

Product Summary

V _{(BR)DSS}	R _{DS(on)TYP}	I _D
20V	5.5mΩ@4.5V	25A
	6.0mΩ@4.0V	
	6.5mΩ@3.8V	
	7.0mΩ@3.1V	
	7.5mΩ@2.5V	

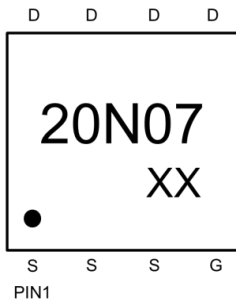
Feature

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

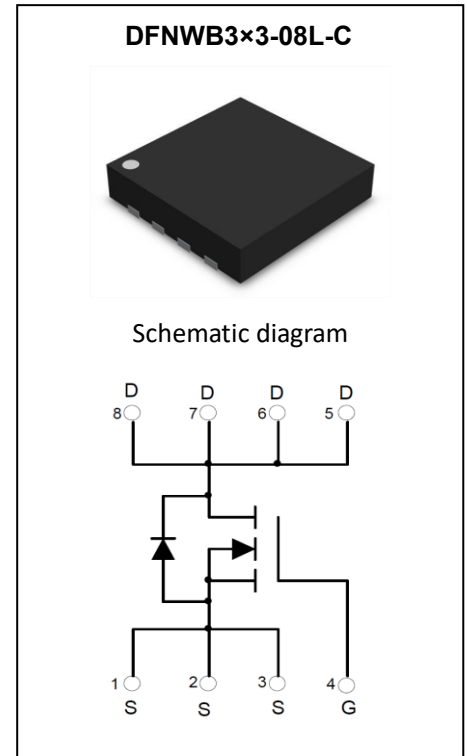
Application

- Battery protection applications
- Load switch

MARKING:



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



ABSOLUTE MAXIMUM RATINGS (T_c=25°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 _{θJA}	42	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55~ +150	°C

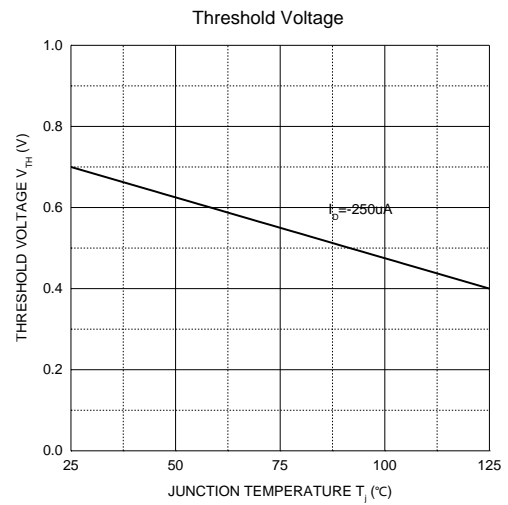
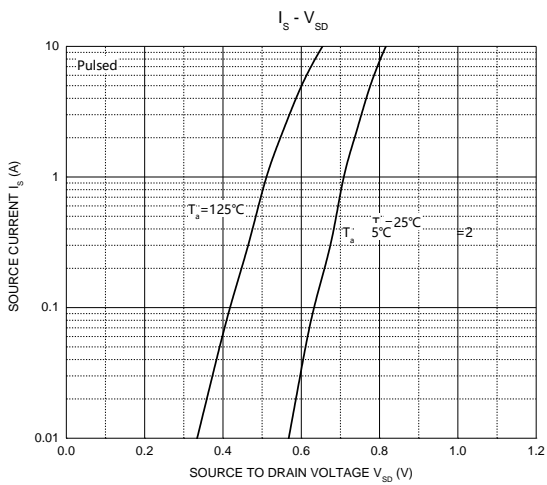
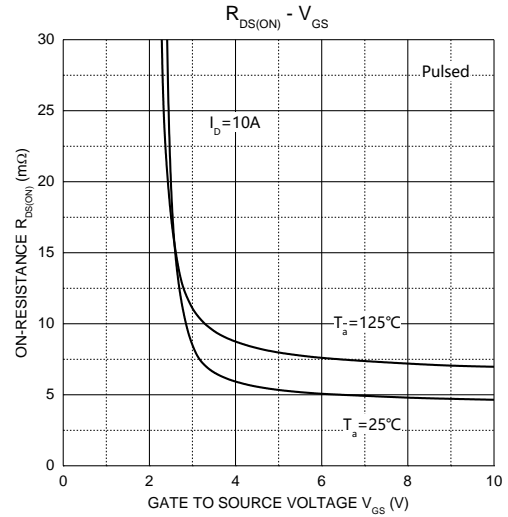
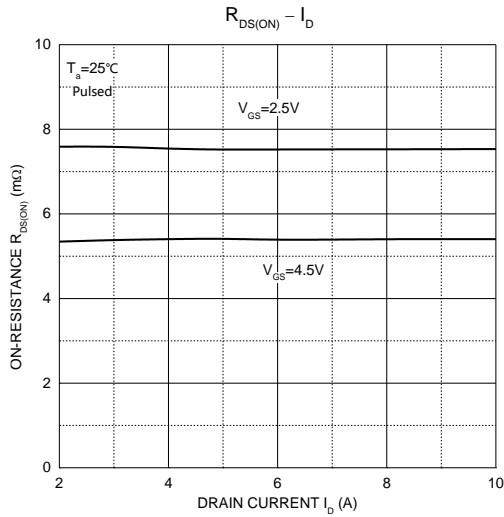
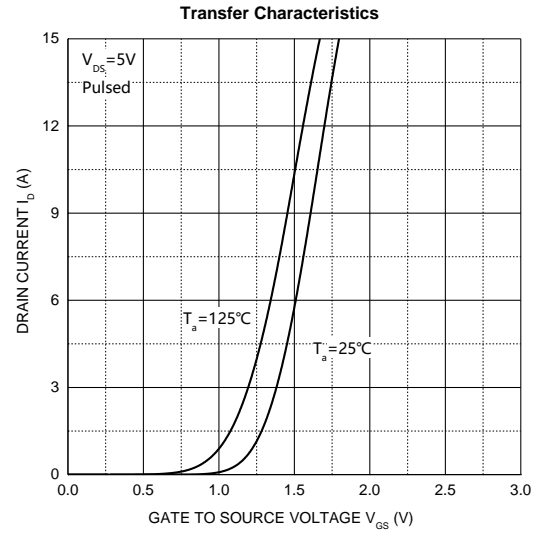
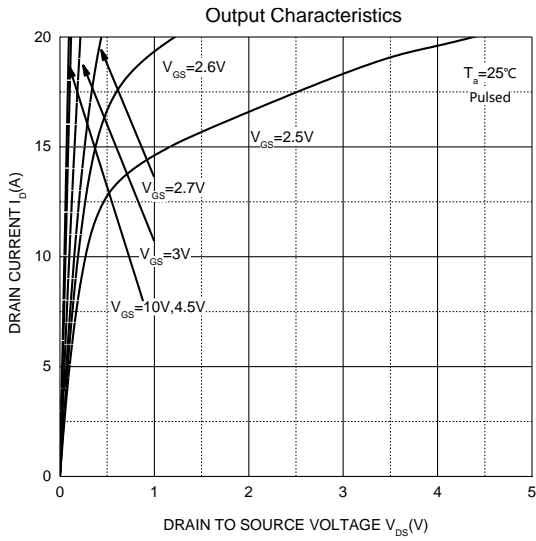
MOSFET ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise noted)

