



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	15mΩ@-10V	-25A
	21mΩ@-4.5V	

Feature

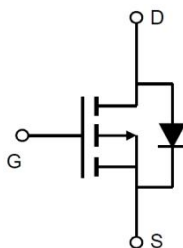
- Enhancement mode
- Low on-resistance $R_{DS(on)}$
- Pb-free lead plating; RoHS compliant

Package

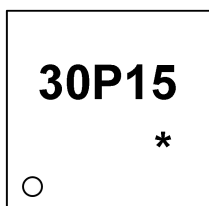


PDFNWB3.3×3.3-8L

Circuit diagram



Marking



30P15 =Device Code
* =Week Code

**Absolute maximum ratings (Ta=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 25	V
Continuous Drain Current	I_D	-25	A
Pulsed Drain Current ¹⁾	I_{DM}	-80	A
Power Dissipation	P_D	33	W
Thermal Resistance from Junction to Ambient ²⁾	$R_{\theta JA}$	3.8	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics (T_A=25 °C, unless otherwise noted)

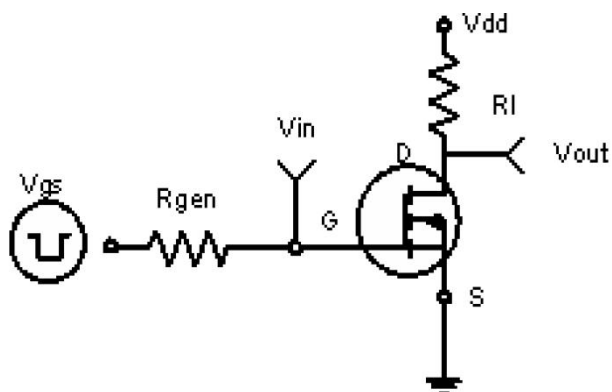
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -30V,V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1	-1.5	-2.5	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-9A		15	20	mΩ
		V _{GS} =-4.5V, I _D =-6A		21	30	
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V,f=1MHz		1600		pF
Output Capacitance	C _{oss}			350		
Reverse Transfer Capacitance	C _{rss}			300		
Switching Characteristics						
Turn-on delay time	t _{d(on)}	V _{DD} =-15V,ID=-1A, V _{GS} =-10V,R _{GEN} =6Ω		10		ns
Turn-on rise time	t _r			15		
Turn-off delay time	t _{d(off)}			110		
Turn-off fall time	t _f			70		
Total gate charge	Q _g	V _{DS} =-15V,V _{GS} =-9.1V, I _D =-10A		30		nC
Gate-source charge	Q _{gs}			5.5		
Gate-drain charge	Q _{gd}			8		
Source-Drain Diode Characteristics						
Body Diode Voltage	V _{SD}	I _S =-9.1A, V _{GS} = 0V			-1.2	V

Notes:

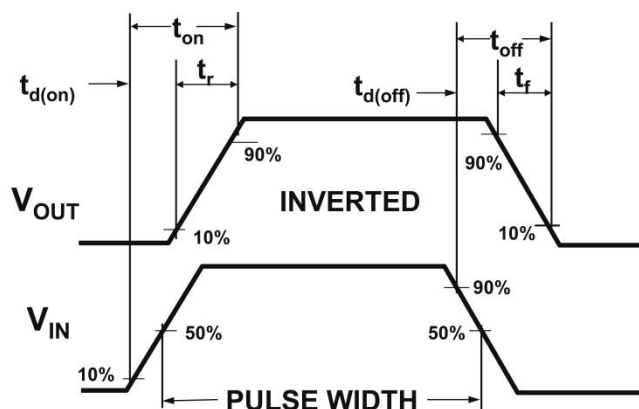
- 1) Repetitive rating: Pulse width limited by junction temperature.
- 2) Surface mounted on FR4 board, $t \leq 10s$.



