



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	320mΩ@4.5V	0.6A
	410mΩ@2.5V	

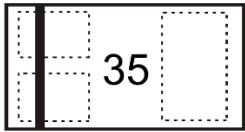
Feature

- Surface Mount Package
- N-Channel Switch with Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive

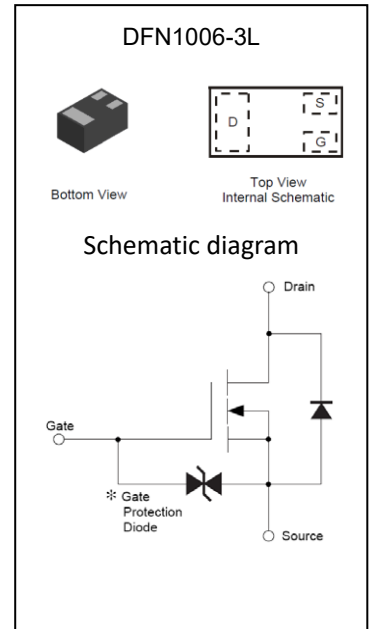
Application

- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

MARKING:



Top View
Bar Denotes Gate
and Source Side



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	0.6	A
Pulsed Drain Current ⁽¹⁾	I_{DM}	1.8	A
Power Dissipation ⁽²⁾	P_D	100	mW
Thermal Resistance from Junction to Ambient ⁽¹⁾	$R_{\theta JA}$	1250	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

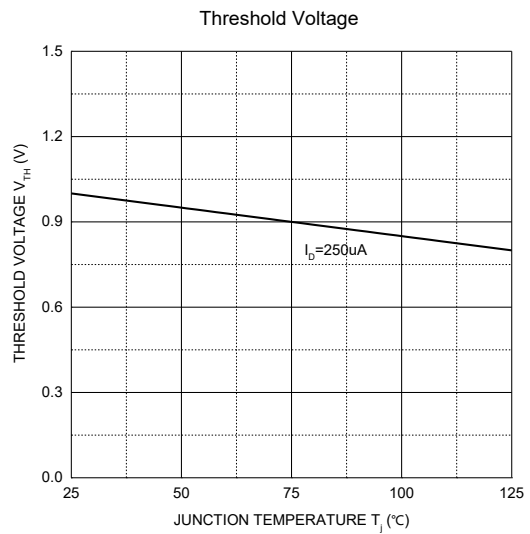
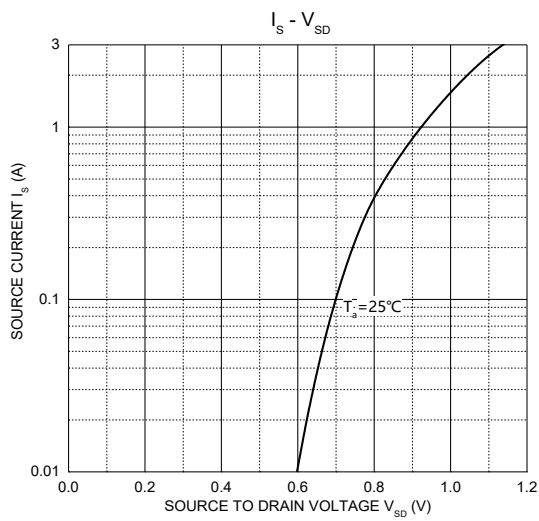
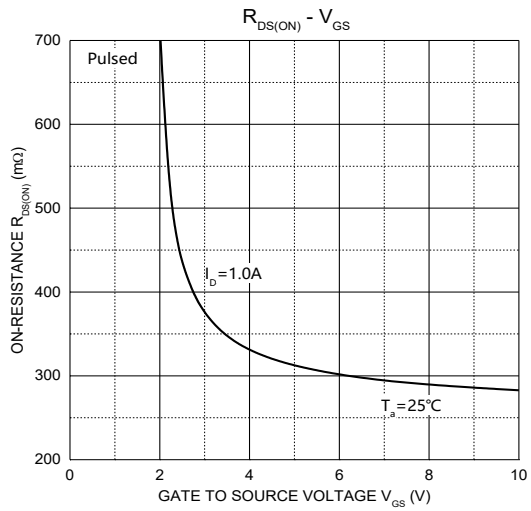
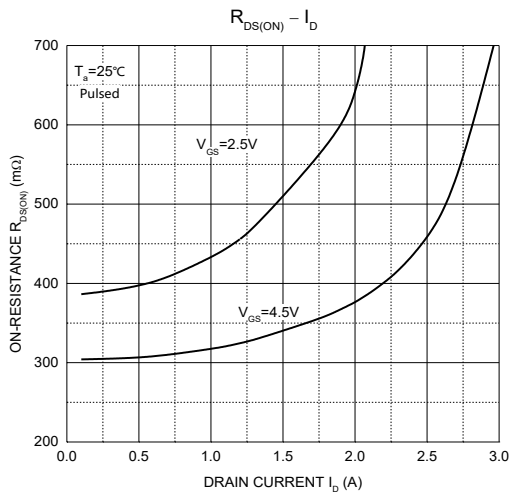
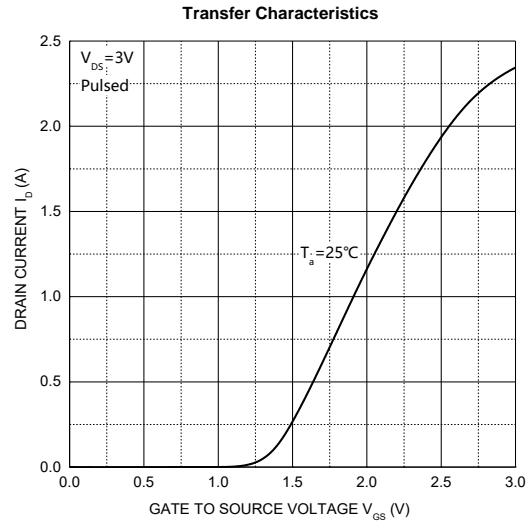
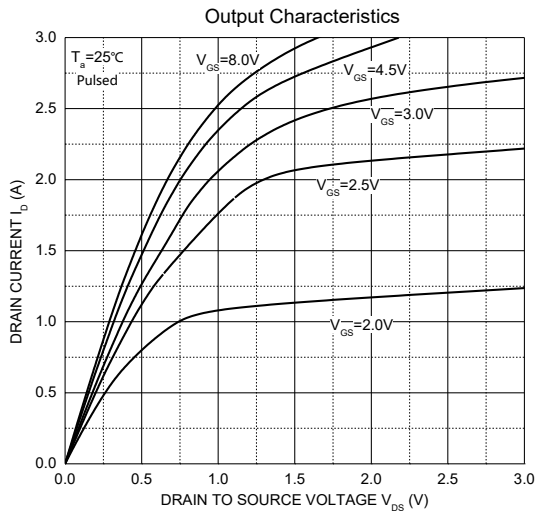
MOSFET ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$ unless otherwise noted)

