

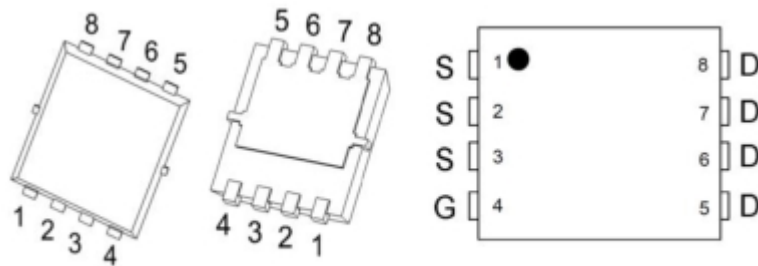
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	10mΩ@10V	14A
	14mΩ@4.5V	

Feature

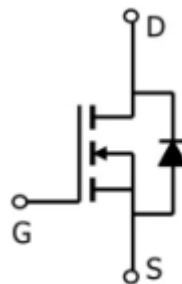
- Enhancement mode
- Low on-resistance $R_{DS(on)}$
- Pb-free lead plating; RoHS compliant

Package

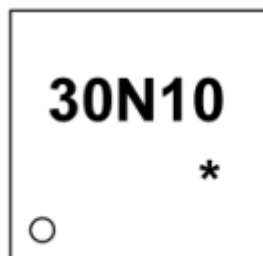


PDFNWB3.3×3.3-8L

Circuit diagram



Marking



30N10 =Device Code
***** =Month Code

Absolute maximum ratings

(T_a=25°C unless otherwise noted)