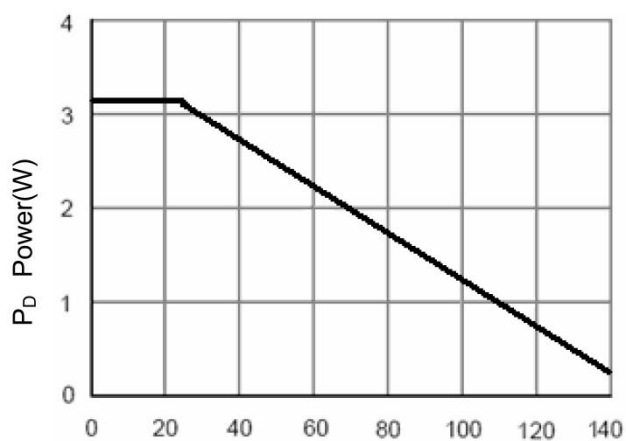
Typical Characteristics



Switching Test Circuit

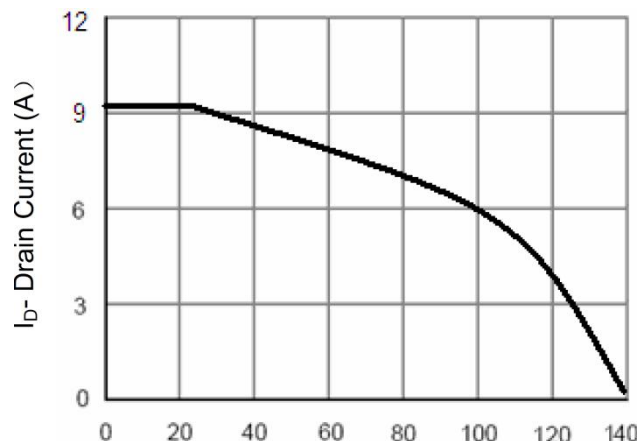


Switching Waveforms



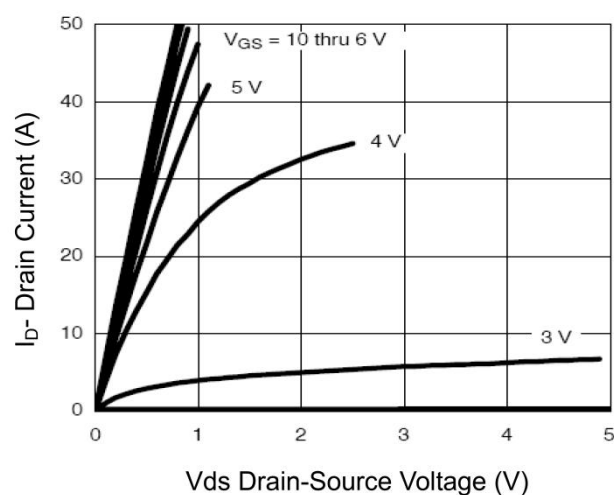
T_J-Junction Temperature(°C)

Power Dissipation



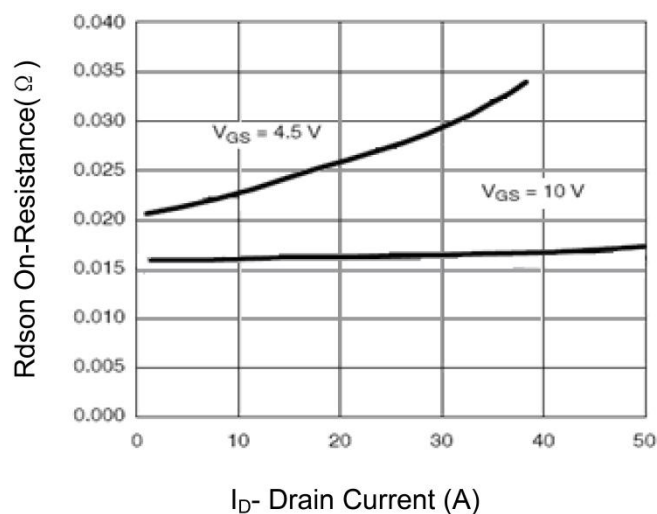
T_J-Junction Temperature(°C)

Drain Current



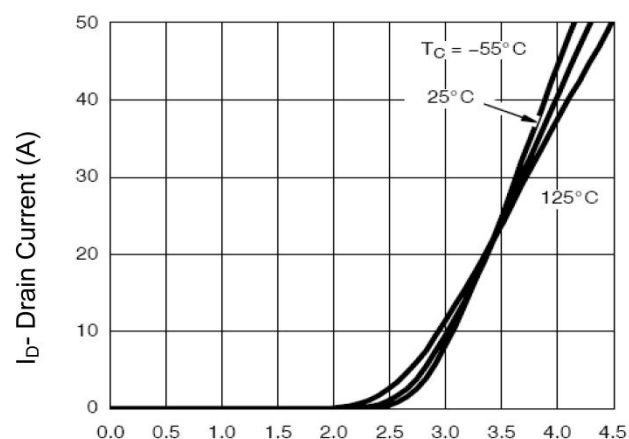
V_{ds} Drain-Source Voltage (V)

