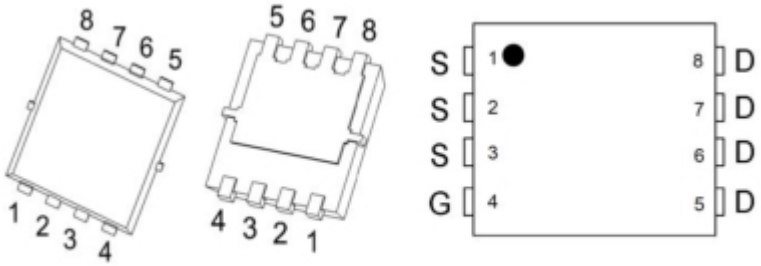
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	7.5mΩ@10V	20A
	9mΩ@4.5V	

Feature

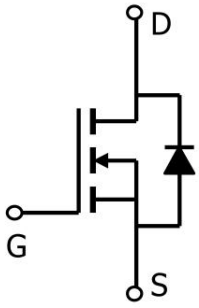
- Enhancement mode
- Low on-resistance $R_{DS(on)}$
- Pb-free lead plating; RoHS compliant

Package



PDFNWB3.3×3.3-8L

Circuit diagram



Marking

30N08 =Device Code
* =Month Code

Absolute maximum ratings

(T_a=25℃ 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	20	A
Pulsed Drain Current	I_{DM}	80	A
Single Pulse Avalanche Energy[1]	E_{AS}	112	mJ
Avalanche Current	I_{AS}	22	
Total Power Dissipation	P_D	21	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	7.1	℃/W
Storage Temperature Range	T_{STG}	-55 to 150	℃
Operating Junction Temperature Range	T_J	-55 to 150	℃

Electrical characteristics

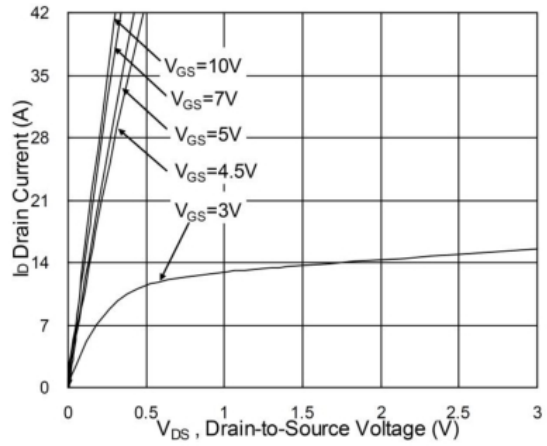
(T_A=25℃, unless otherwise noted)

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
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =30V, V_{GS} = 0V			1	uA
Gate-Source Leakage	I_{GSS}	V_{GS} =±20V, V_{DS} =0V			±100	uA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1	1.5	2.2	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =8A		7.5	9	mΩ
		V_{GS} =4.5V, I_D =6A		9	14	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=15V, V_{GS}=0V, f=1.0MHz		1317		pF
Output Capacitance	C_{oss}			163		
Reverse Transfer Capacitance	C_{rss}			131		
Switching Characteristics						
Turn-on Delay Time	$T_{d(on)}$	V_{GS}=10V, V_{DS}=15V, I_D=10A, R_G=3Ω		6.2		nS
Turn-on Rise Time	T_r			59		
Turn-off Delay Time	$T_{d(off)}$			27.6		
Turn-off Fall Time	T_f			8.4		
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=25V, I_D =12A		12.6		pF
Gate-Source Charge	Q_{gs}			4.2		
Gate-Drain Charge	Q_{gd}			5.1		
Source-Drain Diode Characteristics						
Gate-Drain Charge	V_{SD}	I_S=1A, V_{GS} = 0V			1.2	V

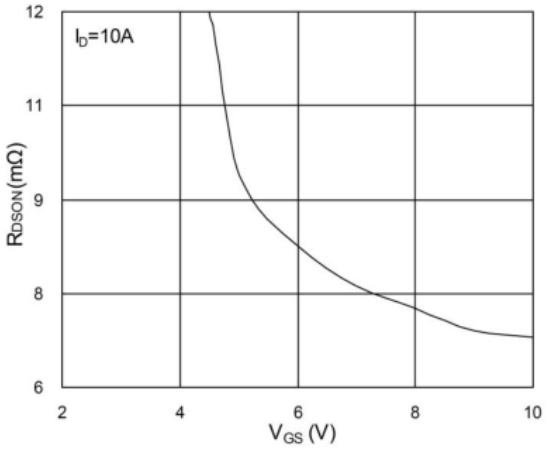
Notes:

1. T_j=25℃, V_{DD}=20V, V_G=10V, L=0.5mH, Rg=25Ω

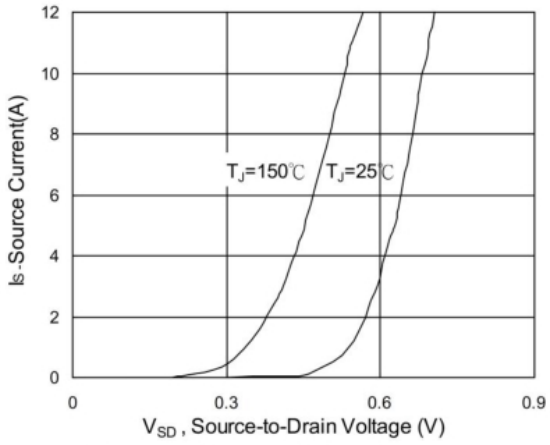
Typical Characteristics



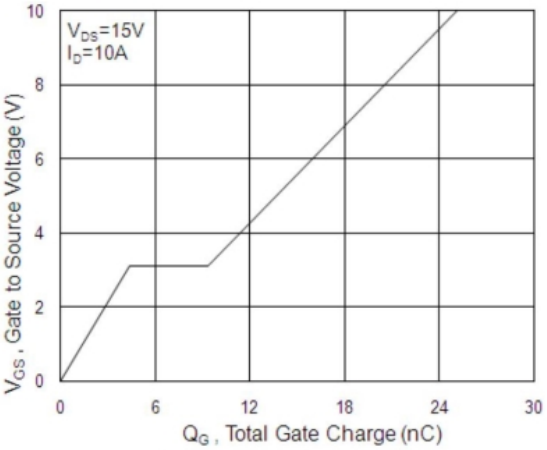
Typical Output Characteristics



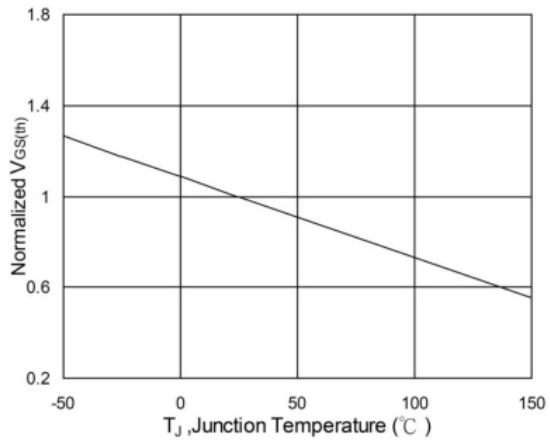
On-Resistance vs.Gate-Source



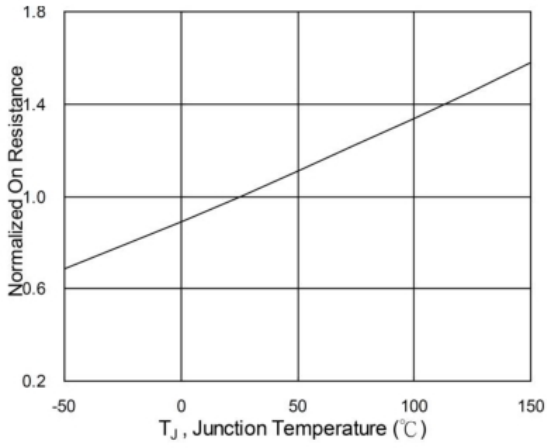
Forward Characteristics of reverse



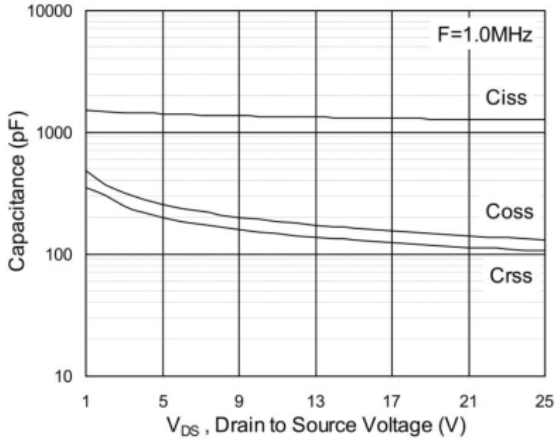
Gate-Charge Characteristics



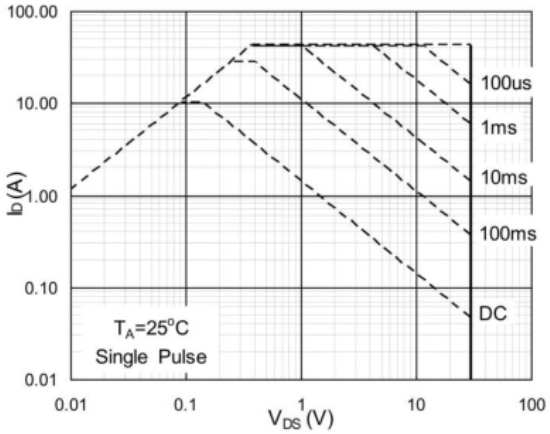
Normalized $V_{GS(th)}$vs.T_J



