

Product Summary

V _{(BR)DSS}	R _{DS(on)TYP}	I _D
-30V	8mΩ@-10V	-35A
	9.5mΩ@-6V	
	11mΩ@-4.5V	

Feature

- High cell density trench P-ch MOSFETs
- Super low gate charge
- Advanced high cell density Trench technology

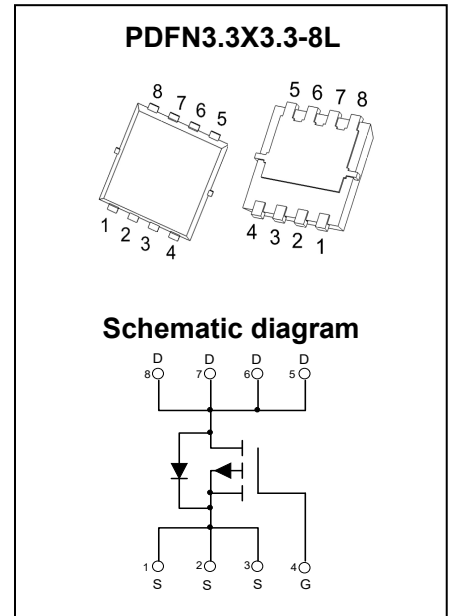
Application

- Battery protection applications
- Load switch

MARKING:



4407 = Device code
 Solid dot = Pin1 indicator
 Solid Dot = Green Molding Compound Device
 XX = Date Code



ABSOLUTE MAXIMUM RATINGS (T_A = 25°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	I _D	-35	A
Pulsed Drain Current ²			
Power Dissipation ³	P _D	30	W
Thermal Resistance from Junction to Ambient ⁴			
Thermal Resistance from Junction to Case	R _{θJC}	4.2	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55~ +150	°C

