

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

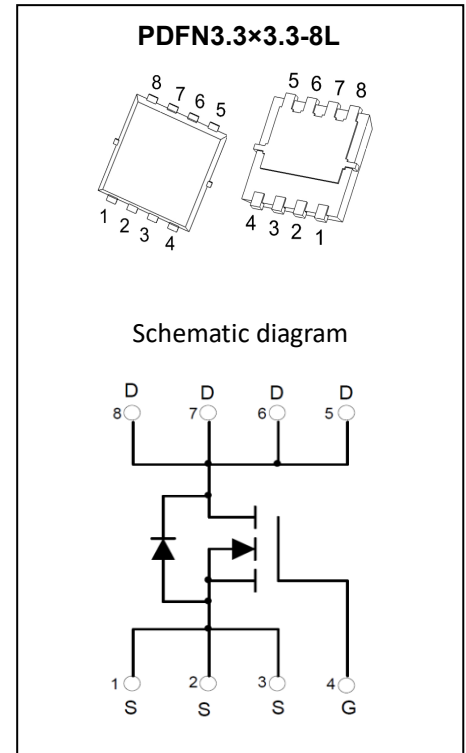
Application

- Battery protection applications
- Load switch

MARKING:



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



ABSOLUTE MAXIMUM RATINGS ($T_C=25^{\circ}C$ 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	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

