



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-12V	10mΩ@-4.5V	-16A
	14mΩ@-2.5V	

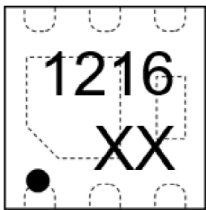
Feature

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

Application

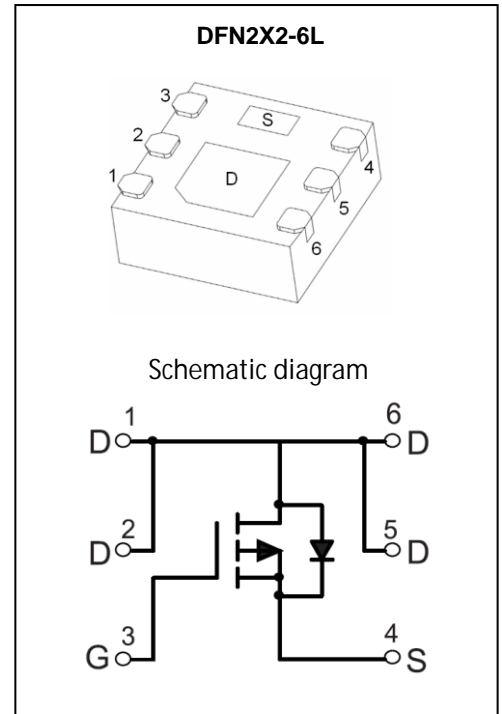
- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

MARKING:



1216 = Device Code

XX = Date Code



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

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	-FG	V
Gate - Source Voltage	V_{GS}	$\pm 1\epsilon$	V
Continuous Drain Current ¹	I_D	$T_C = 25^{\circ}C$	-1Ā
		$T_C = 100^{\circ}C$	-1F
Pulsed Drain Current ²	I_{DM}	-6Ā	A
Power Dissipation ⁵	P_D	2.Ā	W
Power Dissipation ⁴	P_D	18	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	Ā ϵ	$^{\circ}C/W$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	6.9	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