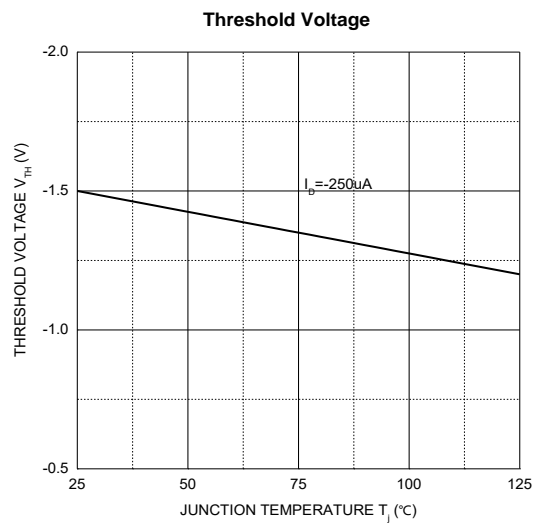
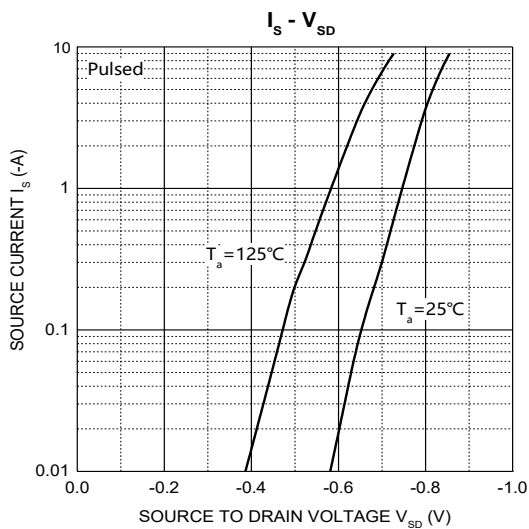
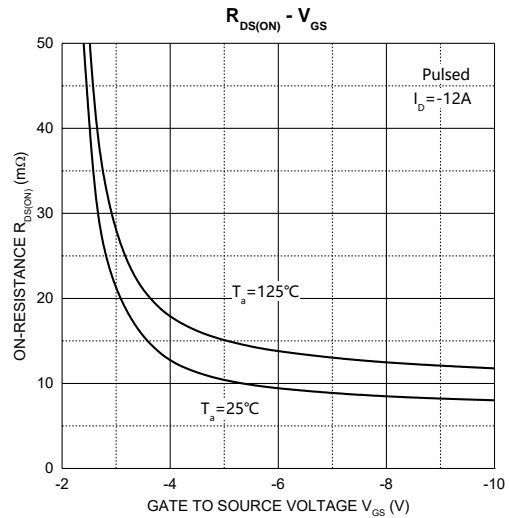
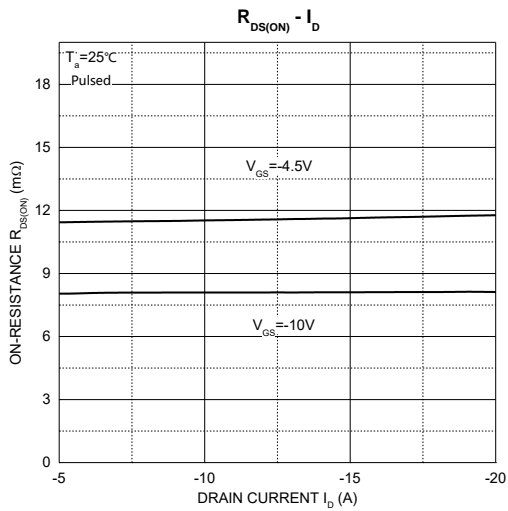
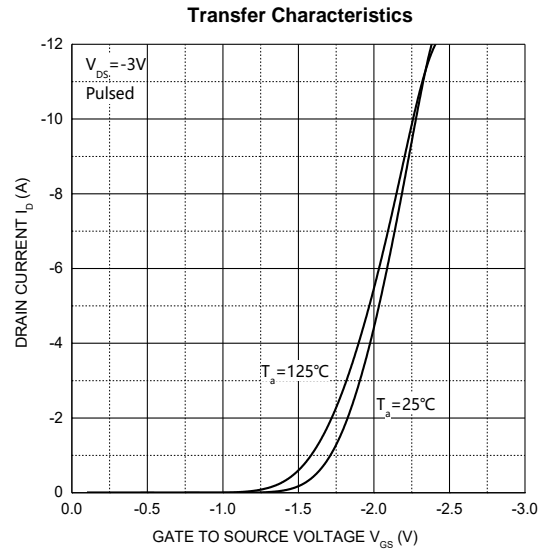
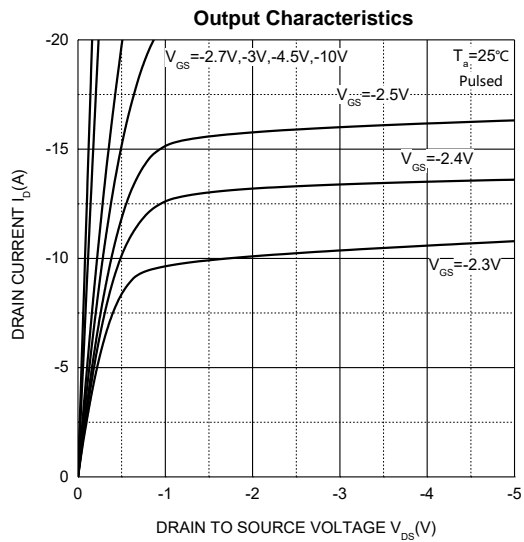
MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

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} = -30V, 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	-1.0	-1.5	-3.0	V
Drain-source On-resistance ²	R _{DS(on)}	V _{GS} = -10V, I _D = -12A		8	13	mΩ
		V _{GS} = -6V, I _D = -10A		9.5	15	
		V _{GS} = -4.5V, I _D = -8A		11	22	
Forward Transconductance	g _{FS}	V _{DS} = -5V, I _D = -15A		30		S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz		3900		pF
Output Capacitance	C _{oss}			390		
Reverse Transfer Capacitance	C _{rss}			340		
Gate Resistance	R _g	f = 1MHz, V _{DS} = 0V, V _{GS} = 0V			10	Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = -15V, V _{GS} = -10V, I _D = -10A		62		nC
Gate-source Charge	Q _{gs}			16		
Gate-drain Charge	Q _{gd}			18		
Turn-on Delay Time	t _{d(on)}	V _{DD} = -15V, V _{GS} = -10V, R _G = 3Ω, R _L = 1.25Ω		20		ns
Turn-on Rise Time	t _r			14		
Turn-off Delay Time	t _{d(off)}			57		
Turn-off Fall Time	t _f			27		
Source-Drain Diode Characteristics						
Continuous Source Current ⁵	I _S	V _G = V _D = 0V, Force Current			-35	A
Pulsed Source Current ⁵	I _{SM}				-105	
Diode Forward Voltage ²	V _{SD}	V _{GS} = 0V, I _S = -2A			-1.2	V

