



### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
-30V	470mΩ@-10V	-0.45A
	680mΩ@-4.5V	

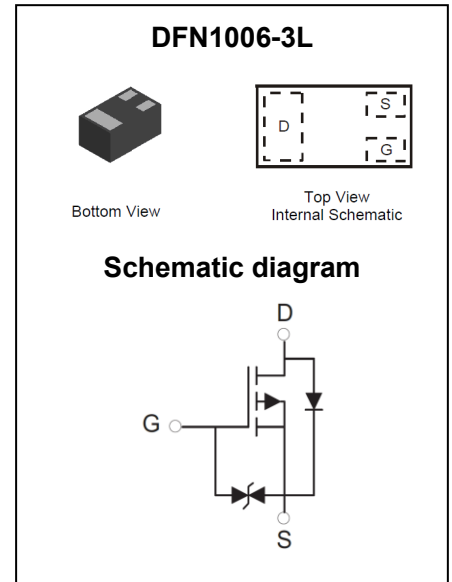
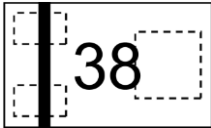
### Feature

- Trench Technology Power MOSFET
- Low  $R_{DS(ON)}$
- Low Gate Charge
- ESD Protected

### Application

- Load Switch
- DC/DC Converter

### MARKING:



### 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 <sup>1,5</sup>	$I_D$	-0.45	A
	$T_A = 25^\circ\text{C}$		
Pulsed Drain Current <sup>2</sup>	$I_{DM}$	-1.8	A
Power Dissipation <sup>4,5</sup>	$P_D$	0.3	W
	$T_A = 25^\circ\text{C}$		
Thermal Resistance from Junction to Ambient <sup>5</sup>	$R_{\theta JA}$	416	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^\circ\text{C}$

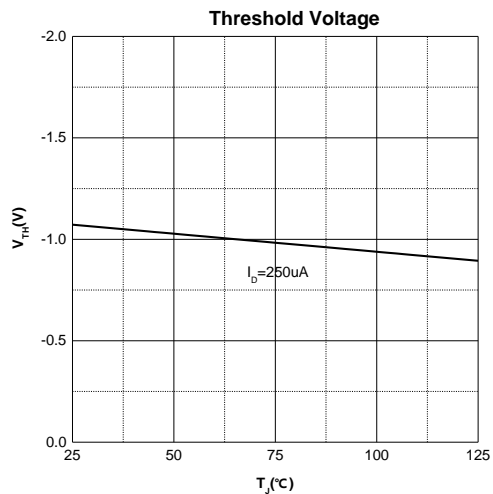
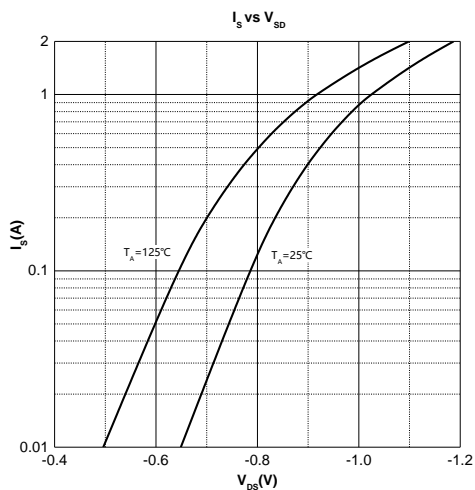
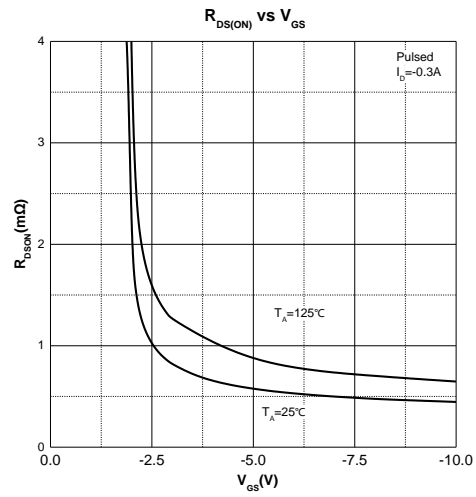
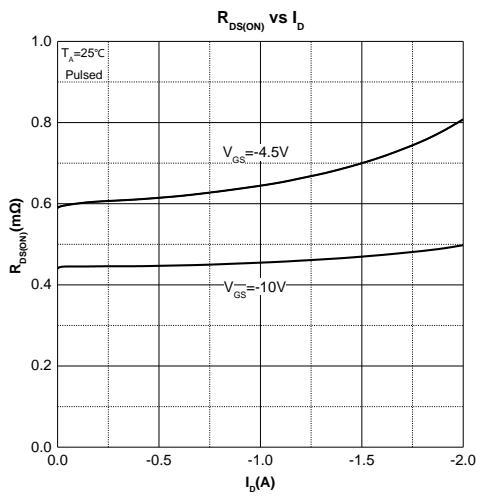
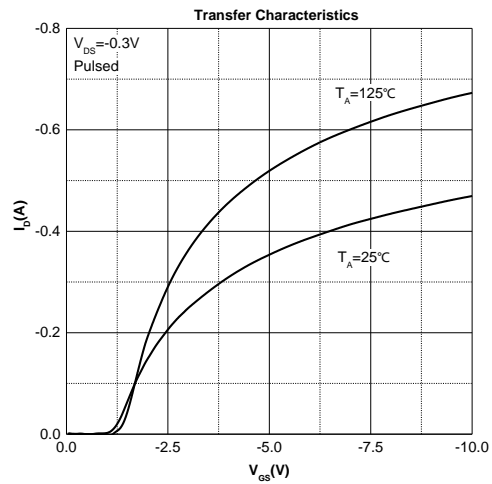
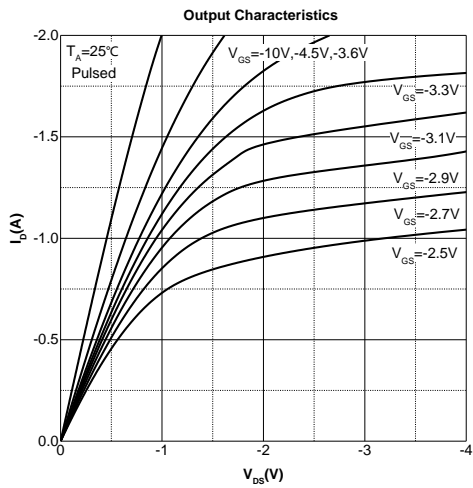
**MOSFET ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)**

