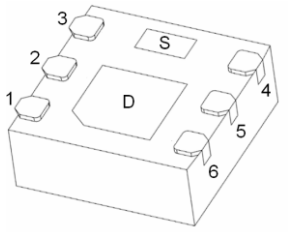
GPMP1218

12V P-Channel MOSFET

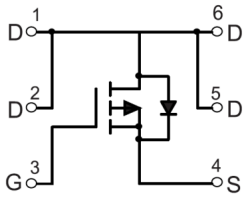
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-12V	9mΩ@-4.5V	-18A
	13mΩ@-2.5V	

DFN2X2-6L



Schematic diagram



Feature

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

Application

- Load Switch
- DC/DC Converter

MARKING:

1218= Device Code

XX = Date Code

ABSOLUTE MAXIMUM RATINGS (T_A = 25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-12	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current[1,5]	T_A = 25℃	I_D	-18	A
	T_A = 100℃		-11	
Pulsed Drain Current[2]		I_{DM}	-72	A
Power Dissipation[4,5]	T_A = 25℃	P_D	2.5	W
Thermal Resistance from Junction to Case[5]		$R_{\theta JA}$	50	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature		T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25℃ 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	-12			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -12V, V_{GS} = 0V			-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS} = ±10V, V_{DS} = 0V			±100	nA
On Characteristics[3]						
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 = -4A		9	13	mΩ
		V_{GS} = -2.5V, I_D = -4A		13	20	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS} = -8V, V_{GS} = 0V, f = 0.1MHz		1613		pF
Output Capacitance	C_{oss}			452		
Reverse Transfer Capacitance	C_{rss}			425		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V		6.5		Ω
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS} = -10V, V_{GS} = -4.5V, I_D = -4A		24.4		nC
Gate-Source Charge	Q_{gs}			2.2		
Gate-Drain Charge	Q_{gd}			9		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -10V, V_{GS} = -4.5V, I_D = -1A, R_G =10Ω		10		ns
Turn-On Rise Time	t_r			35		
Turn-Off Delay Time	$t_{d(off)}$			30		
Turn-Off Fall Time	t_f			10		
Source-Drain Diode Characteristics						
Diode Forward Voltage[3]	V_{SD}	V_{GS} = 0V, I_S = -1.9A			-1.2	V

Notes :

1.The maximum current rating is limited by package.

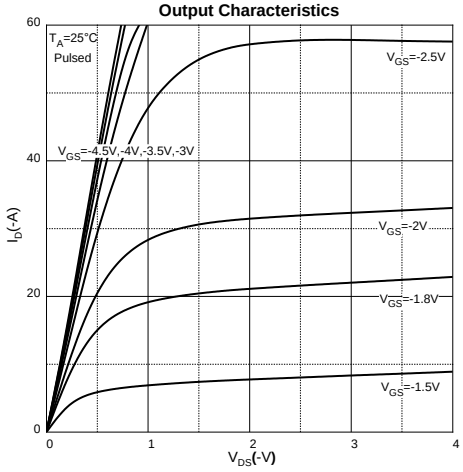
2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.

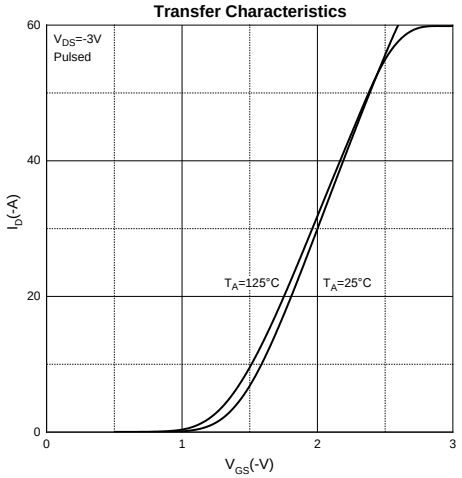
3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.

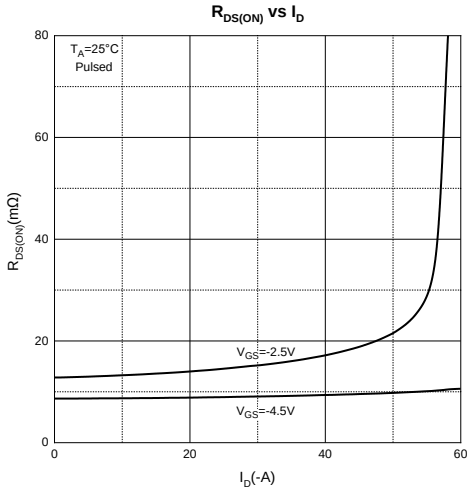
4.The power dissipation P_D is limited by $T_{J(MAX)}$ = 150°C.

