



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	30mΩ@10V	5A
	32mΩ@4.5V	
	38mΩ@2.5V	

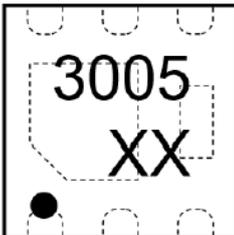
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$
- Typical ESD Protection

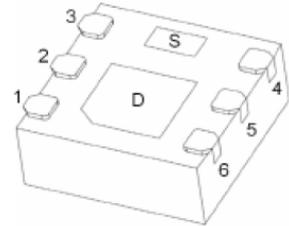
Application

- Battery Protection
- Load Switch

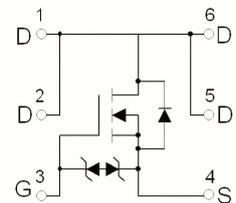
MARKING:



DFN2X2-6L



Schematic diagram



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current ^{1,2}	I_D	5	A
Pulsed Drain Current	I_{DM}	20	A
Power Dissipation	P_D	0.75	W
Thermal Resistance from Junction to Ambient ^{1,2}	$R_{\theta JA}$	250	$^{\circ}C/W$
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)

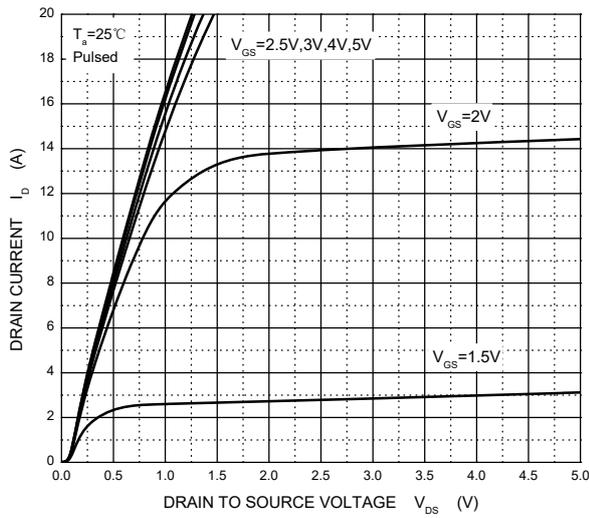
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 10	μA
On Characteristics						
Gate Threshold Voltage ³	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.6	0.75	1	V
Drain-Source On-Resistance ³	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 5A$		30	40	m Ω
		$V_{GS} = 4.5V, I_D = 5A$		32	42	
		$V_{GS} = 2.5V, I_D = 4A$		38	50	
Forward Transconductance ³	g_{fs}	$V_{DS} = 5V, I_D = 4A$		15		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V, f = 0.1\text{MHz}$		423		pF
Output Capacitance	C_{oss}			56		
Reverse Transfer Capacitance	C_{rss}			11		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 15V, V_{GS} = 10V, I_D = 5A$		16		nC
Gate-Source Charge	Q_{gs}			0.36		
Gate-Drain Charge	Q_{gd}			2.6		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 15V, V_{GS} = 10V, R_L = 3.75\Omega$ $R_G = 3\Omega$		2		ns
Turn-On Rise Time	t_r			3.5		
Turn-Off Delay Time	$t_{d(off)}$			22		
Turn-Off Fall Time	t_f			3.5		
Source-Drain Diode Characteristics						
Continuous Source Current	I_S	$V_G = V_D = 0V$, Force Current			5	A
Pulsed Source Current	I_{SM}				20	
Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = 1A$			1.2	V

Notes :

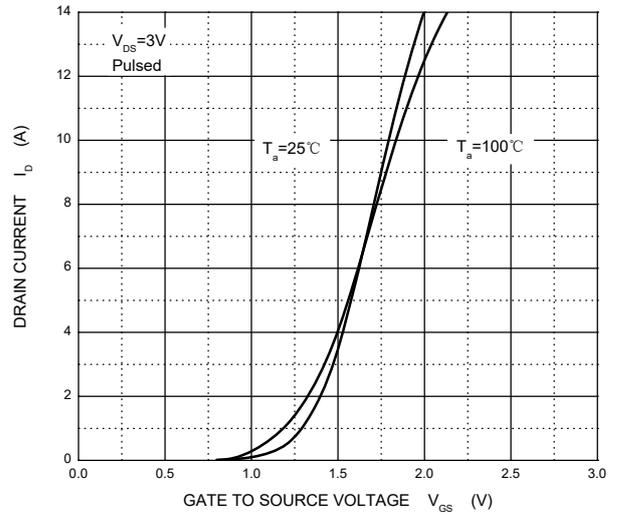
- $R_{\theta JA}$ is measured with the device mounted on 1 in² FR4 board with 1 oz. single side copper, in a still air environment with $T_A = 25^{\circ}\text{C}$.
- $R_{\theta JA}$ is measured in the steady state
- Pulse test : Pulse width $\leq 380\mu s$, duty cycle $\leq 2\%$.