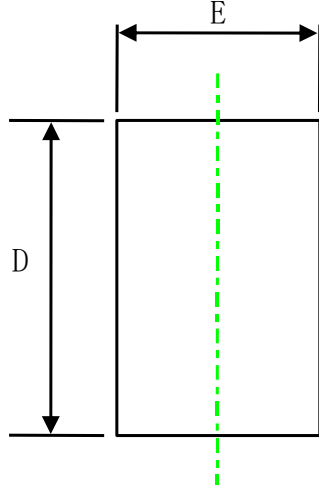
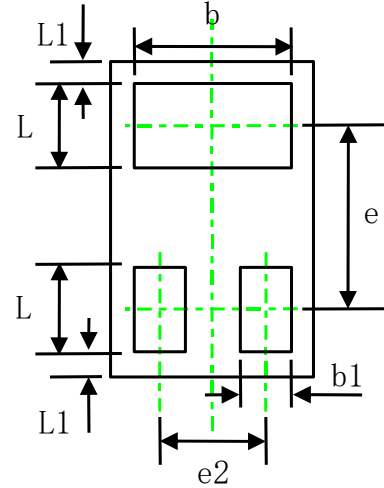
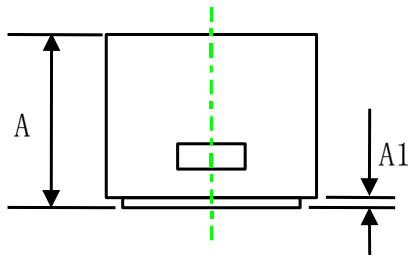
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 3	μA
Gate Threshold Voltage ⁽³⁾	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	1.0	1.5	V
Drain-Source On-Resistance ⁽³⁾	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 0.6A$		320	420	m Ω
		$V_{GS} = 2.5V, I_D = 0.3A$		410	580	
Forward Transconductance	g_{FS}	$V_{DS} = 5V, I_D = 0.5A$	0.1			S
Dynamic Characteristics⁽⁴⁾						
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		44		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			8		
Total Gate Charge	Q_g	$V_{DS} = 15V, V_{GS} = 4.5V, I_D = 0.8A$		1.2		nC
Gate-Source Charge	Q_{gs}			0.28		
Gate-Drain Charge	Q_{gd}			0.3		
Switching Characteristics⁽⁴⁾						
Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = 15V, I_D = 0.7A,$ $V_{GS} = 4.5V, R_G = 51\Omega$		5.0		ns
Turn-On Rise Time	t_r			8.2		
Turn-Off Delay Time	$t_{d(off)}$			23		
Turn-Off Fall Time	t_f			41		
Source-Drain Diode Characteristics						
Diode Forward Voltage ⁽³⁾	V_{DS}	$I_S = 0.6A, V_{GS} = 0V$		0.87	1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at $T_A=25^{\circ}\text{C}$.
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$.
4. These parameters have no way to verify.

Typical Electrical and Thermal 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.
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