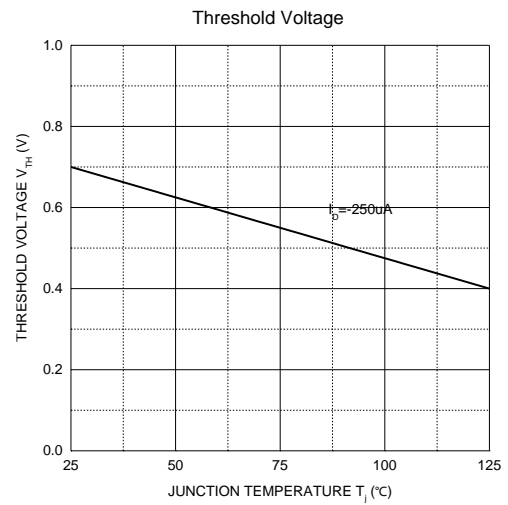
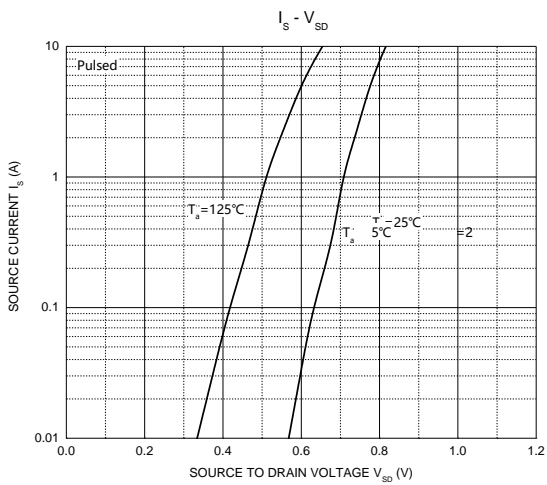
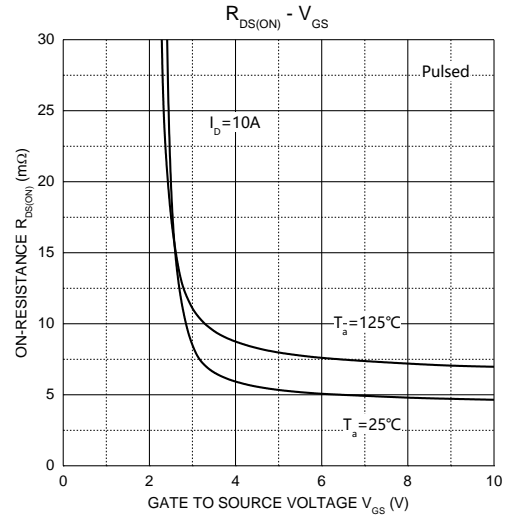
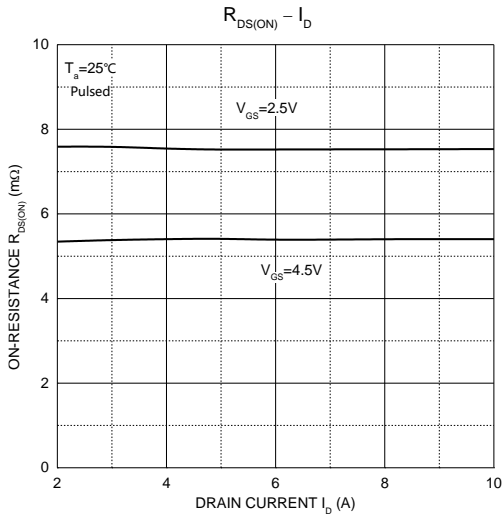
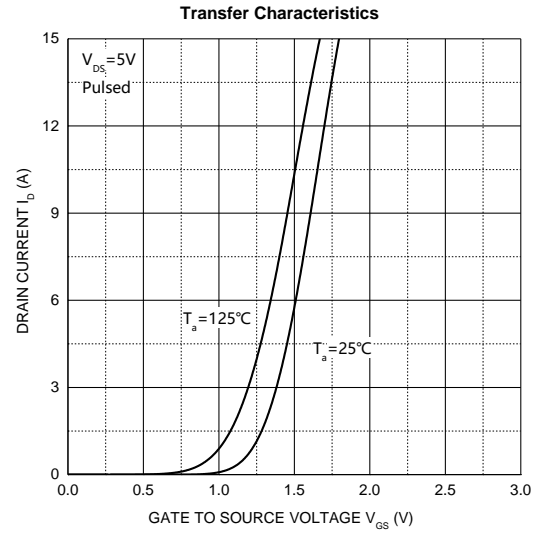
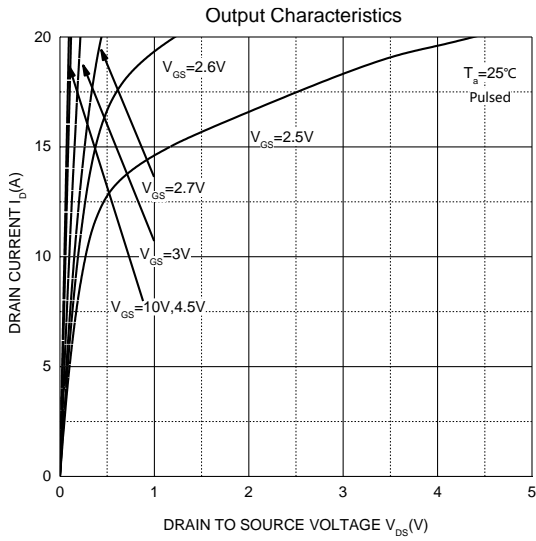
MOSFET ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise noted)

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

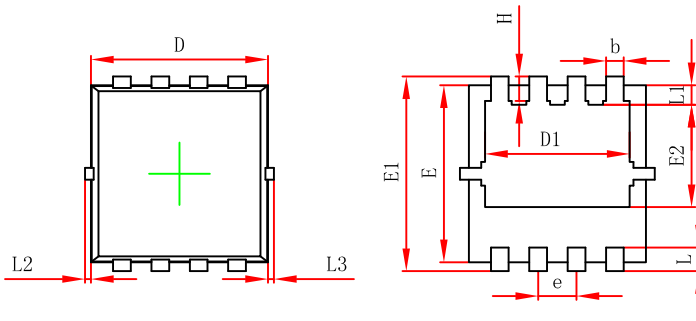
Notes:

- 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

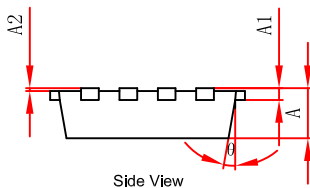


PDFN3.3×3.3-8L Package Information



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	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
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	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°