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

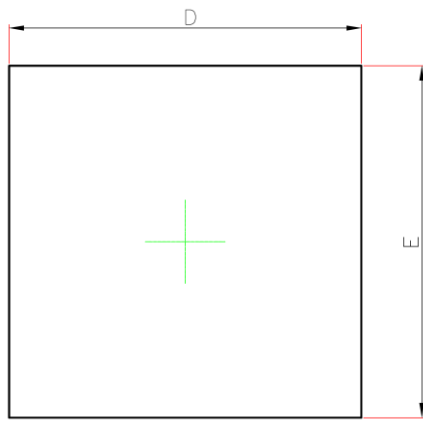
Notes:

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ 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.

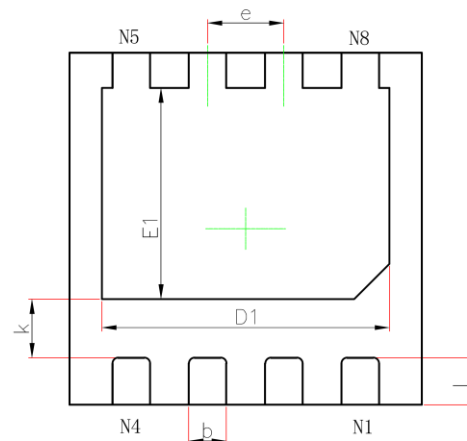
Typical Electrical and Thermal Characteristics



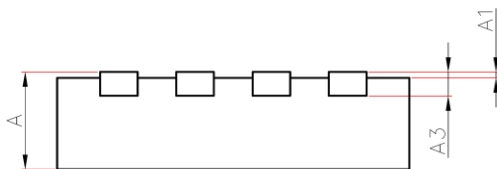
DFNWB3×3-08L-C Package Information



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700/0.800	0.800/0.900	0.028/0.031	0.031/0.035
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	2.924	3.076	0.115	0.121
E	2.924	3.076	0.115	0.121
D1	2.350	2.550	0.093	0.100
E1	1.700	1.900	0.067	0.075
k	0.450	0.550	0.018	0.022
b	0.270	0.370	0.011	0.015
e	0.650TYP.		0.026TYP.	
L	0.324	0.476	0.013	0.019