

Product Summary

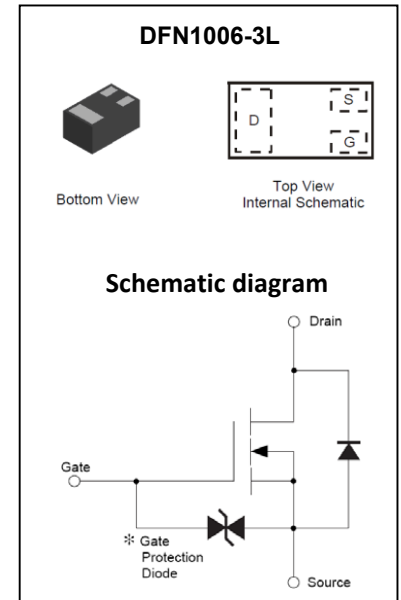
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	170mΩ@4.5V	0.75A
	230mΩ@2.5V	
	320mΩ@1.8V	

Feature

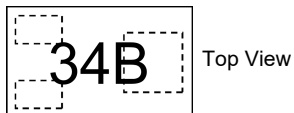
- Lead Free Product is Acquired
- Surface Mount Package
- N-Channel Switch with Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive

Application

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



MARKING:



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 ^{1,5}	I_D	0.75	A
Pulsed Drain Current ²	I_{DM}	1.8	A
Power Dissipation ^{4,5}	P_D	100	mW
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	1250	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	$^\circ\text{C}$

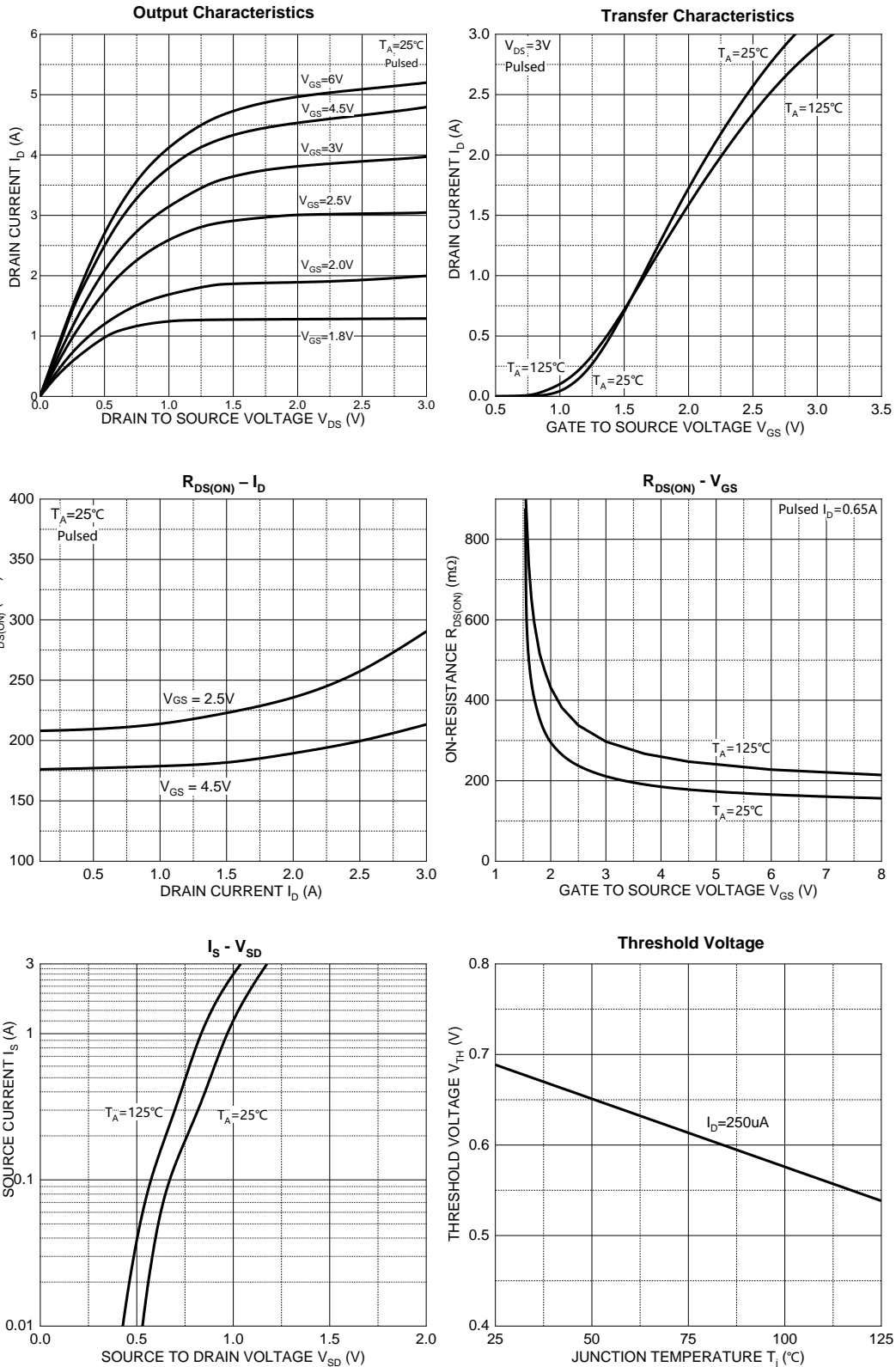
MOSFET ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