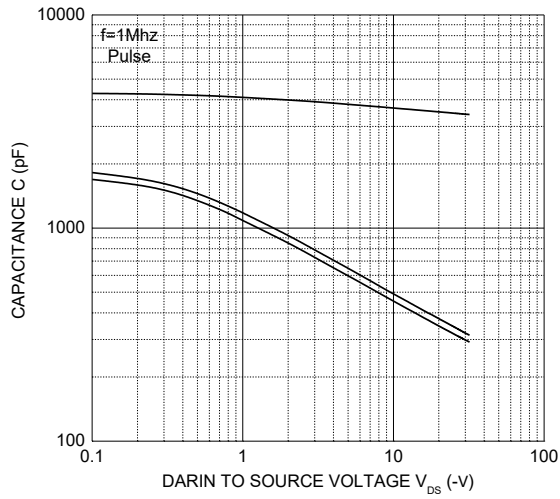
Notes :

1. The maximum current rating is limited by package.
2. Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
3. The power dissipation P_D is limited by T_{J(MAX)} = 150°C.
4. Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C.
5. The Data is theoretically the same as I_D and I_{DM}. In real applications, it will be limited by total power

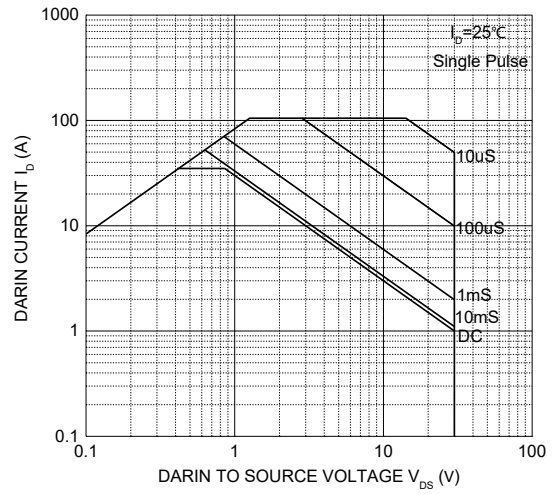
Typical Characteristics



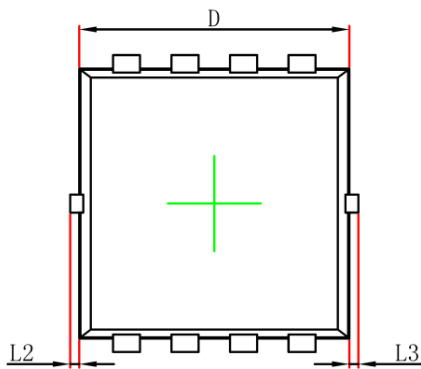
Capacitances



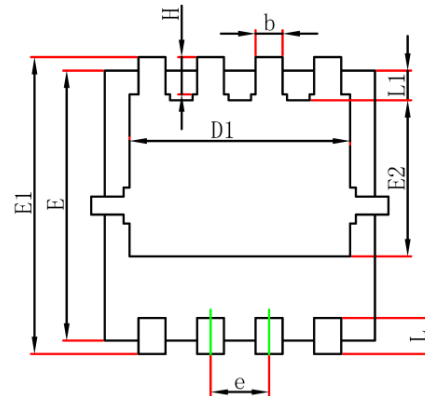
Maximum Forward Biased Safe Operating Area



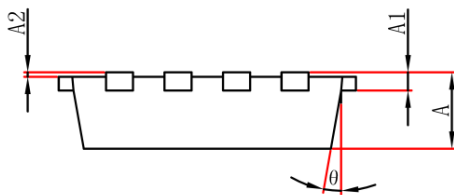
PDFN3.3X3.3-8L Package Information



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.152REF		0.006REF	
A2	0.000	0.050	0.000	0.002
D	2.900	3.200	0.114	0.126
D1	2.300	2.600	0.091	0.102
E	2.900	3.200	0.114	0.126
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0.000	0.100	0.000	0.004
L3	0.000	0.100	0.000	0.004
H	0.315	0.515	0.012	0.020
θ	0°	12°	0°	12°

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.