

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
40V	15mΩ@10V	15A
	20mΩ@4.5V	

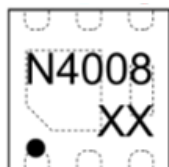
Feature

- High density cell design for ultra low $R_{DS(ON)}$
- Excellent package for good heat dissipation

Application

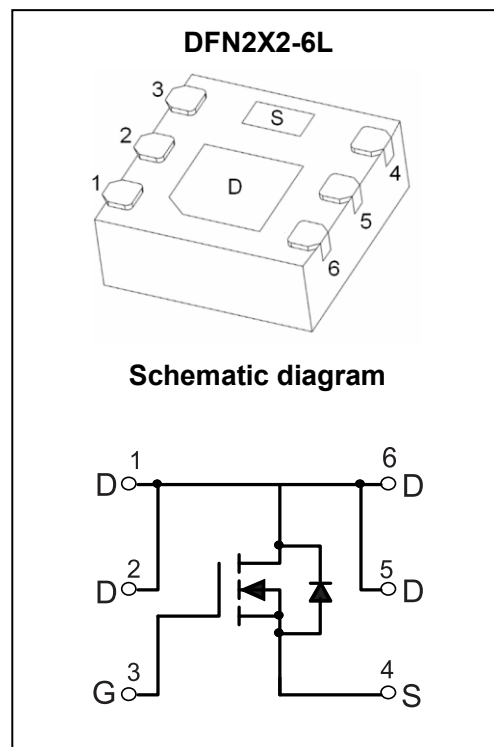
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

MARKING:



N4008 = Device Code

XX = Date Code



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

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	40	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	$T_c = 25^\circ\text{C}$	I_D	15	A
	$T_c = 100^\circ\text{C}$		12	A
Pulsed Drain Current		I_{DM}	60	A
Single Pulsed Avalanche Energy		E_{AS}^*	55	mJ
Power Dissipation	$T_A = 25^\circ\text{C}$	P_D	1.8	W
Thermal Resistance from Junction to Ambient ¹		$R_{\theta JA}$	41	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case		$R_{\theta JC}$	16	$^\circ\text{C/W}$
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^\circ\text{C}$

* E_{AS} Test Condition $V_{DD} = 20V$, $V_{GS} = 10V$, $L = 1.0mH$, $I_{AS} = 11A$ Starting $T_J = 25^\circ\text{C}$.

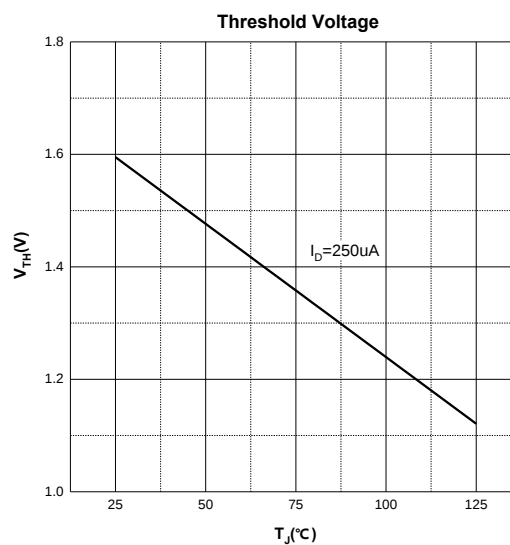
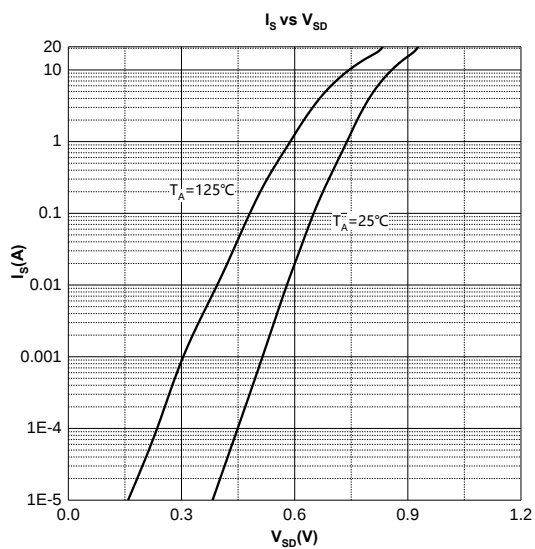
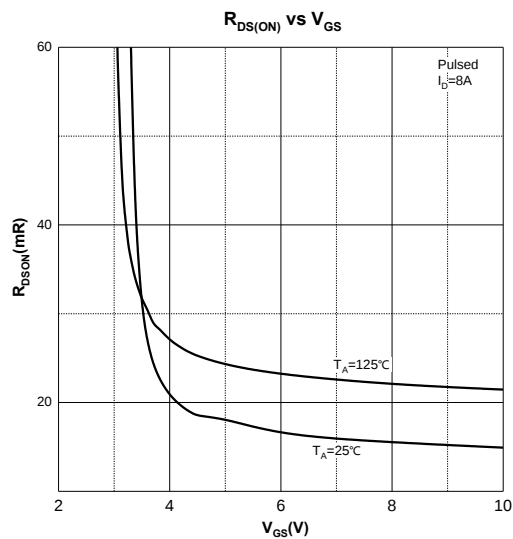
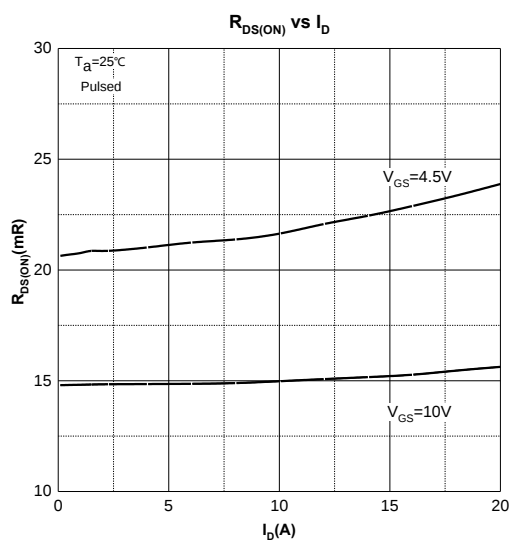
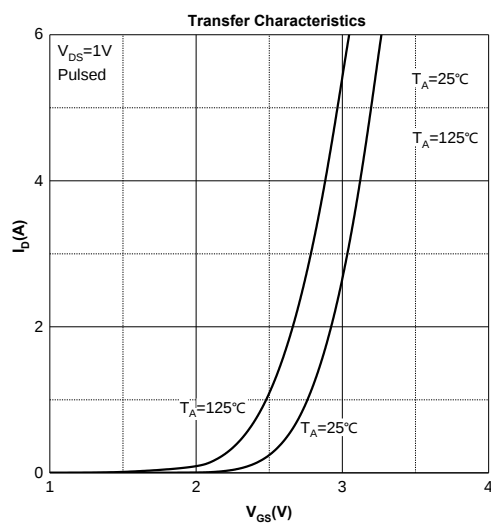
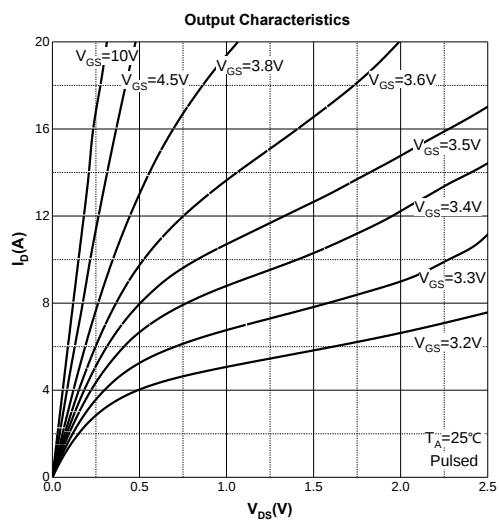
MOSFET ELECTRICAL CHARACTERISTICS($T_A = 25^\circ\text{C}$ unless otherwise noted)