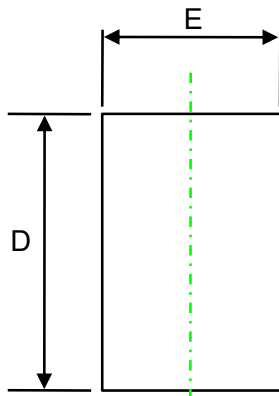
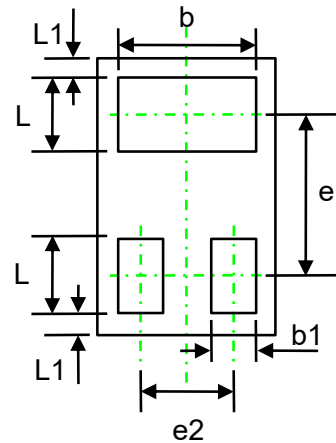
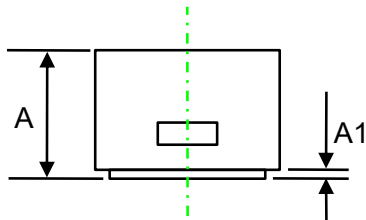
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 6V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±1V, V _{DS} = 0V			±0	μA
On Characteristics³						
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 = 100mA		1.0	1.5	mΩ
		V _{GS} = 2.5V, I _D = 100mA		2.0	3.0	
		V _{GS} = 1.8V, I _D = 100mA		3.0	4.0	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0V, f = 1MHz		1.5		pF
Output Capacitance	C _{oss}			1.5		
Reverse Transfer Capacitance	C _{rss}			1.5		
Switching Frequency	f _{sw}	V _{GS} = 4.5V, I _D = 100mA	100			kHz
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 1A		1.5		nC
Gate-Source Charge	Q _{gs}			1.5		
Gate-Drain Charge	Q _{gd}			0.3		
Turn-On Delay Time	t _{d(on)}	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 100mA R _G = 10Ω		1.5		ns
Turn-On Rise Time	t _r			1.5		
Turn-Off Delay Time	t _{d(off)}			1.5		
Turn-Off Fall Time	t _f			1.5		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V _{SD}	V _{GS} = 0V, I _S = 100mA			1.2	V

Notes :

- The maximum current rating is limited by package.
- Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- The power dissipation P_D is limited by T_{J(MAX)} = 150°C.
- Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C.

Typical Characteristics



DFN1006-3L Package Information

TOP VIEW

BOTTOM VIEW

SIDE VIEW

Symbol	Dimensions In Millimeters (mm)		
	Min.	Typ.	Max.
A	0.34	0.37	0.40
A1	0.00	0.03	0.05
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b	0.45	0.50	0.55
e	-	0.65	-
e2	-	0.35	-
L1	0.05 REF.		
L	0.20	0.25	0.30
b1	0.10	0.15	0.20

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.