

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

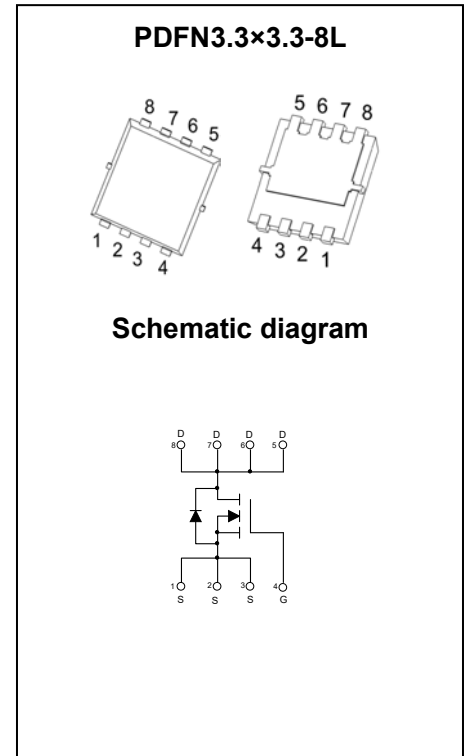
Application

- 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 ($T_A = 25^\circ\text{C}$ 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	I_D	-35	A
Pulsed Drain Current ²	I_{DM}	-105	A
Power Dissipation ³	P_D	30	W
Thermal Resistance from Junction to Ambient ⁴	$R_{\theta JA}$	55	°C/W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	4.2	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

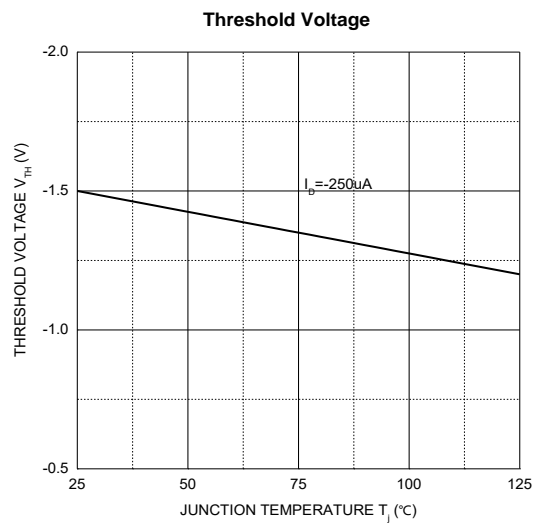
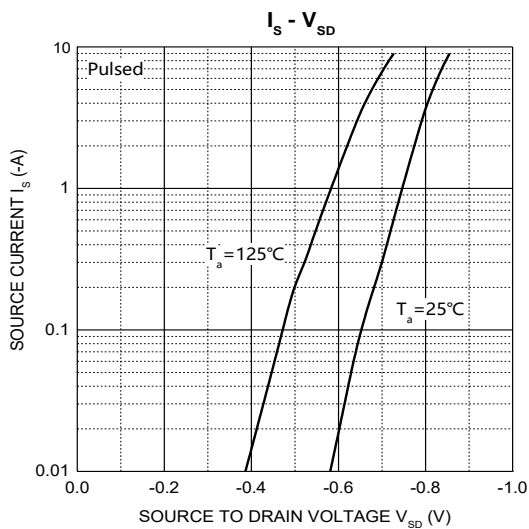
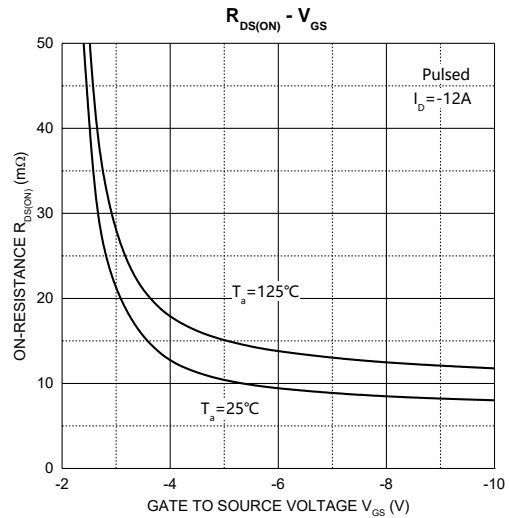
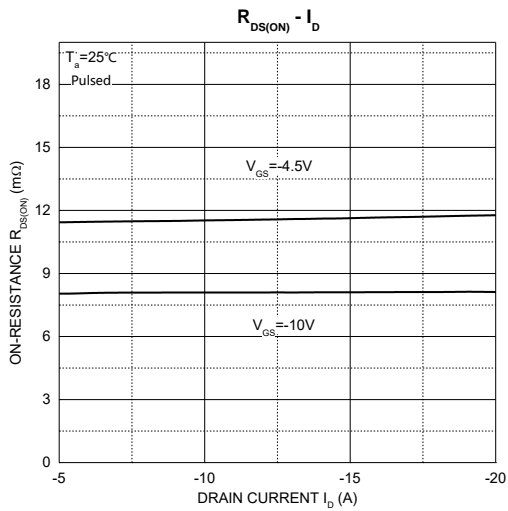
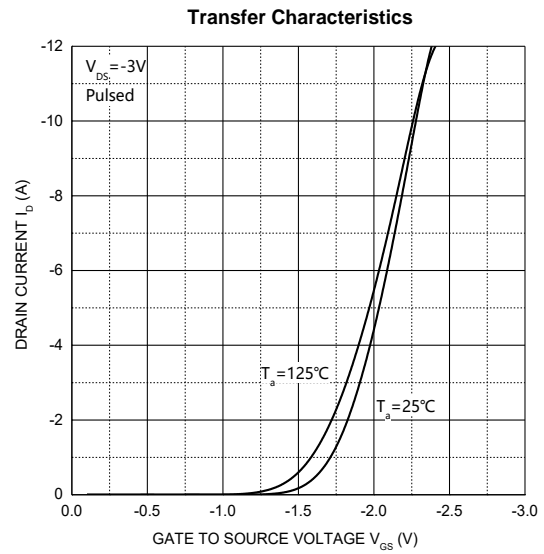
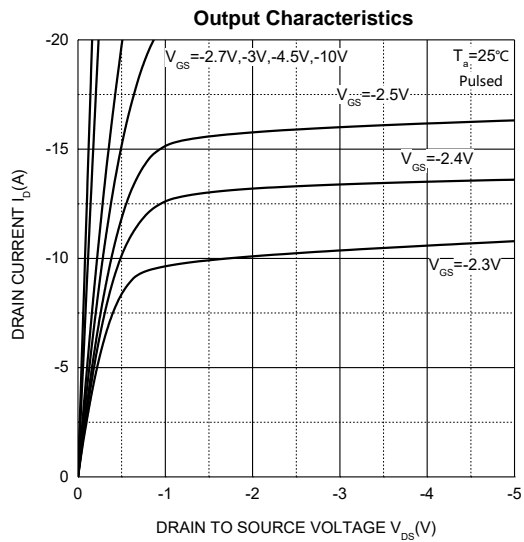
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