Output Characteristics

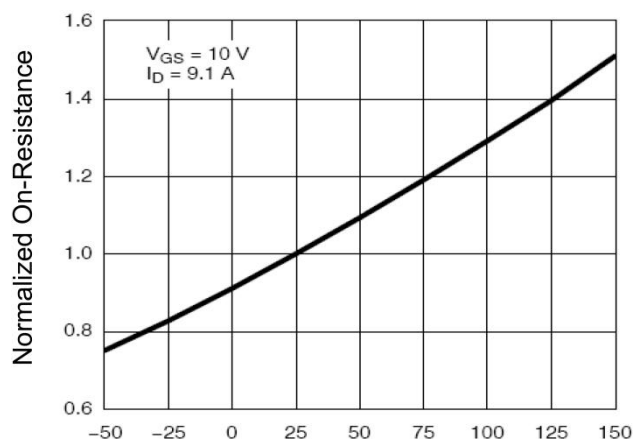


I_D- Drain Current (A)

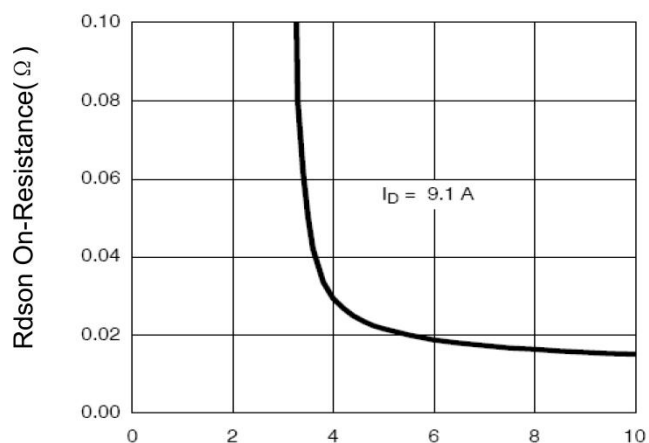
Drain-Source On-Resistance



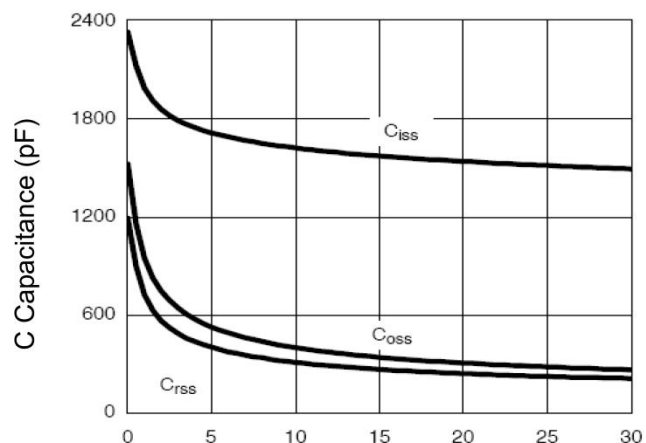
Transfer Characteristics