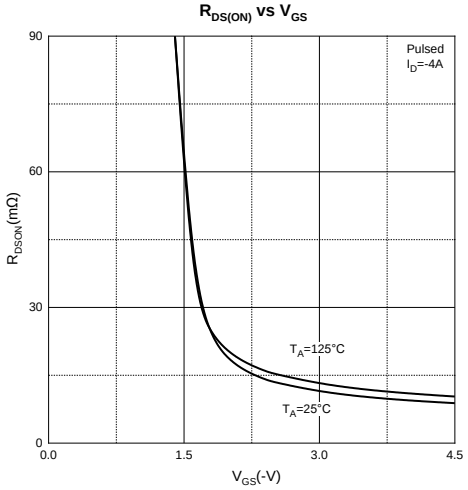
5.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

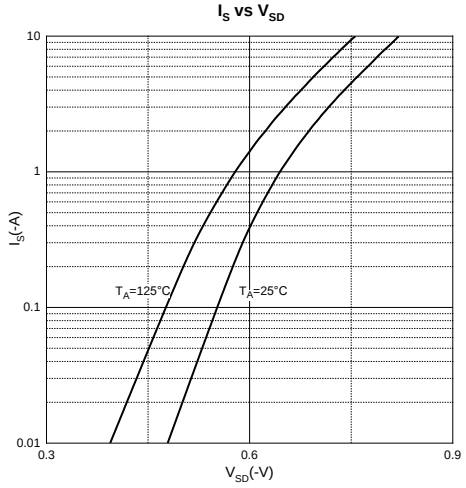
Typical Characteristics

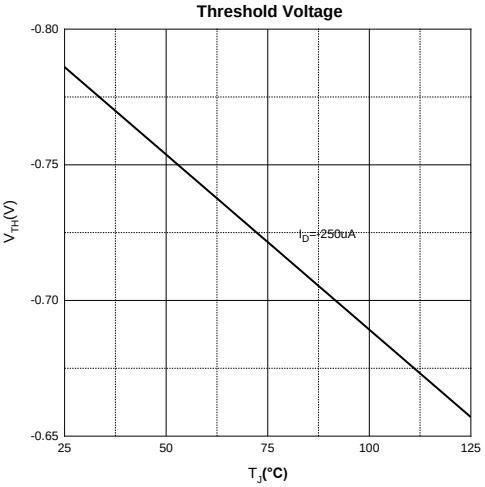




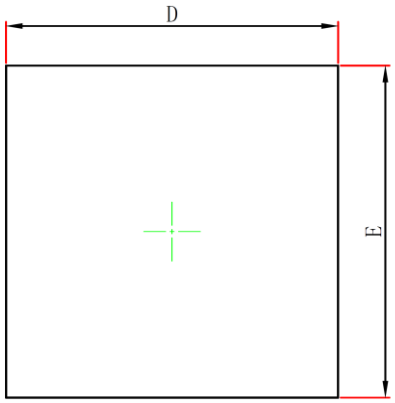




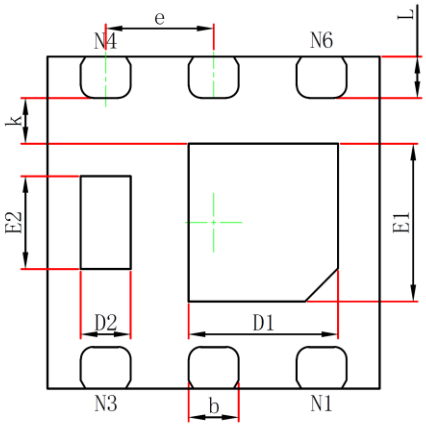




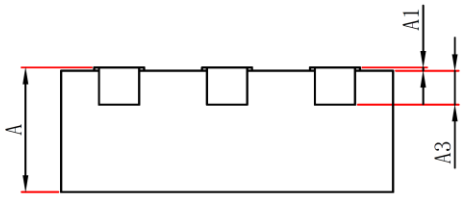
DFN2X2-6L Package Information



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0	0.050	0	0.002
A3	2.03REF		0.008REF	
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.800	1.000	0.031	0.039
E1	0.850	1.050	0.033	0.041
D2	0.200	0.400	0.008	0.016
E2	0.460	0.660	0.018	0.026
k	0.200MIN		0.008MIN	
b	0.250	0.350	0.010	0.014
e	0.65BSC		0.026TYP	
L	0.174	0.326	0.007	0.013

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.