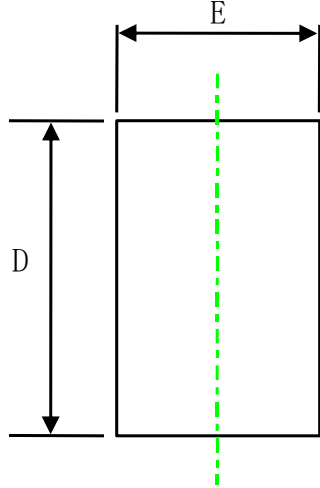
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	-30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -30V, V <sub>GS</sub> = 0V			1	μA
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±10V, V <sub>DS</sub> = 0V			±5	μA
<b>On Characteristics<sup>3</sup></b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	-0.5	-1	-1.5	V
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -0.3A		470	800	mΩ
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -0.3A		680	900	
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1MHz		55.2		pF
Output Capacitance	C <sub>oss</sub>			10.8		
Reverse Transfer Capacitance	C <sub>rss</sub>			7.4		
Gate Resistance	R <sub>g</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = 0V, f = 1MHz		13.4		Ω
<b>Switching Characteristics</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -0.5A		0.60		nC
Gate-source Charge	Q <sub>gs</sub>			0.46		
Gate-Drain Charge	Q <sub>gd</sub>			0.12		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10V, V <sub>GS</sub> = -4.5V, R <sub>L</sub> = 50Ω, R <sub>G</sub> = 3Ω		8.5		ns
Turn-On Rise Time	t <sub>r</sub>			5.8		
Turn-Off Delay Time	t <sub>d(off)</sub>			31		
Turn-Off Fall Time	t <sub>f</sub>			18		
<b>Source-Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = -0.3A			-1.2	V

Notes :

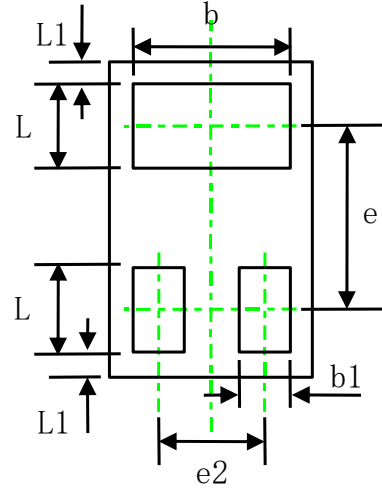
- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 4.The power dissipation P<sub>D</sub> is limited by T<sub>J(MAX)</sub> = 150°C.
- 5.Device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with T<sub>A</sub> =25°C.

**Typical Characteristics**

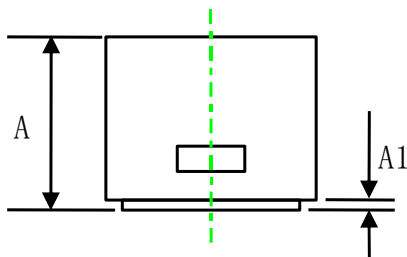


**DFN1006-3L Package Information**


TOP VIEW  
[顶视图]



BOTTOM VIEW  
[底视图]



SIDE VIEW  
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.400	0.550	0.016	0.022
A1	0.000	0.050	0.000	0.002
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
b	0.400	0.600	0.016	0.024
e	0.65 TYP		0.026 TYP	
e2	0.35 TYP		0.014 TYP	
L1	0.05 REF		0.002 REF	
L	0.200	0.300	0.008	0.012
b1	0.100	0.200	0.004	0.008

**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.