

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	25mΩ@-10V	-10A
	36mΩ@-4.5V	

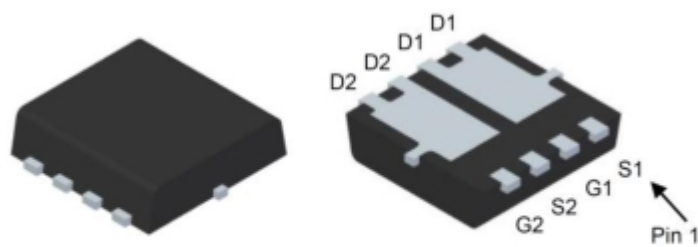
Feature

- Low On-Resistance
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage

Application

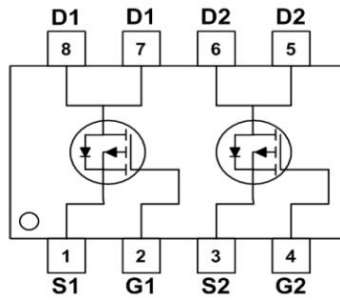
- PWM application
- Load switch
- Battery charge in cellular handset

Package



PDFNWB3.3×3.3-8L-B

Circuit diagram



Marking



30P25D =Device Code
* =Month Code

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}	± 20	V
Drain Current	I_D	-10	A
Pulsed Drain Current	I_{DM}	-40	A
Total Power Dissipation @ $T_c=25^{\circ}\text{C}$	P_D	32	W
Thermal Resistance Junction-to-Case @ Steady State	$R_{\theta JC}$	3.9	$^{\circ}\text{C}$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~ +150	$^{\circ}\text{C}$

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
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -30V, V _{GS} = 0V			-1	μA
Gate-Source Leakage	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	μA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.5	-2.5	V
Drain-Source On-Resistance ¹	R _{DS(on)}	V _{GS} = -10V, I _D = -4A		25	32	mΩ
		V _{GS} = -4.5V, I _D = -2A		36	45	
Dynamic Characteristics						
Input Capacitance	C _{iSS}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz		870		pF
Output Capacitance	C _{oSS}			130		
Reverse Transfer Capacitance	C _{rSS}			93		
Total Gate Charge	Q _g	V _{DS} = -15V, I _D = -5A, V _{GS} = -4.5V,		7.8		nC
Gate-Source Charge	Q _{gs}			2.7		
Gate-Drain Charge	Q _{gd}			2.8		
Switching Characteristics						
Turn-on Rise Time	T _{d(on)}	V _{DS} = -15V, I _D = -1A, V _{GS} = -10V, R _G = 6Ω		6.5		nS
Turn-off Delay Time	T _r			8.8		
Turn-off Fall Time	T _{d(off)}			73		
Turn-On Delay Time	T _f			44		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	I _{SD} = -1A, V _{GS} = 0V			-1.2	V

