

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	2.3mΩ@10V	125A

Feature

- Shielded Gate Trench Technology
- Low $R_{DS(on)}$
- Low Gate Charge

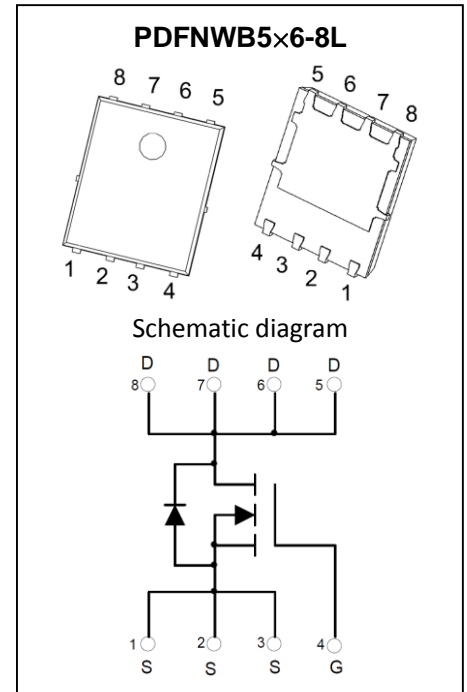
Application

- High efficiency power supply
- Secondary synchronous rectifier

MARKING:



T033N06 = Device code
 XX = Date Code
 Solid dot = Green Device



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	125	A
Pulsed Drain Current	I_{DM}	600	A
Power Dissipation	P_D	3.1	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	40.3	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