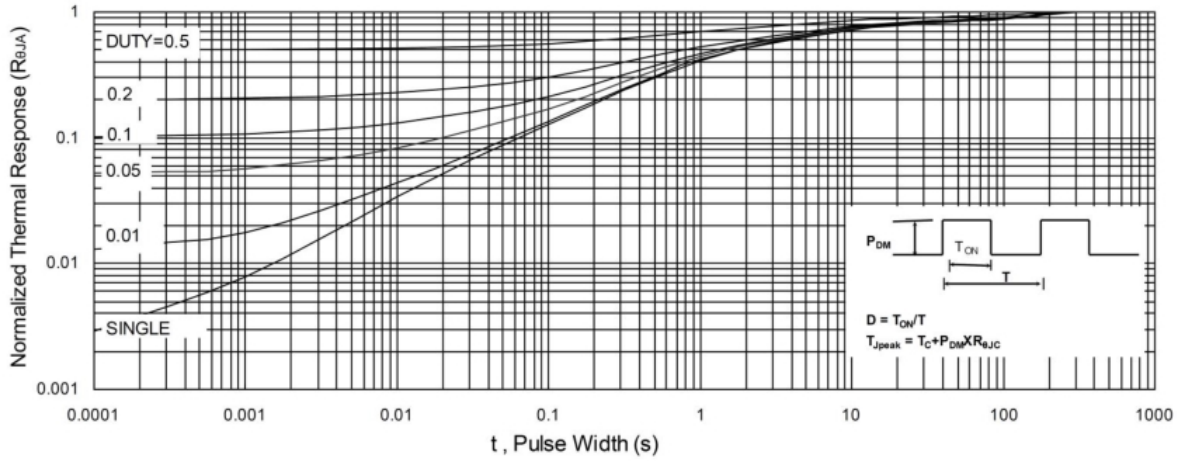
Normalized R_{DSON}vs.T_J



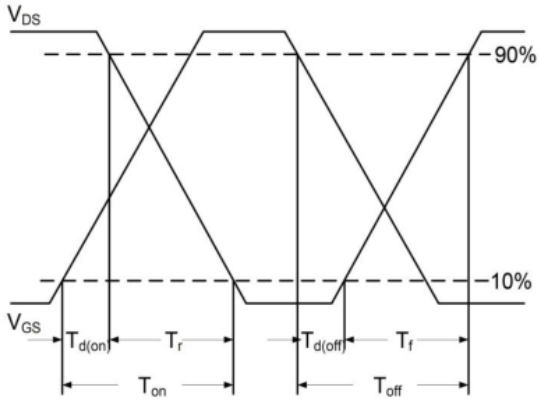
Capacitance



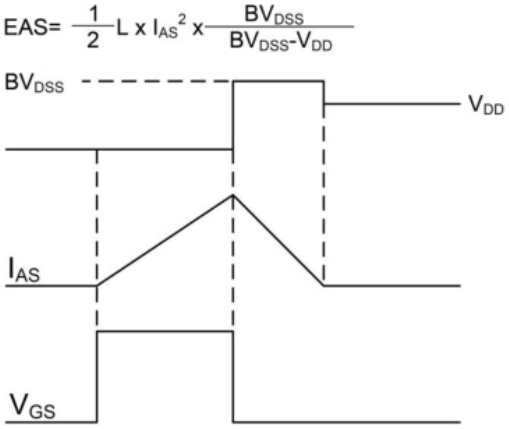
Safe Operating Area



Normalized Maximum Transient Thermal Impedance

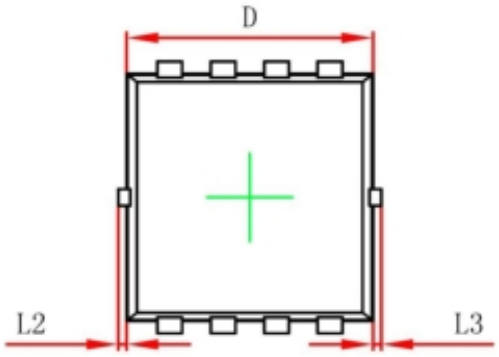


Switching Time Waveform

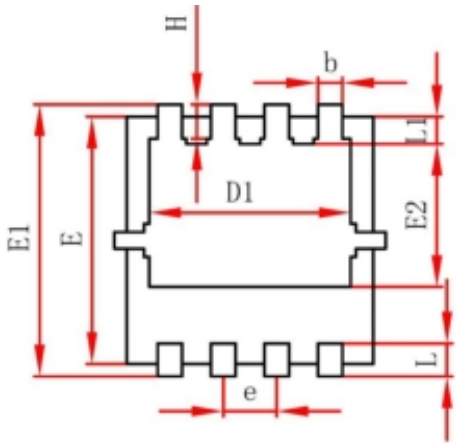


Unclamped Inductive Switching Waveform

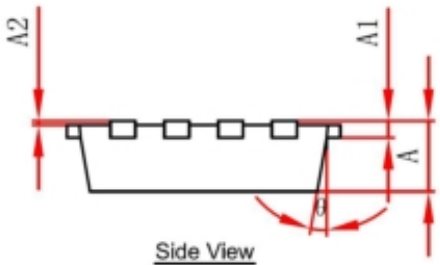
PDFNWB3.3×3.3-8L Package Information



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°