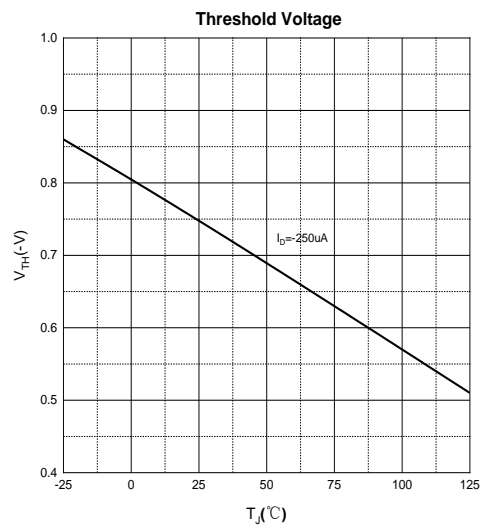
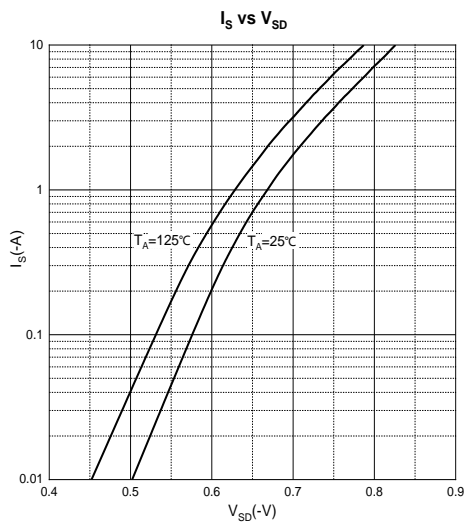
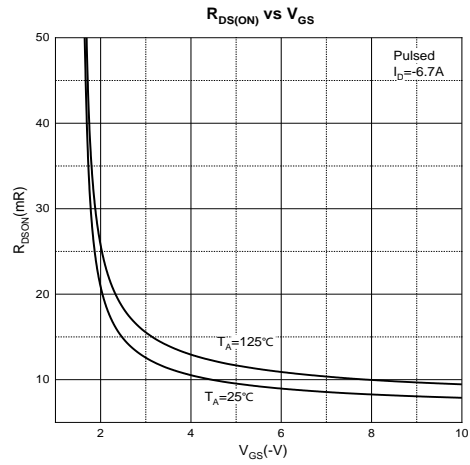
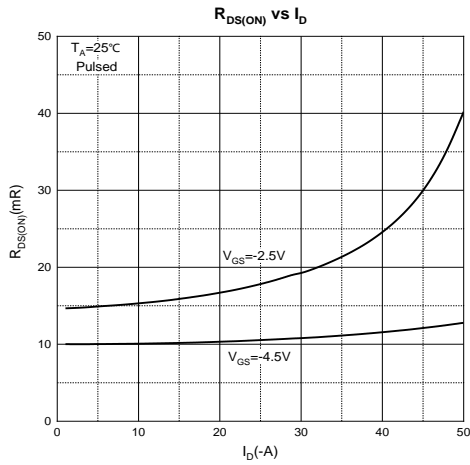
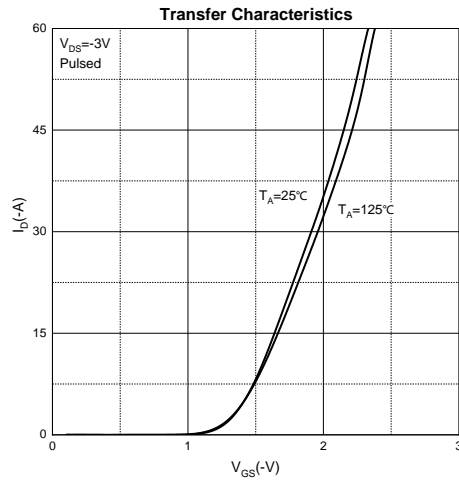
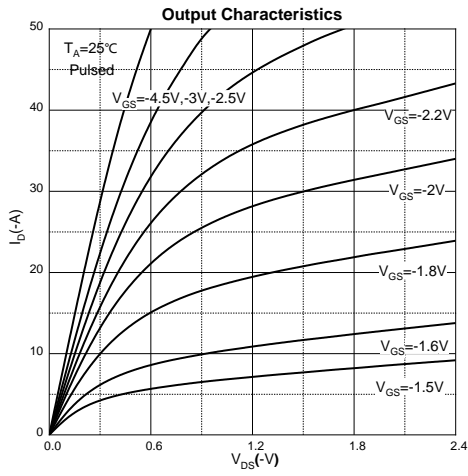
MOSFET ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-12			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -12V, V_{GS} = 0V$			-1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 100	nA
On Characteristics³						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.7	-1	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -6.7A$		10	15	m Ω
		$V_{GS} = -2.5V, I_D = -4.2A$		14	21	
Forward transconductance	g_{FS}	$V_{DS} = -10V, I_D = -6.7A$		40		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -6V, V_{GS} = 0V, f = 1MHz$		1628		pF
Output Capacitance	C_{oss}			417		
Reverse Transfer Capacitance	C_{rss}			403		
Gate Resistance	R_g	$f = 1MHz$		8.5		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -13V, V_{GS} = -4.5V, I_D = -6.7A$		24		nC
Gate-source Charge	Q_{gs}			3		
Gate-drain Charge	Q_{gd}			9.5		
Turn-on Delay Time	$t_{d(on)}$	$V_{GEN} = -4.5V, V_{DD} = -6V, I_D = -4A, RL = 6\Omega, R_{GEN} = 1\Omega$		35		ns
Turn-on Rise Time	t_r			33		
Turn-off Delay Time	$t_{d(off)}$			60		
Turn-off Fall Time	t_f			27		
Source - Drain Diode Characteristics						
Diode forward current	I_S	$T_C = 25^\circ\text{C}$			-16	A
Diode pulsed forward current	I_{SM}				-48	A
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = -2A$			-1.2	V

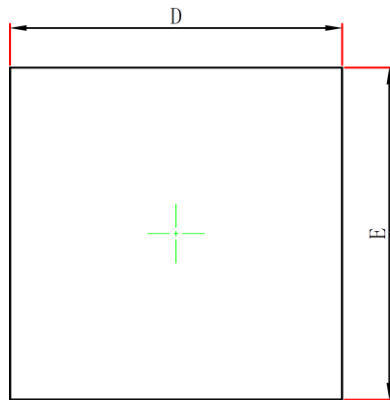
Notes:

1. The maximum current rating is limited by package. And device mounted on a large heatsink
2. Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
3. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$. And device mounted on a large heatsink
5. Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

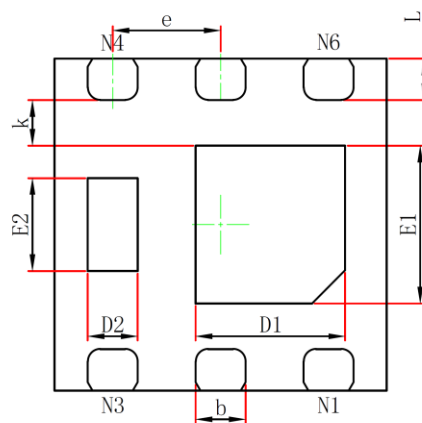
Typical Electrical and Thermal Characteristics



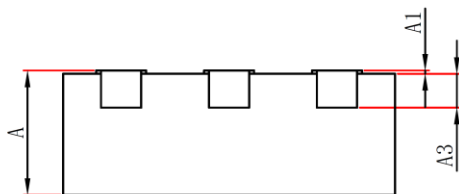
DFN2X2-6L Package Information



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.
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