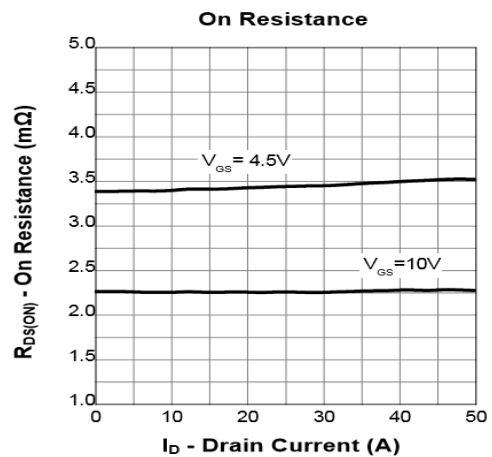
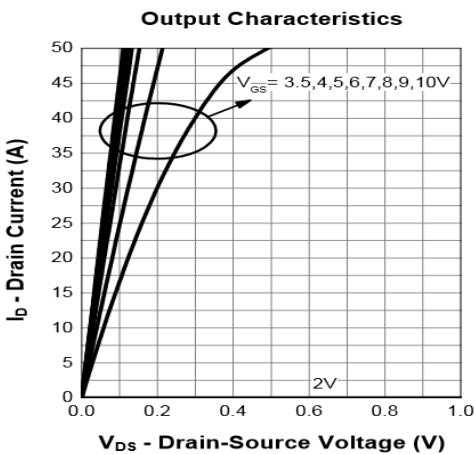
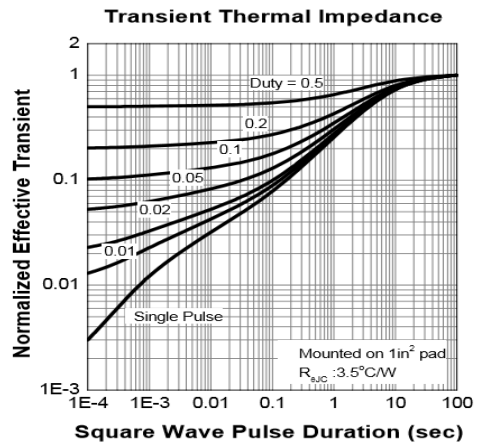
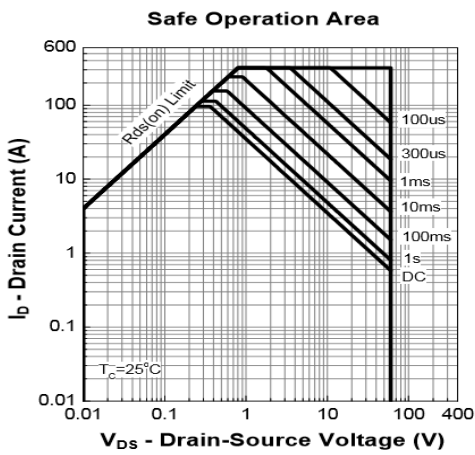
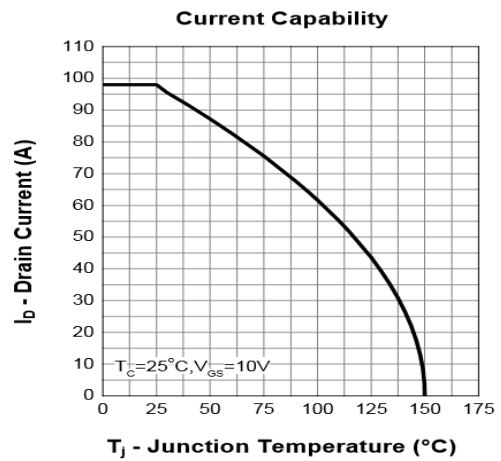
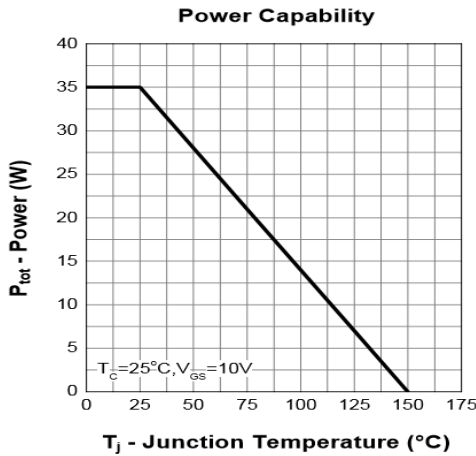
MOSFET ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	60			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 48V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage ¹	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.0	2.0	3.0	V
Drain-source on-resistance ¹	R _{DS(on)}	V _{GS} = 10V, I _D = 20A		2.3	3.3	mΩ
		V _{GS} = 4.5V, I _D = 20A		3.5	4.6	mΩ
Dynamic characteristics²						
Input capacitance	C _{iss}	V _{DS} = 30V, V _{GS} = 0V, f = 1MHz		4895		pF
Output capacitance	C _{oss}			2208		
Reverse transfer capacitance	C _{rss}			171		
Switching Characteristics²						
Total gate charge	Q _g	V _{DS} = 30V, V _{GS} = 10V, I _D = 25A		99		nC
Gate-source charge	Q _{gs}			16		
Gate-drain charge	Q _{gd}			27		
Turn-on delay time	t _{d(on)}	V _{DD} = 30V, R _L = 1.2Ω, I _D = 25A, V _{GEN} = 10 V, R _g = 4.5Ω		14		ns
Turn-on rise time	t _r			36		
Turn-off delay time	t _{d(off)}			75		
Turn-off fall time	t _f			50		
Diode Characteristics						
Diode Forward Voltage ¹	V _{SD}	V _{GS} = 0V, I _S = 25A			1.02	V