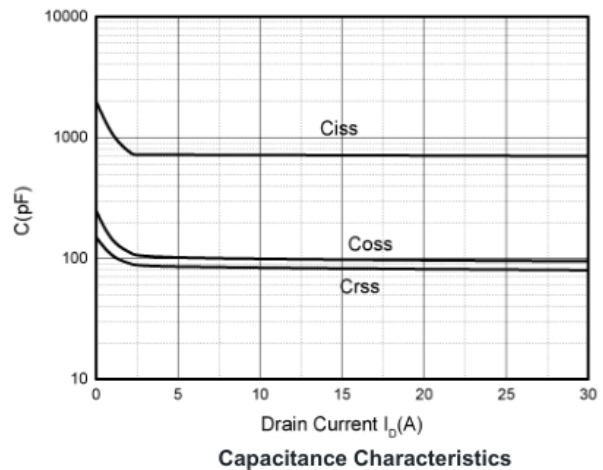
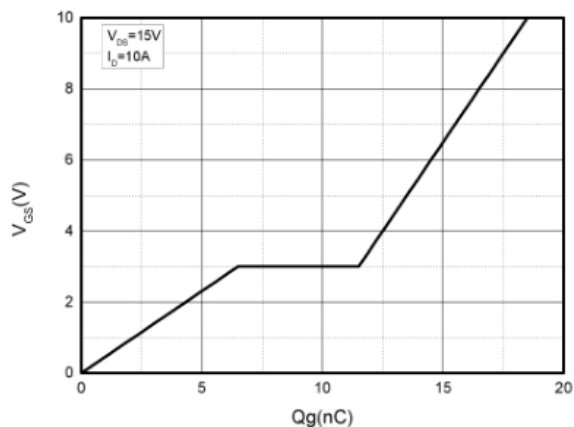
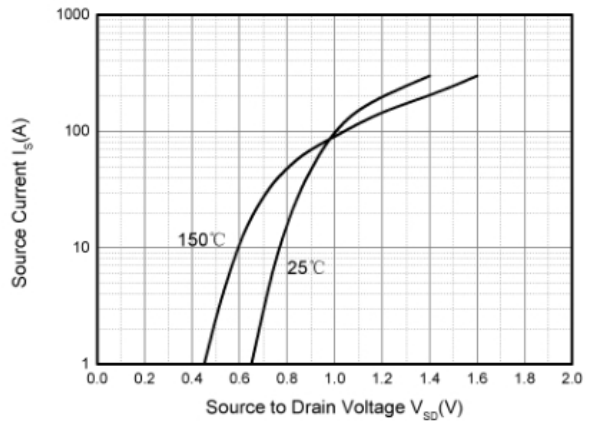
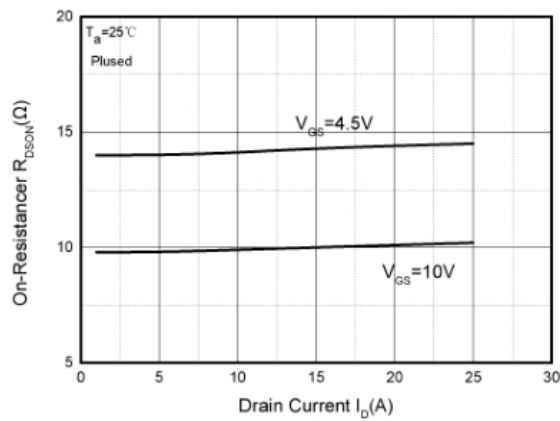
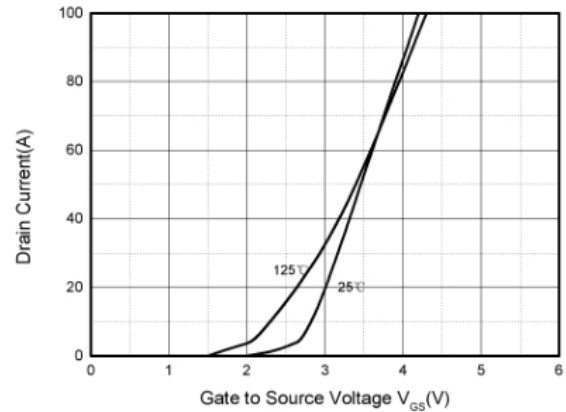
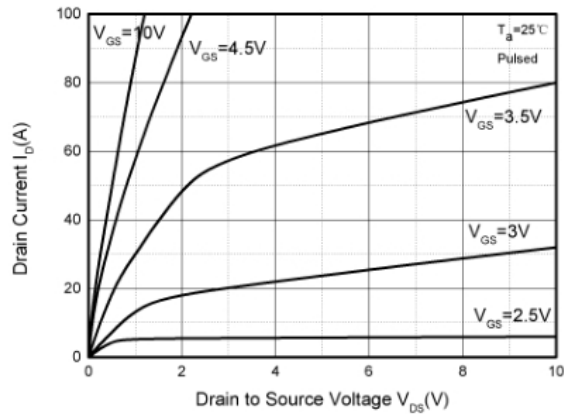
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	30	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D	14	A
Pulsed Drain Current	I _{DM}	56	A
Total Power Dissipation	P _D @T _C =25°C	22	W
Thermal Resistance from Junction to Case	R _{θJC}	5.68	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 To 150	°C

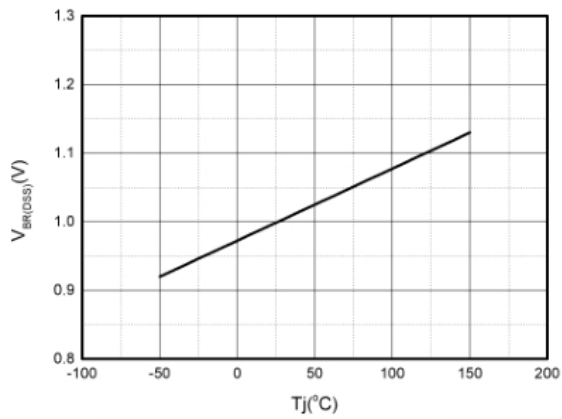
Electrical characteristics

($T_A=25^{\circ}\text{C}$, unless otherwise noted)

