

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	22m Ω @10V	7.5A
	24m Ω @4.5V	
	29m Ω @2.5V	

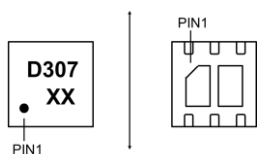
Feature

- Trench Power MOSFET
- Excellent $R_{DS(on)}$
- Low Gate Charge

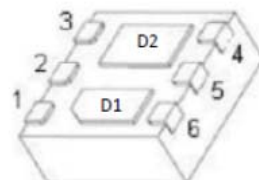
Application

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

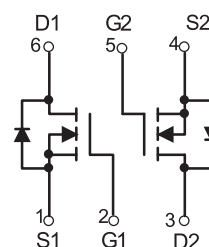
MARKING:



DFNWB2X2-6L



Schematic diagram



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	7.5	A
Pulsed Drain Current ⁽¹⁾	I_{DM}	30	A
Power Dissipation	P_D	0.75	W
Thermal Resistance from Junction to Ambient ⁽²⁾	$R_{\theta JA}$	167	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

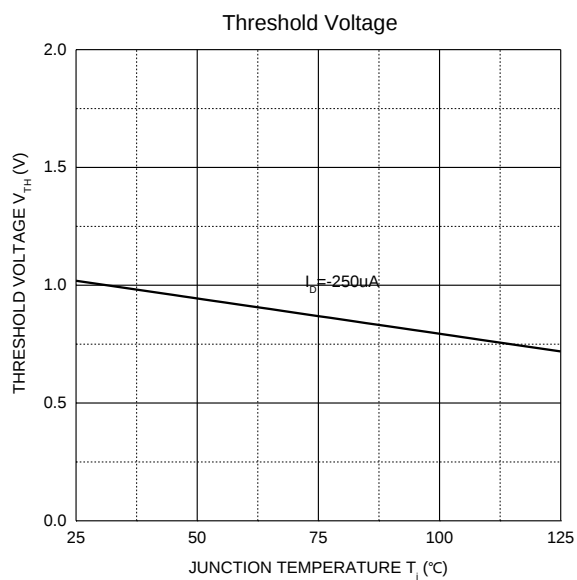
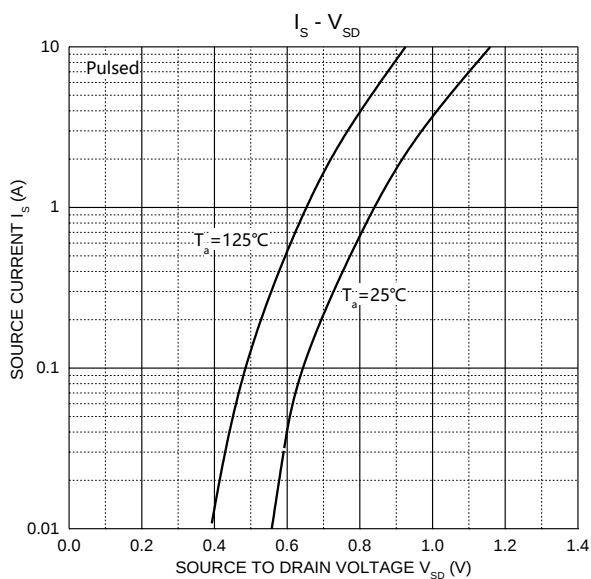
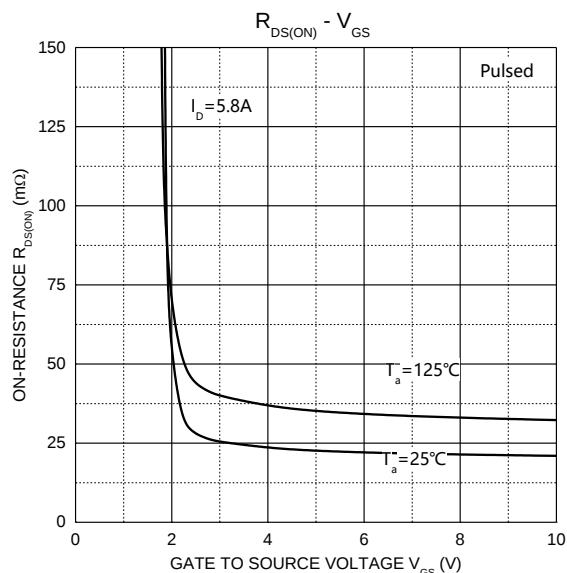
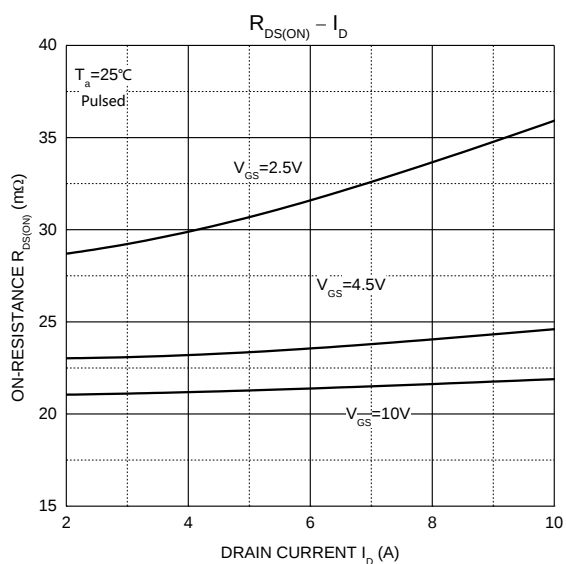
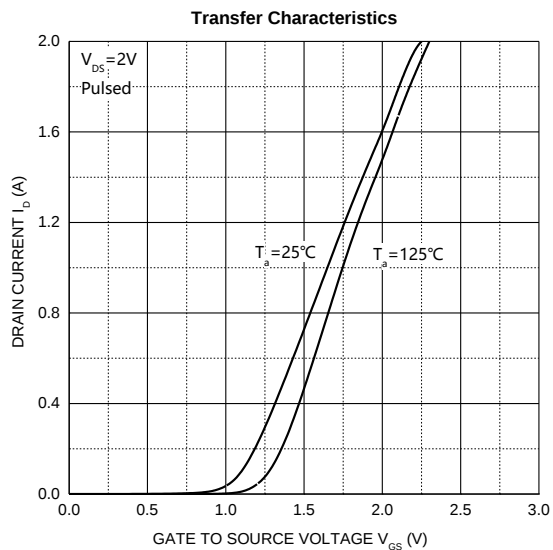
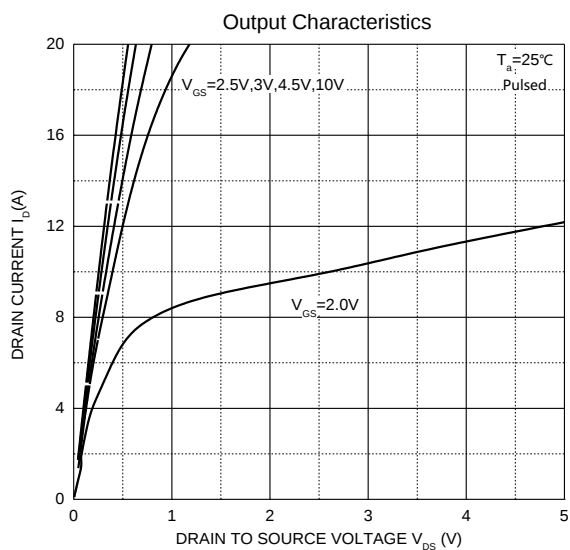
MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