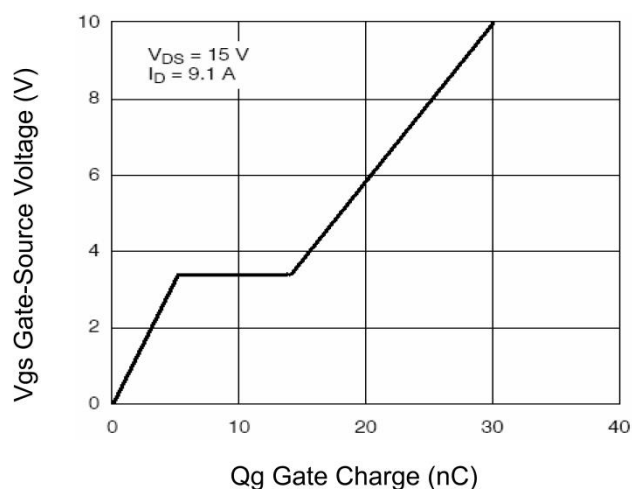
Drain-Source On-Resistance



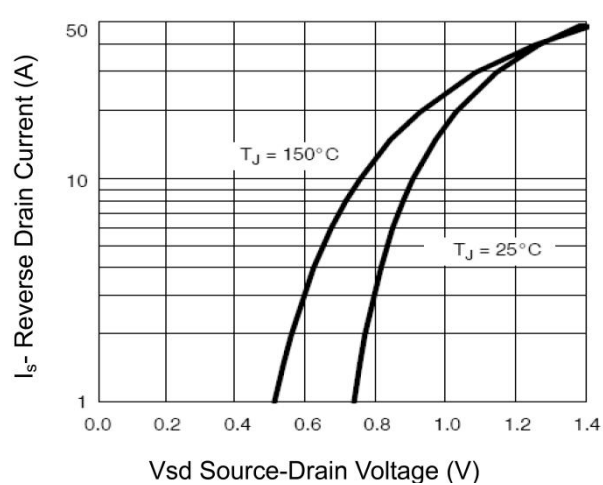
R_{dson} vs V_{GS}



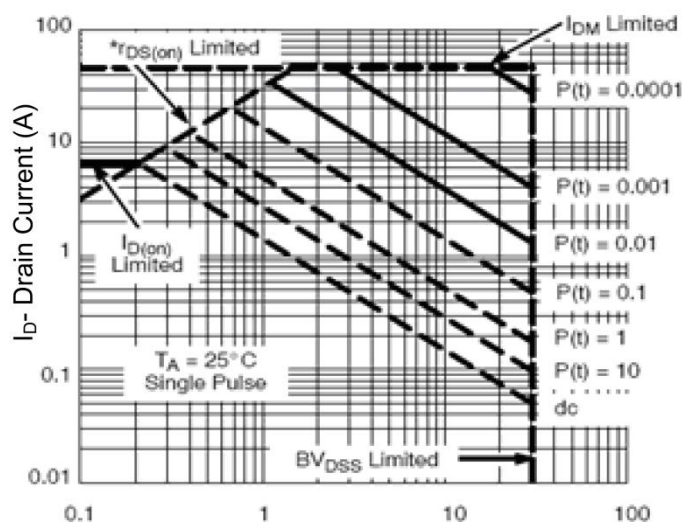
Capacitance vs V_{ds}



Gate Charge

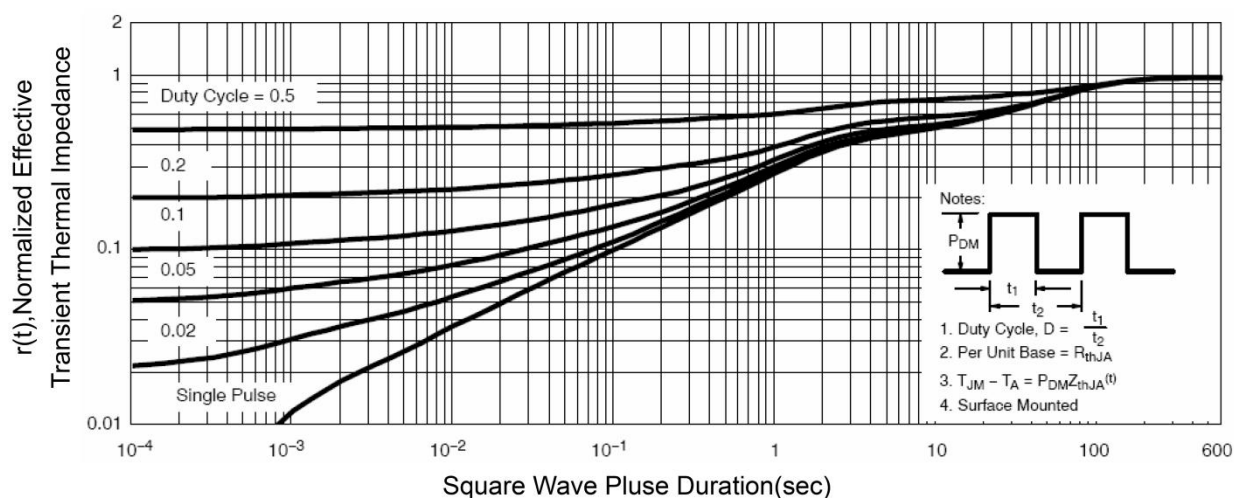


