

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	8.5mΩ@10V	16A
	12mΩ@4.5V	

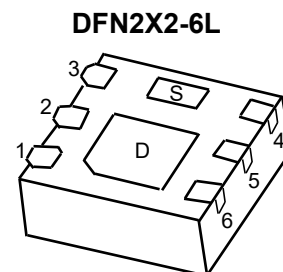
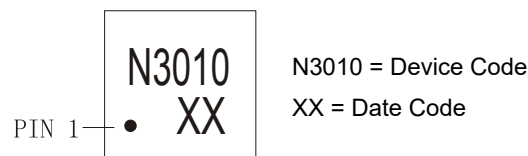
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% Avalanche test

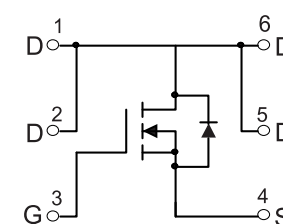
Application

- Power Switching Application

MARKING:



Schematic diagram



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}	± 20	V
Continuous Drain Current ¹	$T_A = 25^\circ\text{C}$	I_D	16	A
	$T_A = 55^\circ\text{C}$	I_D	12	A
	$T_A = 100^\circ\text{C}$	I_D	10	A
Pulsed Drain Current ²		I_{DM}	64	A
Single Pulsed Avalanche Current ³		I_{AS}	17	A
Single Pulsed Avalanche Energy ³		E_{AS}	72	mJ
Power Dissipation ⁴	$T_A = 25^\circ\text{C}$	P_D	3	W
Thermal Resistance from Junction to Ambient ⁵		$R_{\theta JA}$	42	$^\circ\text{C/W}$
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^\circ\text{C}$

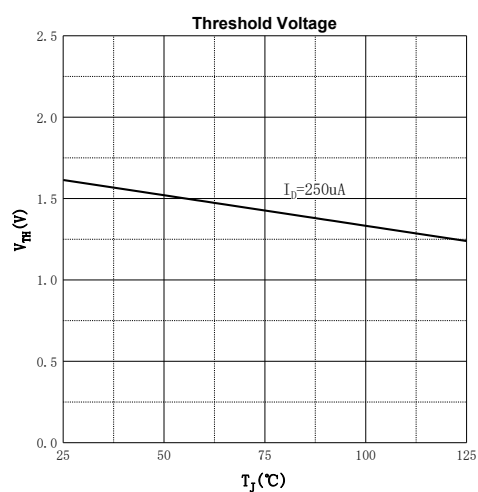
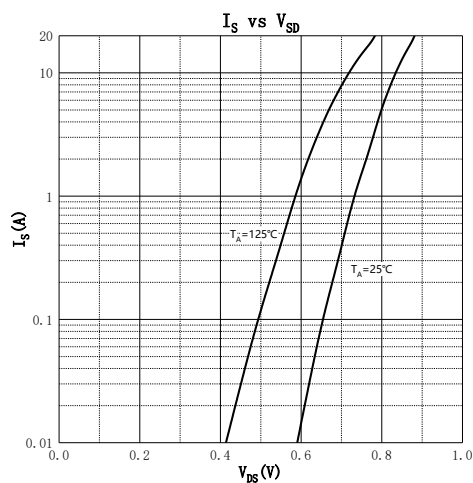
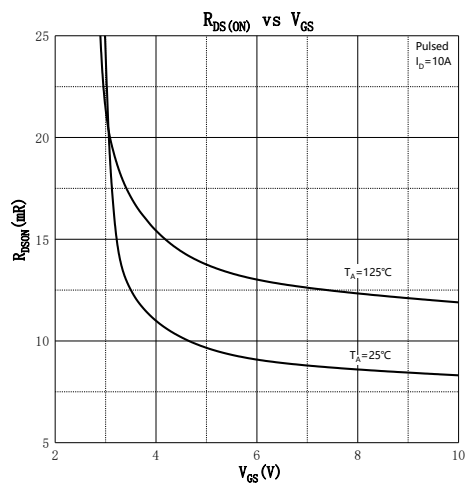
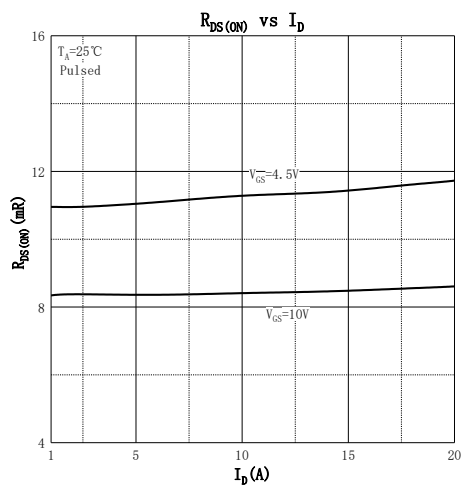
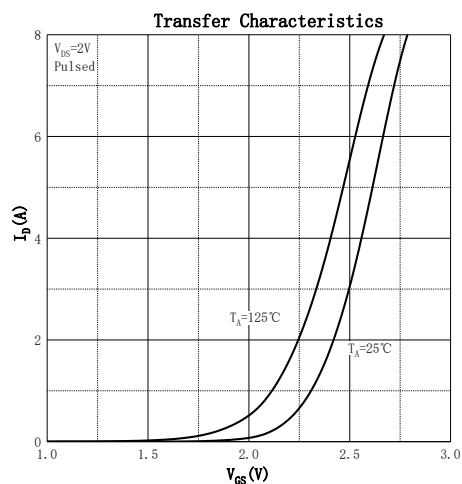
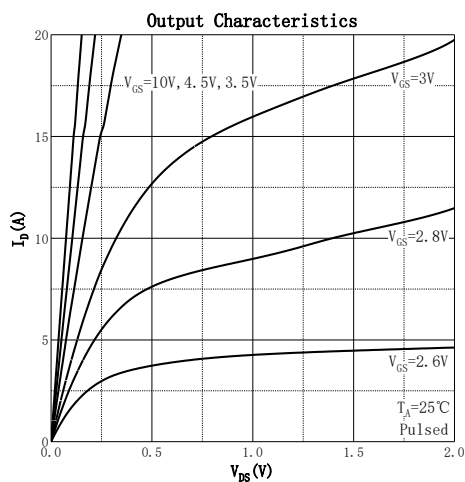
MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