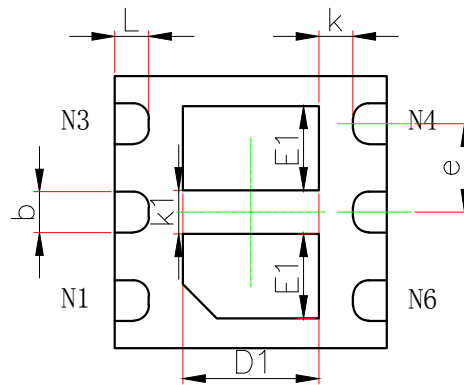
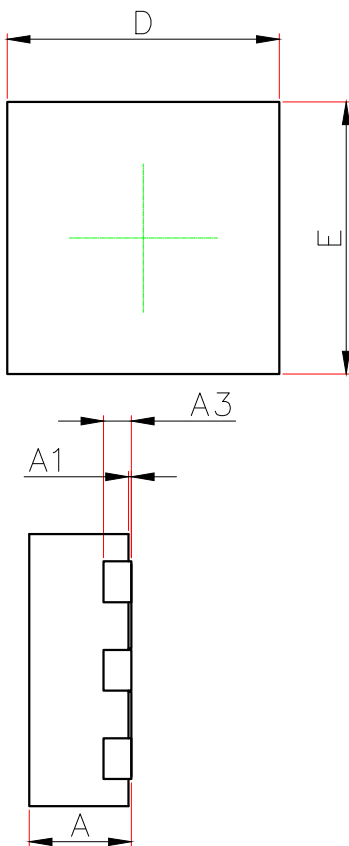
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =24V,V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V			±0.1	μA
Gate threshold voltage ⁽³⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.5	1.0	1.5	V
Drain-source on-resistance ⁽³⁾	R _{DS(on)}	V _{GS} =10V, I _D =7.5A		22	28	mΩ
		V _{GS} =4.5V, I _D =5A		24	33	
		V _{GS} =2.5V, I _D =3A		29	44	
Forward tranconductance	g _{FS}	V _{DS} =5V, I _D =5A	5			S
Dynamic characteristics ⁽⁴⁾						
Input Capacitance	C _{iss}	V _{DS} =10V,V _{GS} =0V,f =1MHz		557		pF
Output Capacitance	C _{oss}			75		
Reverse Transfer Capacitance	C _{rss}			61		
Total Gate Charge	Q _g	V _{GS} =4.5V,V _{DS} =15V,I _D =7.5A		4.7		nC
Gate-Source Charge	Q _{gs}			1.5		
Gate-Drain Charge	Q _{gd}			2.0		
Turn-on delay time	t _{d(on)}	V _{GS} =4.5V,V _{DD} =15V, I _D =1A, R _G =2.8Ω		12		ns
Turn-on rise time	t _r			55		
Turn-off delay time	t _{d(off)}			20		
Turn-off fall time	t _f			15		
Source-Drain Diode characteristics						
Diode Forward voltage ⁽³⁾	V _{DS}	V _{GS} =0V, I _S =1A			1.2	V

Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t < 5$ sec.
3. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics



DFNWB2X2-6L Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN.	MAX.	MIN.	MAX.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	1.900	2.100	0.075	0.083
E	1.900	2.100	0.075	0.083
D1	0.900	1.100	0.035	0.043
E1	0.520	0.720	0.020	0.028
b	0.250	0.350	0.010	0.014
e	0.650TYP.		0.026TYP.	
k	0.200MIN.		0.008MIN.	
k1	0.320REF.		0.013REF.	
L	0.200	0.300	0.008	0.012