Source- Drain Diode Forward



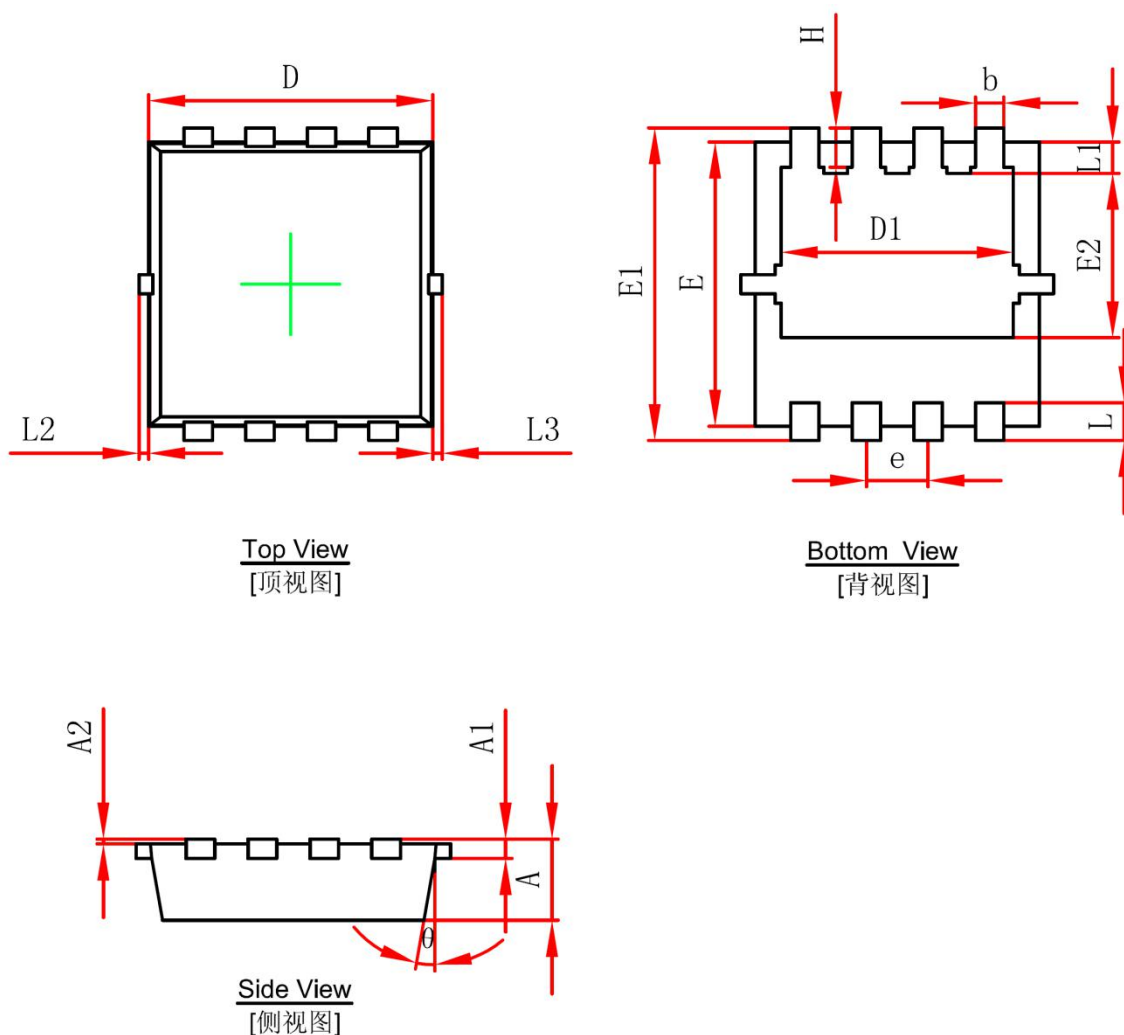
Vds Drain-Source Voltage (V)

Safe Operation Area



Normalized Maximum Transient Thermal Impedance

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°