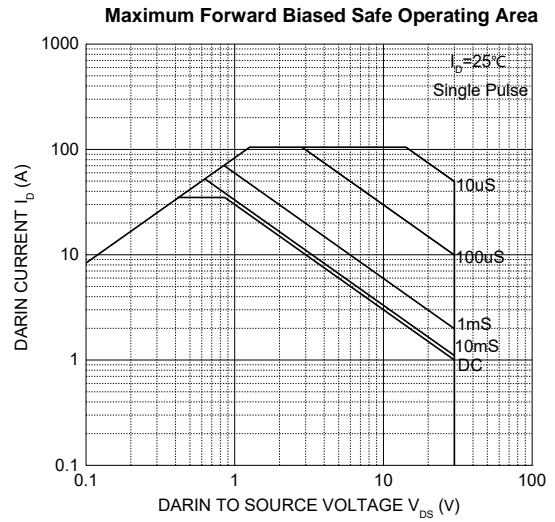
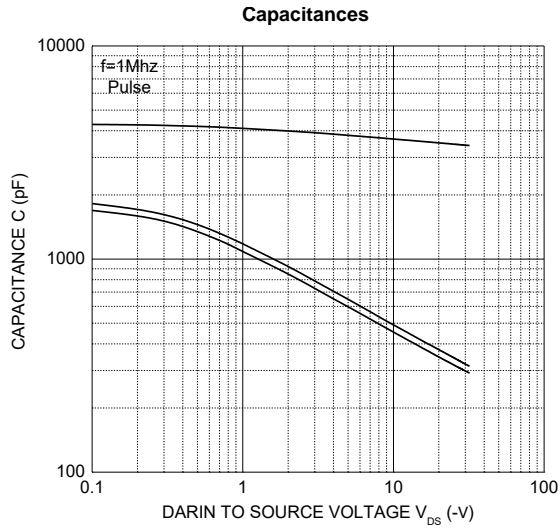
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$			-1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.5	-3.0	V
Drain-source on-resistance ²	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -12A$		8	13	m Ω
		$V_{GS} = -6V, I_D = -10A$		9.5	12	
		$V_{GS} = -4.5V, I_D = -8A$		11	22	
Forward transconductance	g_{FS}	$V_{DS} = -5V, I_D = -15A$		30		S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V, f = 1MHz$		3217		pF
Output capacitance	C_{oss}			587		
Reverse transfer capacitance	C_{rss}			485		
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	$t_{d(on)}$	$V_{DD} = -15V, V_{GS} = -10V, R_G = 3\Omega, R_L = 1.25\Omega$		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	$V_G = V_D = 0V, \text{Force Current}$			-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 :

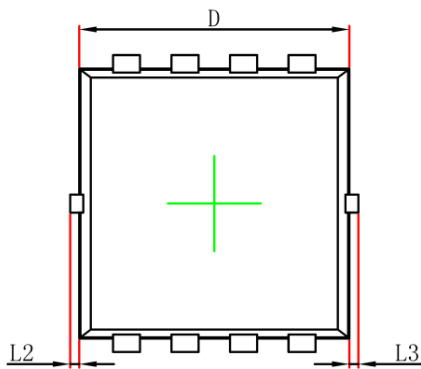
1. The maximum current rating is limited by package.
2. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
3. The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
4. Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.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

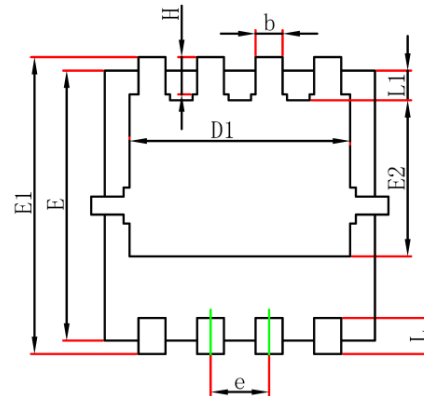




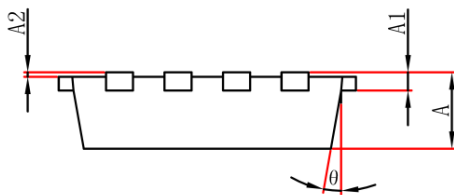
PDFN3.3×3.3-8L Package Information



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°