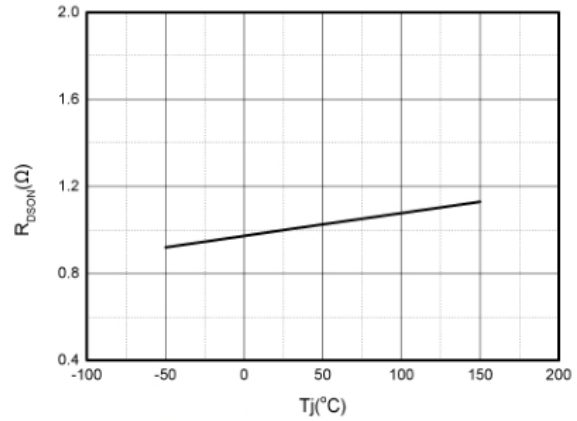
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V _{GS} = 0V, I _D =250μA	30			V
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.5	2.5	V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =24V, V _{GS} = 0V, T _J =25°C			1	uA
Gate-Source Leakage	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	uA
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =15A		10	14	mΩ
		V _{GS} =4.5V, I _D =10A		14	28	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHz		720		pF
Output Capacitance	C _{OSS}			100		
Reverse Transfer Capacitance	C _{rSS}			85		
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =10V, I _D =10A		15		pF
Gate-Source Charge	Q _{gs}			5		
Gate-Drain Charge	Q _{gd}			3.5		
Switching Characteristics						
Turn-on Delay Time	T _{d(on)}	V _{DD} =15V, V _{GS} =10V, R _G =3Ω, I _D =20A		5		nS
Turn-on Rise Time	T _r			4		
Turn-off Delay Time	T _{d(off)}			20		
Turn-off Fall Time	T _f			5.5		
Source-Drain Diode Characteristics						
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} = 0V , T _J =25°C			1.2	V

Typical Characteristics

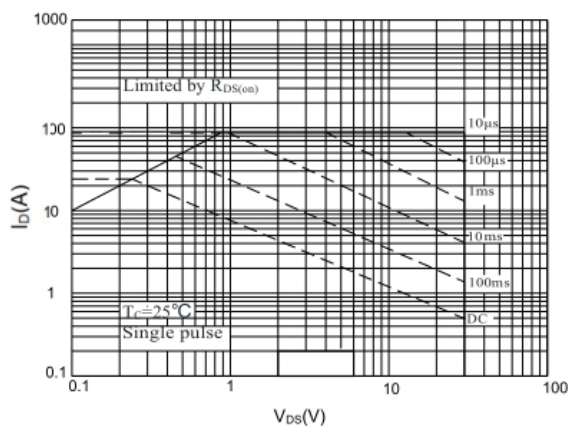




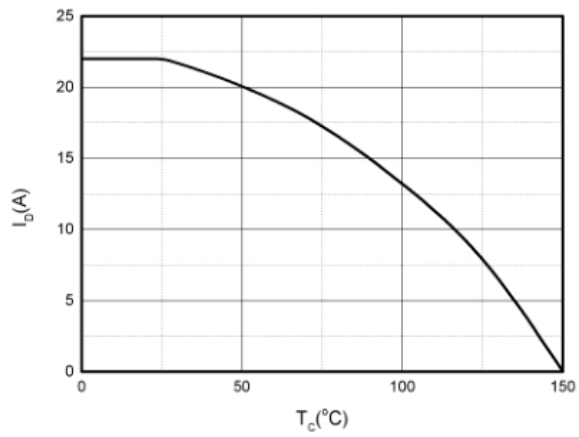
Normalized Breakdown Voltage vs. Junction Temperature



