

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	5.5m Ω @4.5V	25A
	6.0m Ω @4.0V	
	6.5m Ω @3.8V	
	7.0m Ω @3.1V	
	7.5m Ω @2.5V	

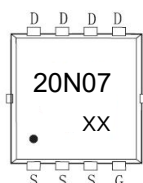
Feature

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

Application

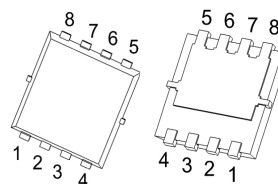
- Battery protection applications
- Load switch

MARKING:

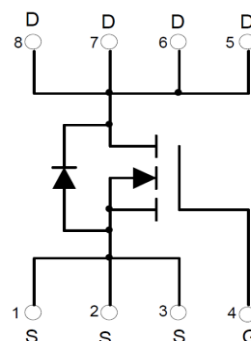


20N07 = Device code
Solid dot = Pin1 indicator
XX = Date Code

PDFN3.3X3.3-8L



Schematic diagram



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	$I_D^{(1)}$	25	A
Pulsed Drain Current	$I_{DM}^{(1), (2)}$	75	A
Power Dissipation	$P_D^{(3)}$	3	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	42	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

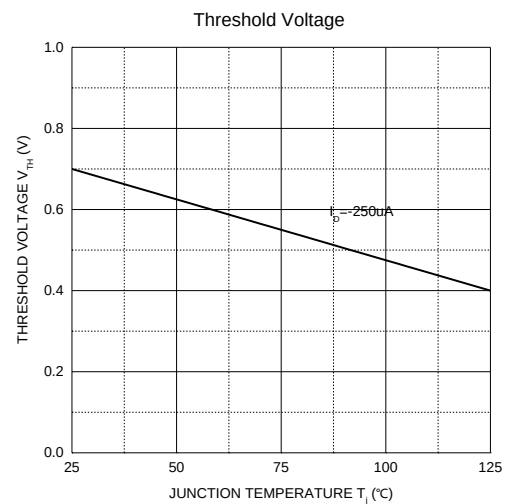
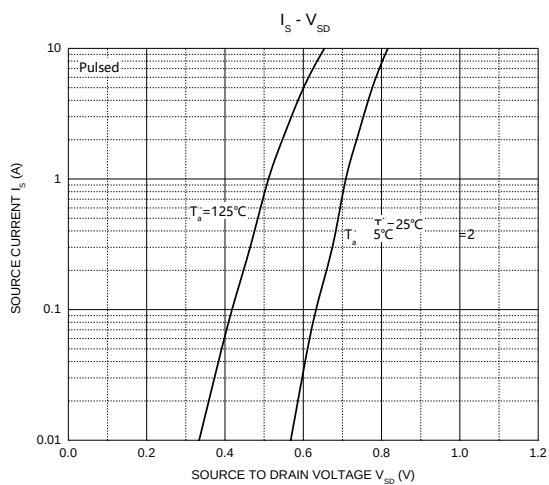
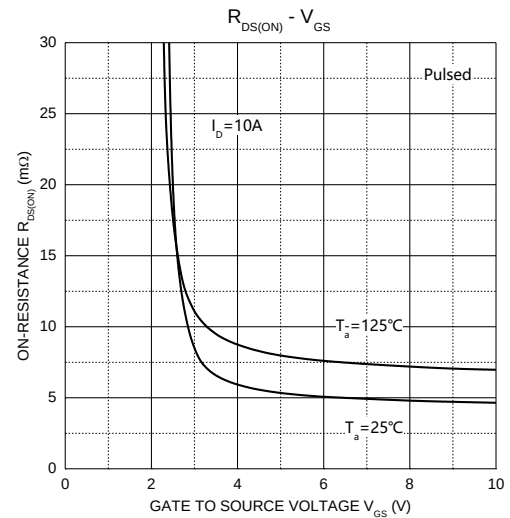
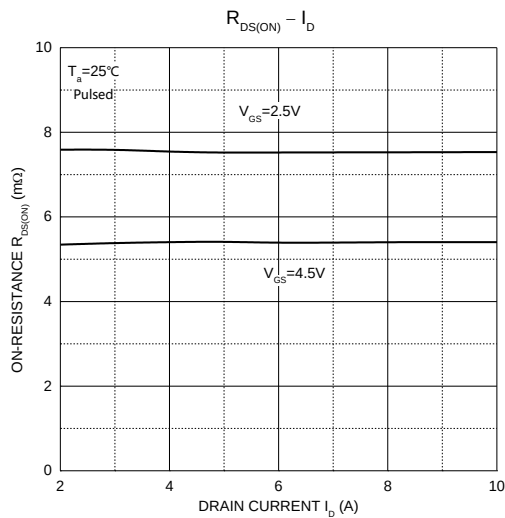
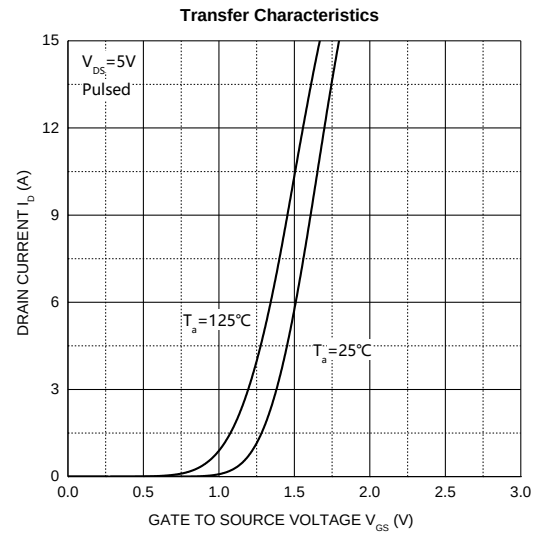
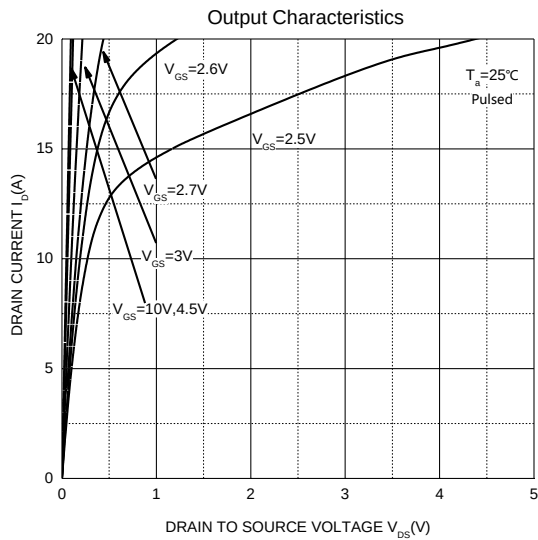
MOSFET ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