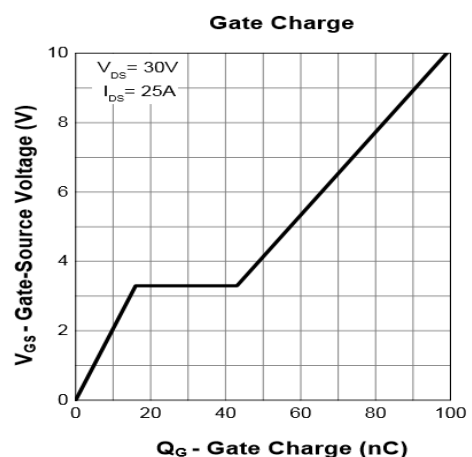
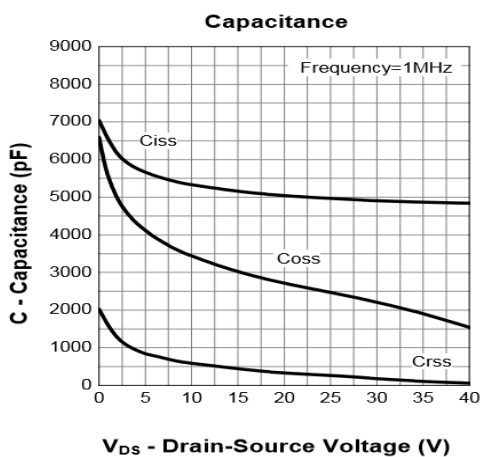
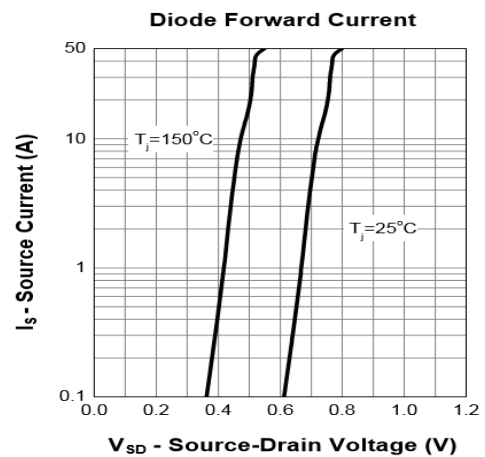
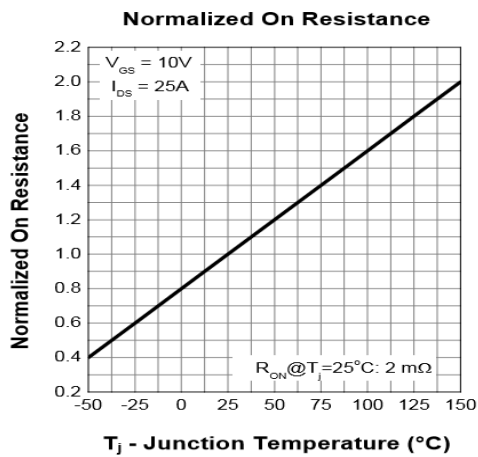
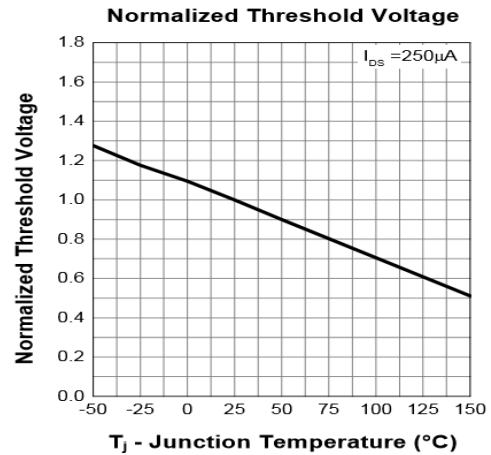
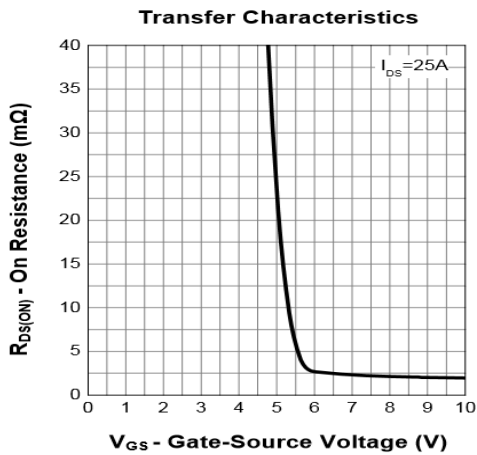
Notes:

1. Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.

