

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	9m Ω @10V	20A
	12m Ω @4.5V	

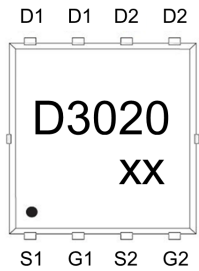
Feature

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

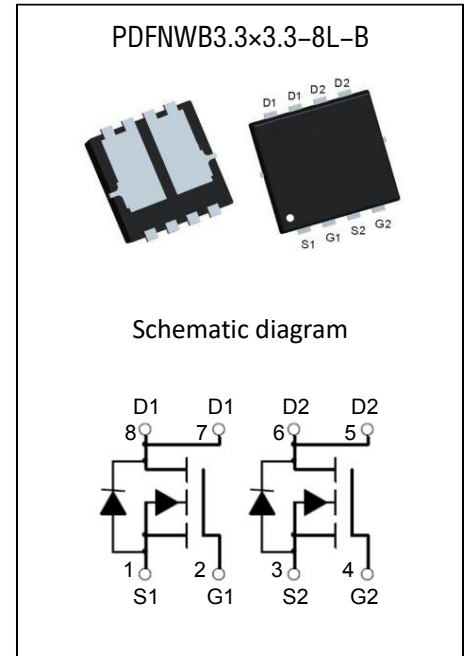
Application

- Battery protection applications
- Load switch

MARKING:



D3020 = Device code
 Solid dot=Pin1 indicator
 XX=Date Code



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$I_D^{(1)}$	20	A
Pulsed Drain Current	$I_{DM}^{(1), (2)}$	60	A
Single Pulsed Avalanche Energy	E_{AS}^*	11	mJ
Avalanche Current	I_{AS}	15	A
Power Dissipation	$P_D^{(3)}$	1.5	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