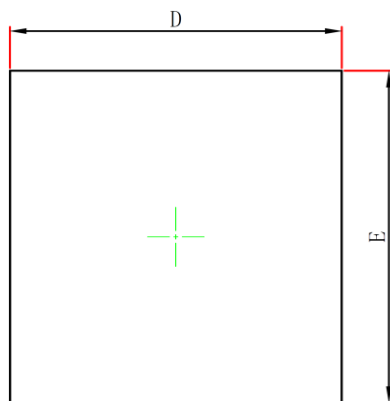
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics ³						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.0	1.5	3.0	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 5A		8.5	12	mΩ
		V _{GS} = 4.5V, I _D = 5A		12	18	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		1265		pF
Output Capacitance	C _{oss}			144		
Reverse Transfer Capacitance	C _{rss}			134		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		1.5		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = 15V, V _{GS} = 10V, I _D = 10A		12		nC
Gate-Source Charge	Q _{gs}			4.7		
Gate-Drain Charge	Q _{gd}			3.4		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 15V, V _{GS} = 10V, R _L = 1.5Ω R _G = 3Ω		6.8		ns
Turn-On Rise Time	t _r			12		
Turn-Off Delay Time	t _{d(off)}			22		
Turn-Off Fall Time	t _f			7		
Source-Drain Diode Characteristics						
Diode Forward Voltage ³	V _{SD}	V _{GS} = 0V, I _S = 5A			1.2	V

Notes :

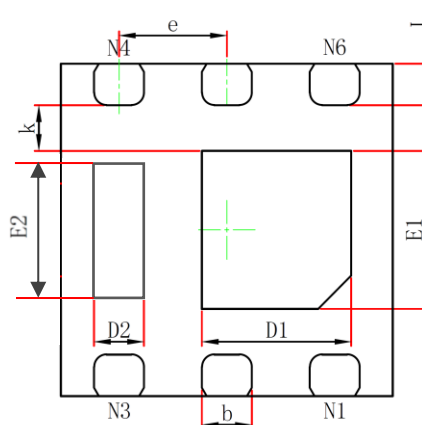
- 1.The maximum current rating is limited by package. And device mounted on a large heatsink.
- 2.Pulse Test: Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.EAS condition: V_{DD} = 15V, V_{GS} = 10V, L = 0.5mH, R_G = 25Ω Starting T_J = 25°C.
- 4.Pulse Test: Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 5.The power dissipation P_D is limited by T_{J(MAX)} = 150°C.And device mounted on a large heatsink.
- 6.Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C.

Typical Characteristics

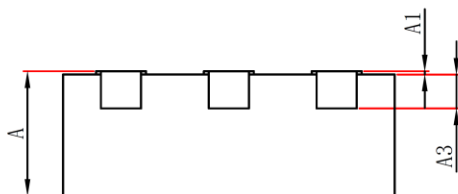


DFN2X2-6L Package Information


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	0.120	0.220	0.005	0.009
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.800	1.050	0.031	0.041
E1	0.800	1.050	0.031	0.041
D2	0.200	0.400	0.008	0.016
E2	0.450	0.850	0.018	0.033
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.