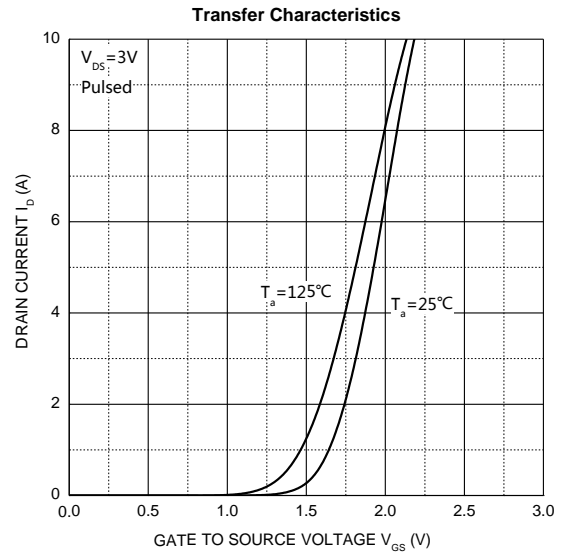
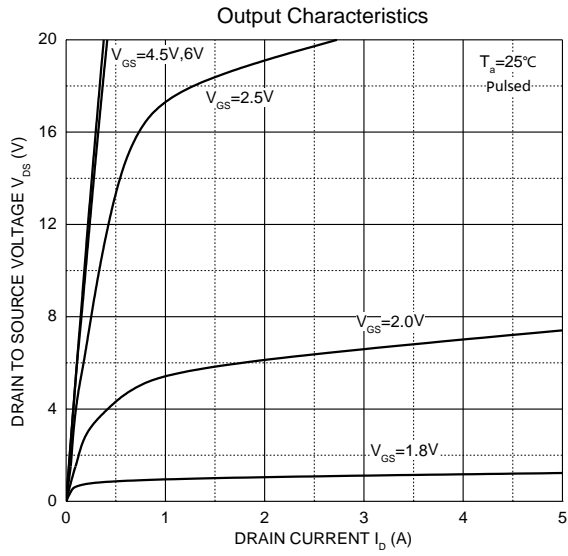
**MOSFET ELECTRICAL CHARACTERISTICS( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 24V, V_{GS} = 0V$			1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			$\pm 0.1$	$\mu A$
Gate Threshold Voltage <sup>3</sup>	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.7	1.0	1.4	V
Drain-Source On-Resistance <sup>3</sup>	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5.8A$		20	27	m $\Omega$
		$V_{GS} = 4.5V, I_D = 5A$		22	30	
		$V_{GS} = 2.5V, I_D = 4A$		25	48	
Forward Transconductance <sup>3</sup>	$g_{FS}$	$V_{DS} = 5V, I_D = 5A$	8			S
<b>Dynamic Characteristics<sup>4</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$			1155	pF
Output Capacitance	$C_{oss}$			108		
Reverse Transfer Capacitance	$C_{rss}$			84		
Gate Resistance	$R_g$	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$			3.6	$\Omega$
<b>Switching Characteristics<sup>4</sup></b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 15V,$ $R_L = 3\Omega, R_{GEN} = 3\Omega$		8		ns
Turn-On Rise Time	$t_r$			54		
Turn-Off Delay Time	$t_{d(off)}$			28		
Turn-Off Fall Time	$t_f$			3.5		
<b>Source-Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	$V_{SD}$	$V_{GS} = 0V, I_S = 1A$			1	V

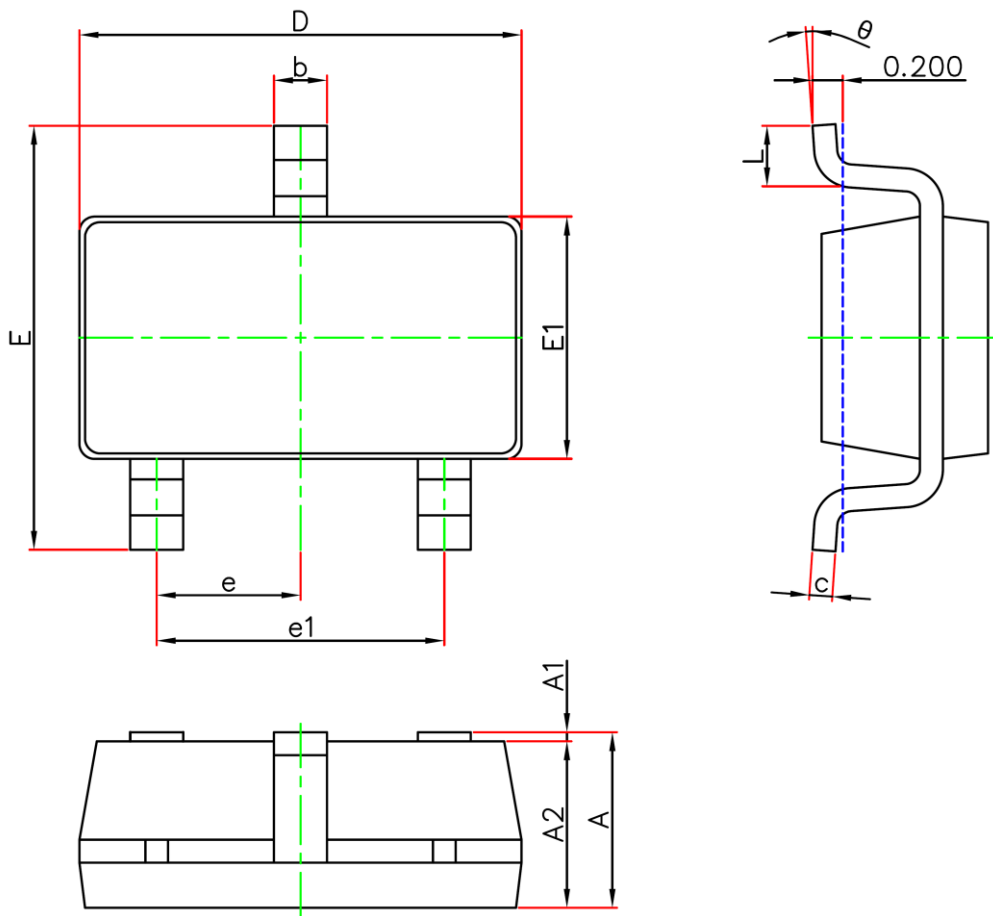
**Notes:**

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board,  $t < 5\text{sec}$ .
3. Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production testing.

## Typical Electrical and Thermal Characteristics



## SOT-23-3L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0	0.150	0.000	0.006
A2	1.050	1.250	0.041	0.049
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	2.650	2.950	0.104	0.116
E1	1.500	1.700	0.059	0.067
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
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.