* E_{AS} Test Condition $V_{DD}=15V, V_{GS}=10V, L=0.1mH, I_{AS}=15A$

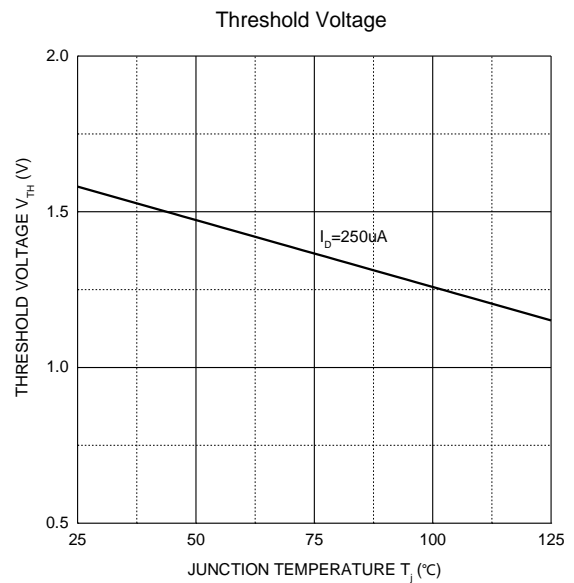
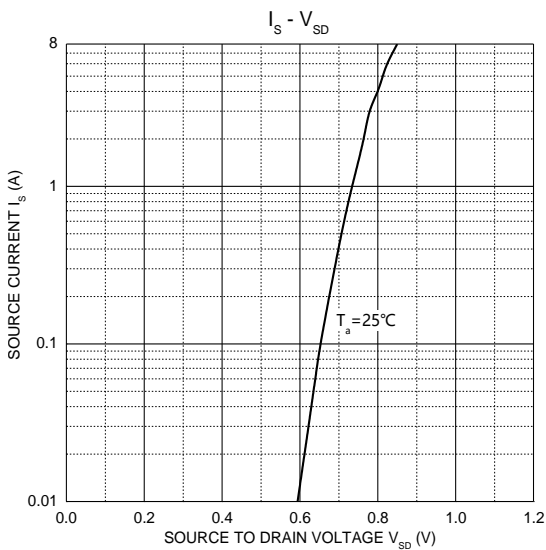
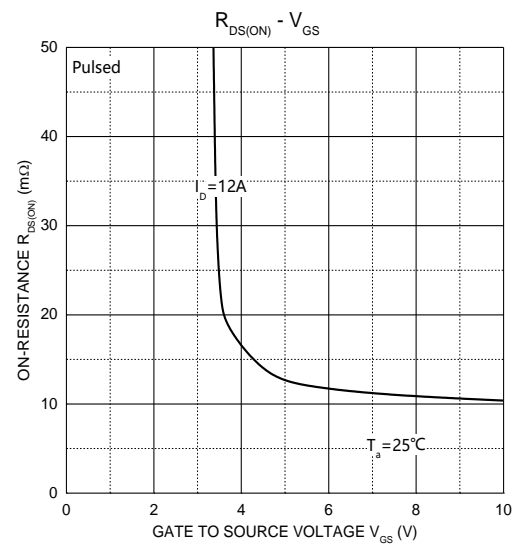
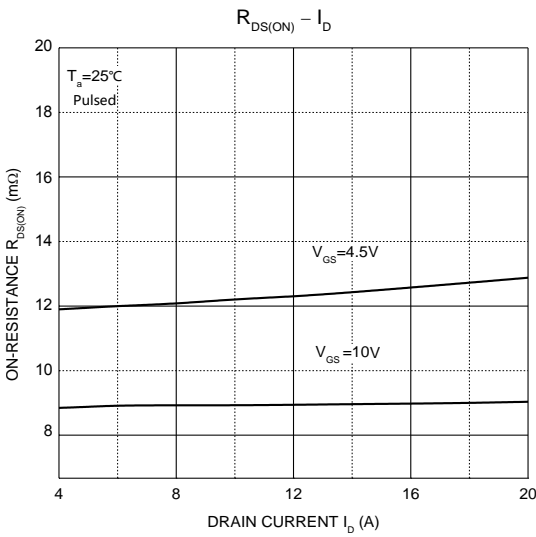
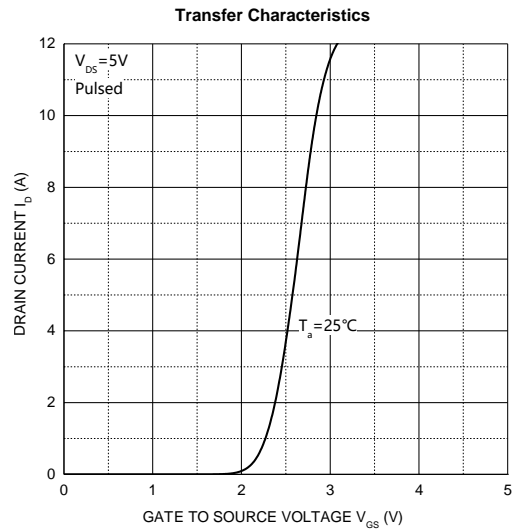
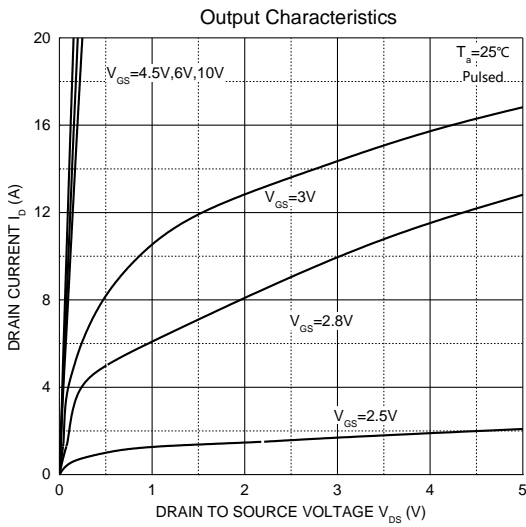
MOSFET ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	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
Gate threshold voltage	V _{GS(th)} ⁽⁴⁾	V _{DS} = V _{GS} , I _D = 250μA	1.0	1.7	3.0	V
Drain-source on-resistance	R _{DS(on)} ⁽⁴⁾	V _{GS} = 10V, I _D = 12A		9	12	mΩ
		V _{GS} = 4.5V, I _D = 10A		12	18	
Forward tranconductance	g _{FS} ⁽⁴⁾	V _{DS} = 5V, I _D = 10A	5	12		S
Dynamic characteristics ⁽⁵⁾						
Input capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		825		pF
Output capacitance	C _{oss}			136		
Reverse transfer capacitance	C _{rss}			110		
Switching Characteristics ⁽⁵⁾						
Total gate charge	Q _g	V _{DS} = 15V, V _{GS} = 10V, I _D = 10A		13		nC
Gate-source charge	Q _{gs}			3		
Gate-drain charge	Q _{gd}			4.5		
Turn-on delay time	t _{d(on)}	V _{DD} = 15V, V _{GS} = 10V, R _G = 1.8Ω, R _L = 1.8Ω			10	ns
Turn-on rise time	t _r				8	
Turn-off delay time	t _{d(off)}				30	
Turn-off fall time	t _f				5	
Diode Characteristics						
Continuous Source Current	I _S	V _G = V _D = 0V, Force Current			20	A
Pulsed Source Current	I _{SM}				60	
Diode Forward Voltage	V _{SD} ⁽⁴⁾	V _{GS} = 0V, I _S = 10A, T _J = 25°C		0.82	1.2	V

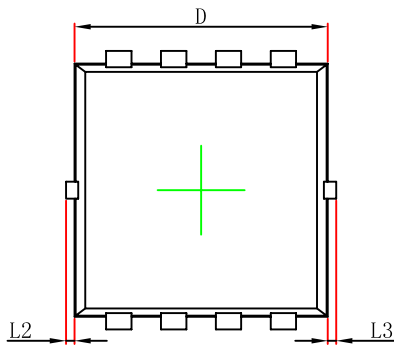
Notes:

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 I_D, in real applications, should be limited by total power dissipation.

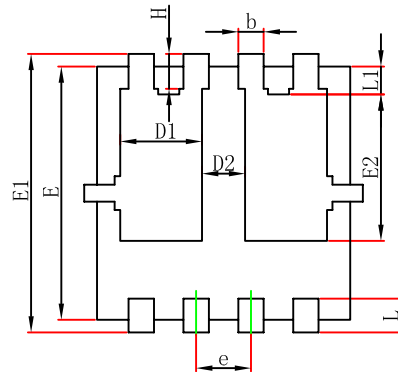
Typical Electrical and Thermal Characteristics



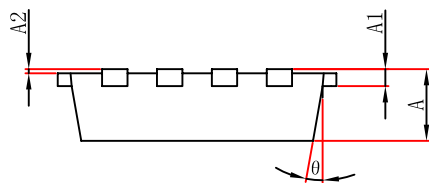
PDFNWB3.3×3.3-8L-B Package Information



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	0.935	1.135	0.037	0.045
D2	0.280	0.480	0.011	0.019
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°

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)