Typical Electrical and Thermal Characteristics

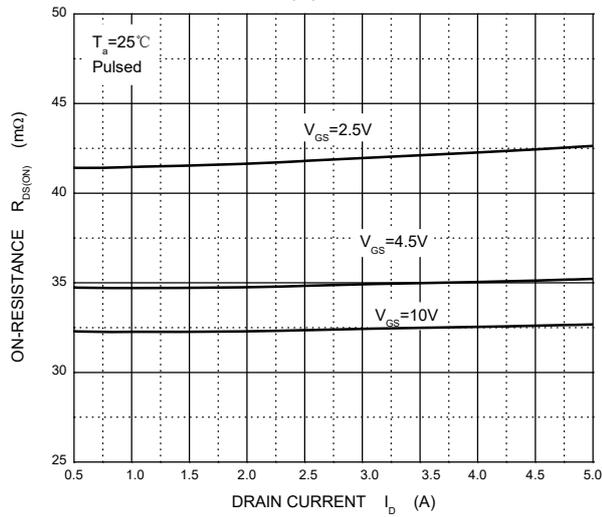
Output Characteristics



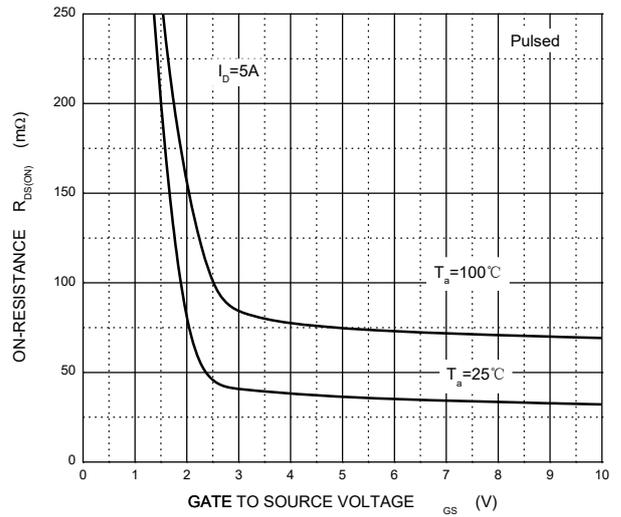
Transfer Characteristics



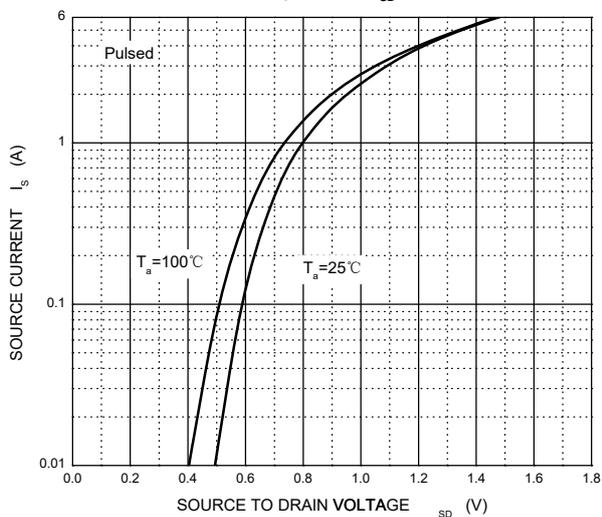
$R_{DS(ON)}$ — I_D



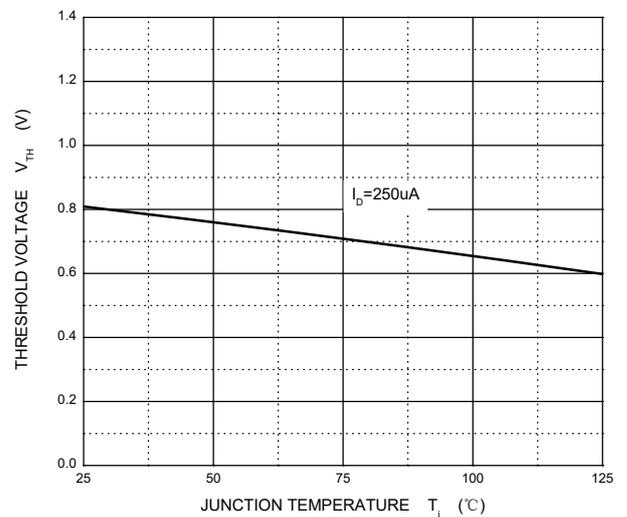
$R_{DS(ON)}$ — V_{GS}



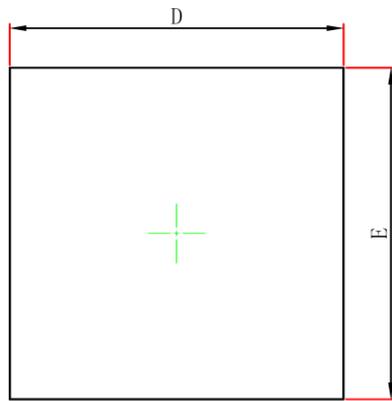
I_S — V_{SD}



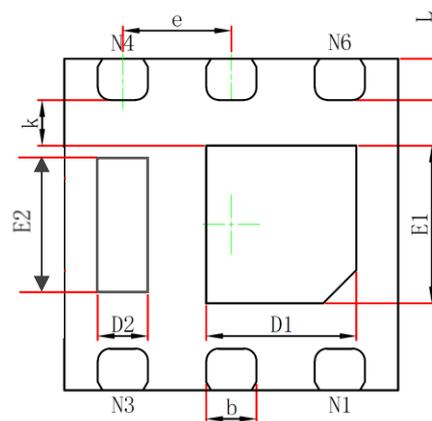
Threshold Voltage



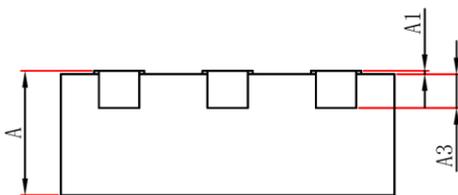
DFN2X2-6L Package Information



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.
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