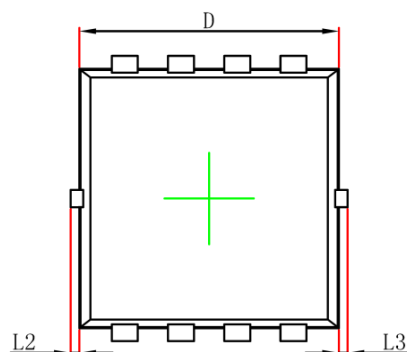
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =16V,V _{GS} = 0V			-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V			±100	nA
Gate Threshold Voltage	V _{GS(th)} ⁽⁴⁾	V _{DS} =V _{GS} , I _D =250μA	0.4	0.7	1.0	V
Drain-Source On-Resistance	R _{DS(on)} ⁽⁴⁾	V _{GS} =4.5V, I _D =10A		5.5	7.0	mΩ
		V _{GS} =4.0V, I _D =10A		6.0	7.5	
		V _{GS} =3.8V, I _D =10A		6.5	8.0	
		V _{GS} =3.1V, I _D =10A		7.0	9.0	
		V _{GS} =2.5V, I _D =10A		7.5	10.0	
Dynamic characteristics ⁽⁵⁾						
Input Capacitance	C _{iss}	V _{DS} =10V,V _{GS} =0V,f =1MHz		1500		pF
Output Capacitance	C _{oss}			260		
Reverse Transfer Capacitance	C _{rss}			240		
Switching Characteristics ⁽⁵⁾						
Total Gate Charge	Q _g	V _{DS} =10V,V _{GS} =4.5V,I _D =8A		20		nC
Gate-Source Charge	Q _{gs}			4		
Gate-Drain Charge	Q _{gd}			9		
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V,V _{DS} =10V, R _L =1.2Ω,R _{GEN} =3Ω		5		ns
Turn-On Rise Time	t _r			15		
Turn-Off Delay Time	t _{d(off)}			70		
Turn-Off Fall Time	t _f			22		
Diode Characteristics						
Continuous Source Current	I _S	V _G =V _D =0V , Force Current			25	A
Pulsed Source Current	I _{SM}				75	
Diode Forward Voltage	V _{SD} ⁽⁴⁾	V _{GS} =0V , I _S =10A , T _J =25°C			1.2	V

Notes:

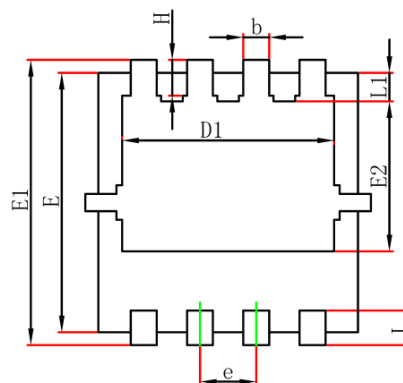
- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 20Z copper
- 2.Pulse Test:Pulse Width < 10us, Duty Cycle < 0.5%.
- 3.The power dissipation is limited by 150°C junction temperature
- 4.Pulse Test : Pulse width≤300μs, duty cycle≤0.5%.
- 5.Guaranteed by design, not subject to production testing.
- 6.The data is theoretically the same as ID, in real applications , should be limited by total power dissipation.

Typical Electrical and Thermal Characteristics

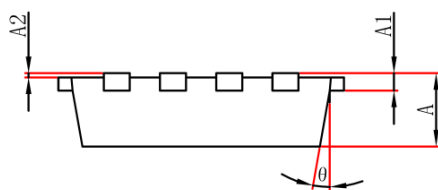


PDFN3.3X3.3-8L Package Information


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	0.10	0.25	0.004	0.010
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.