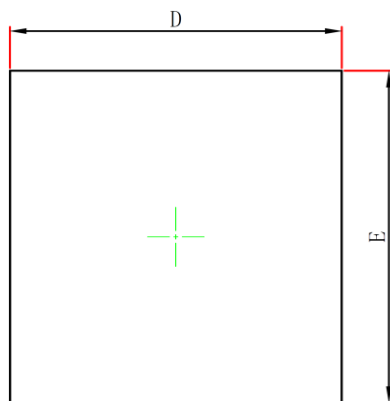
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	40			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 40V, V _{GS} = 0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1	1.5	2.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 5A		15	20	mΩ
		V _{GS} = 4.5V, I _D = 5A		20	26	
Forward Transconductance	g _{FS}	V _{DS} = 10V, I _D = 5A		13		S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 20V, V _{GS} = 0V, f = 1MHz		999		pF
Output Capacitance	C _{oss}			95.5		
Reverse Transfer Capacitance	C _{rss}			73.6		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		3.09		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = 20V, V _{GS} = 10V, I _D = 5A		10		nC
Gate-Source Charge	Q _{gs}			1.8		
Gate-Drain Charge	Q _{gd}			2.5		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 15V, R _G = 3Ω,V _{GS} = 10V, R _L = 3Ω		12		ns
Turn-On Rise Time	t _r			3		
Turn-Off Delay Time	t _{d(off)}			50		
Turn-Off Fall Time	t _f			5		
Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} = 0V , I _S = 5A			1.2	V

Notes :

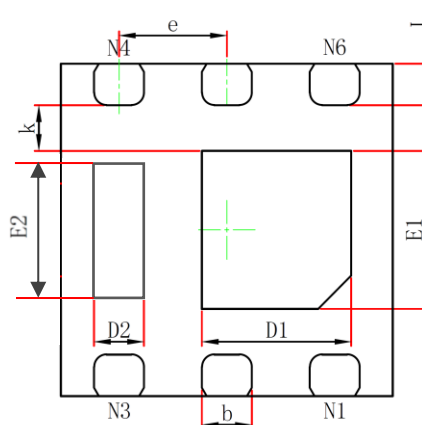
1. $R_{\theta JA}$ is measured with the device mounted on 1 in² FR4 board with 1oz. single side copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics

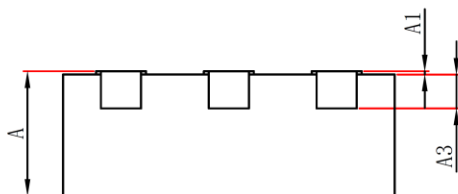


DFN2X2-6L Package Information


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.