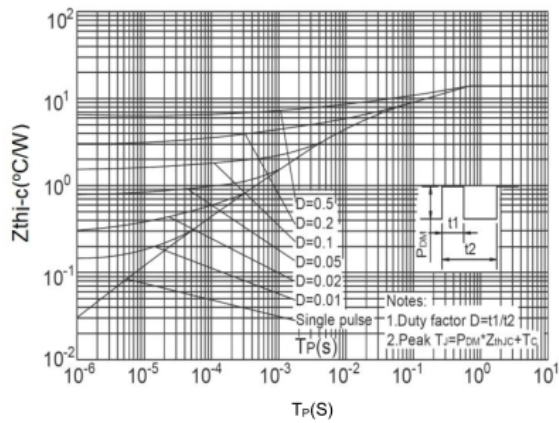
Normalized on Resistance vs. Junction Temperature



Maximum Safe Operating Area

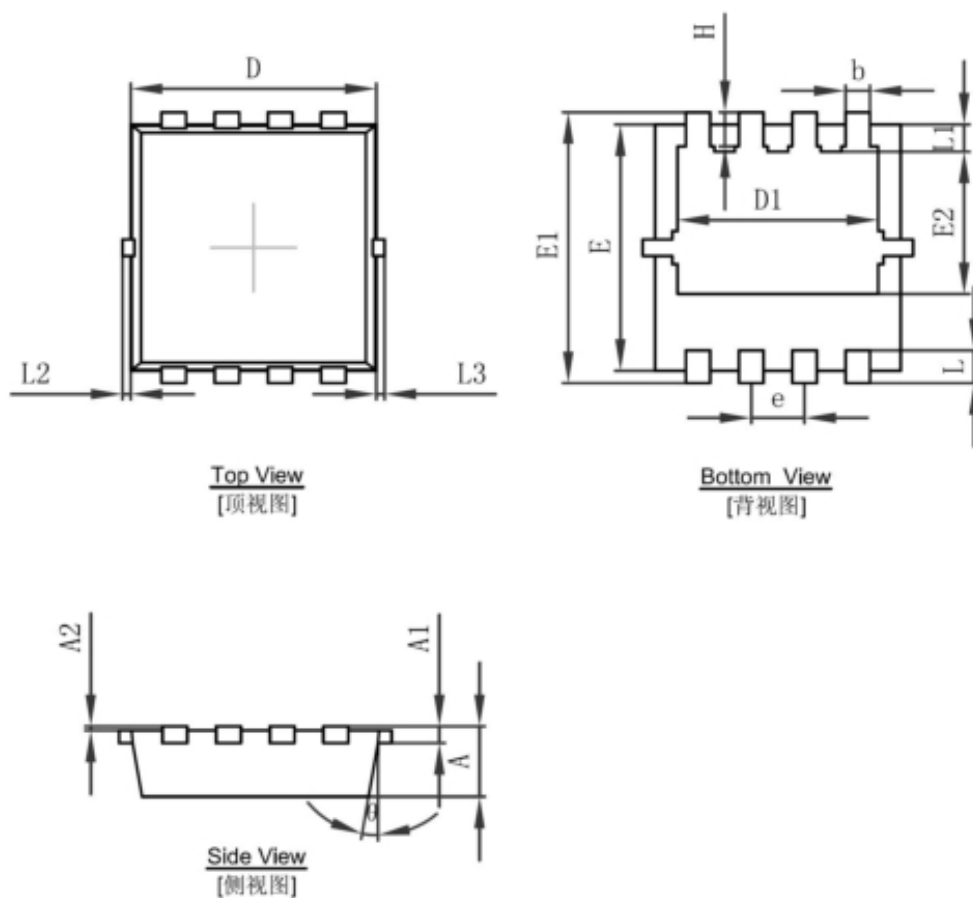


Maximum Continuous Drain Current vs. Case Temperature



Maximum Effective Transient Thermal Impedance, Junction-to-Case

PDFNWB3.3×3.3-8L Package Information



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°