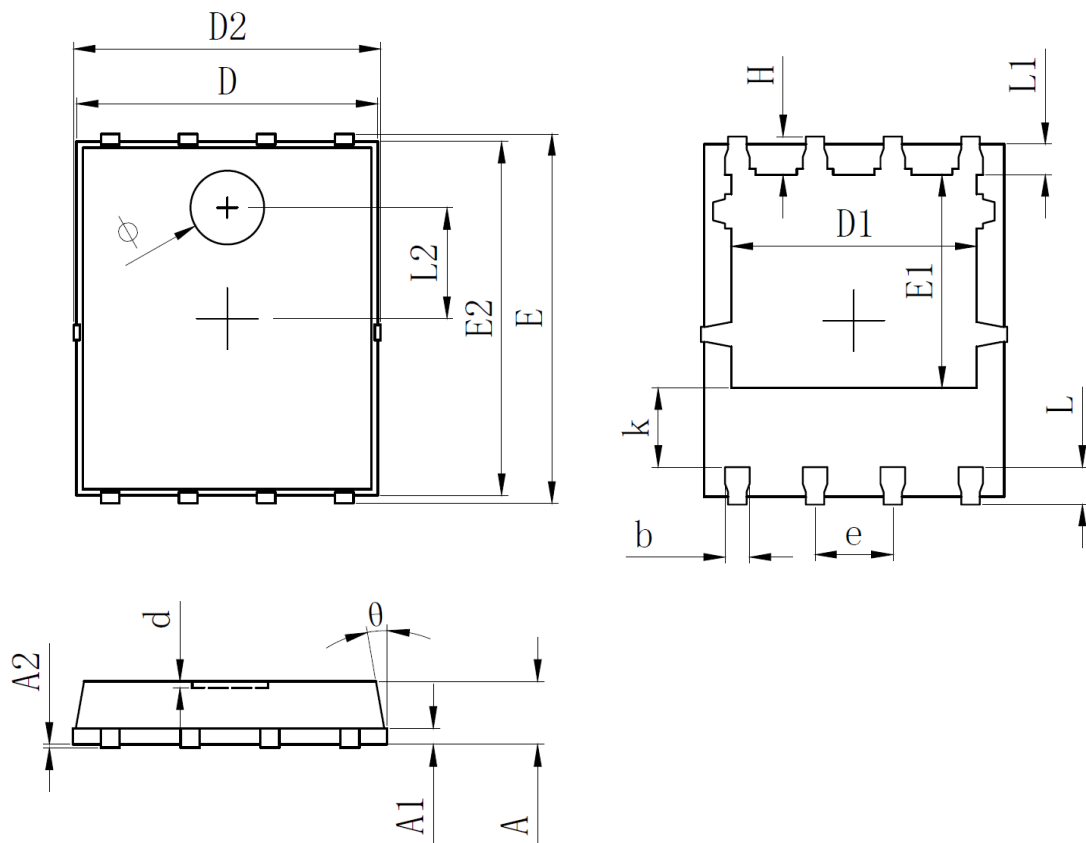
Typical Electrical and Thermal Characteristics



Typical Electrical and Thermal Characteristics



PDFNWB5x6-8L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.254REF		0.010REF	
A2	0.000	0.050	0.000	0.002
D	4.824	4.976	0.190	0.196
D1	3.910	4.110	0.154	0.162
D2	4.924	5.076	0.194	0.200
E	5.924	6.076	0.233	0.239
E1	3.375	3.575	0.133	0.141
E2	5.674	5.826	0.223	0.229
b	0.350	0.450	0.014	0.018
e	1.270TYP		0.050TYP	
L	0.534	0.686	0.021	0.027
L1	0.424	0.576	0.017	0.023
k	1.190	1.390	0.047	0.055
H	0.549	0.701	0.022	0.028
θ	8°	12°	8°	12°
ϕ	1.100	1.300	0.043	0.051
d	-	0.100	-	0.004