Typical Characteristics

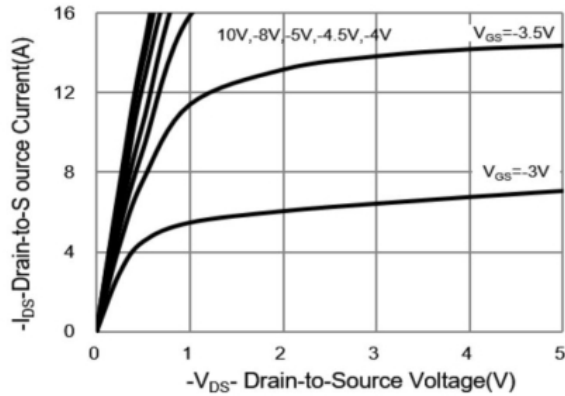


Fig.1 On-Region Characteristics

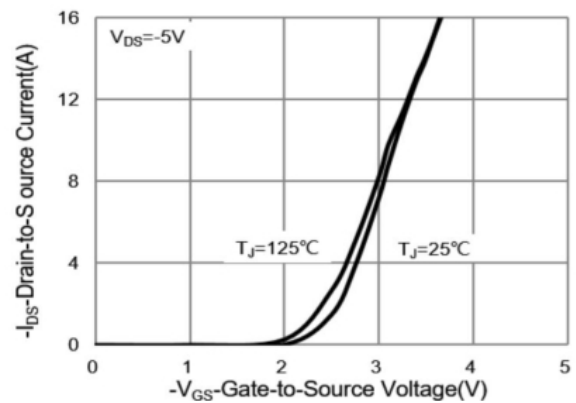


Fig.2 Transfer Characteristics

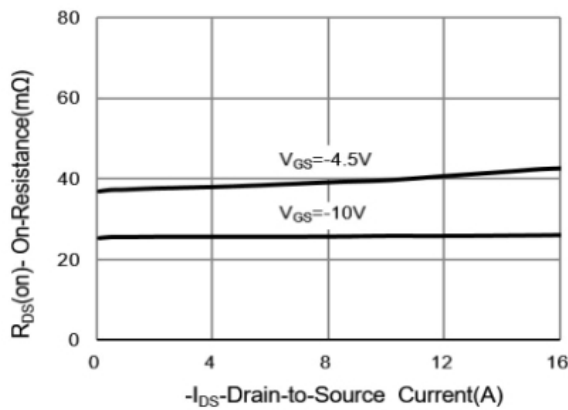


Fig.3 On-Resistance vs. Drain Current

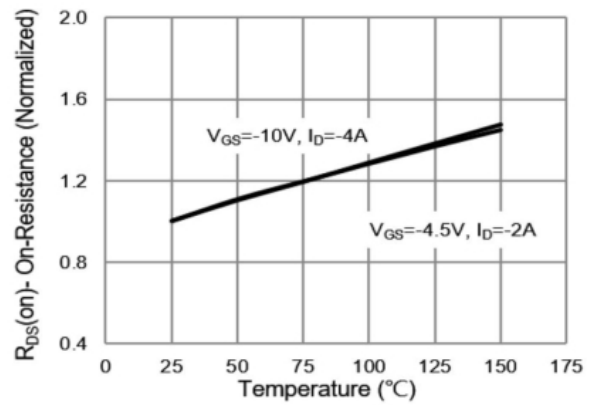


Fig.4 On-Resistance vs. Junction temperature

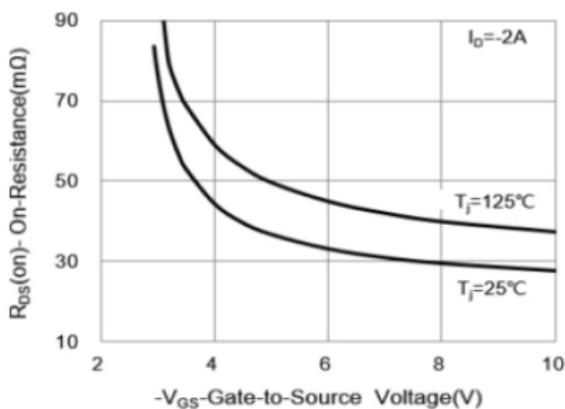


Fig.5 On-Resistance Variation with V_{GS} .

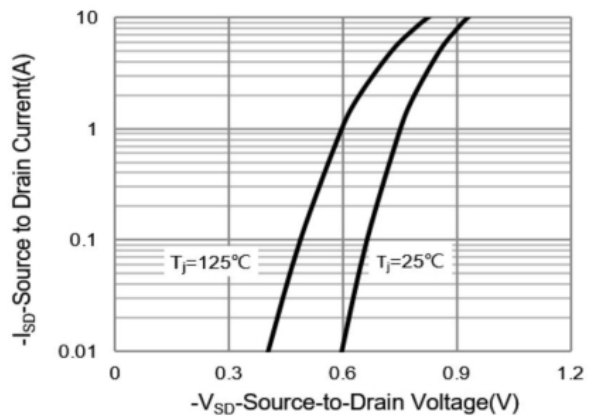


Fig.6 Body Diode Characteristics

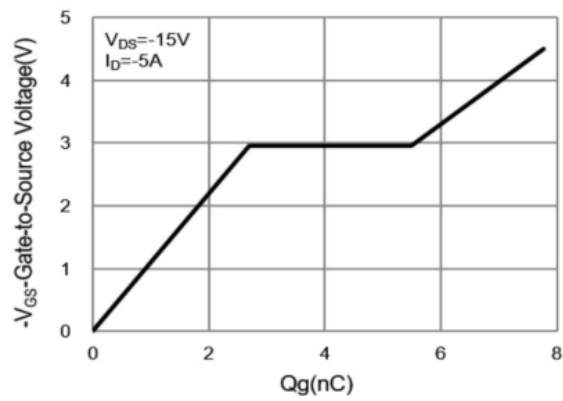


Fig.7 Gate-Charge Characteristics

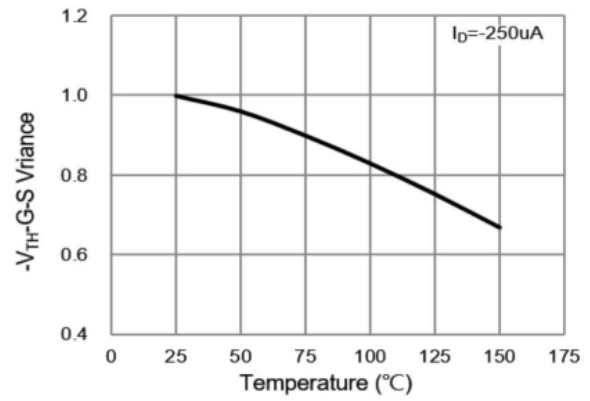


Fig.8 Threshold Voltage Variation with Temperature.

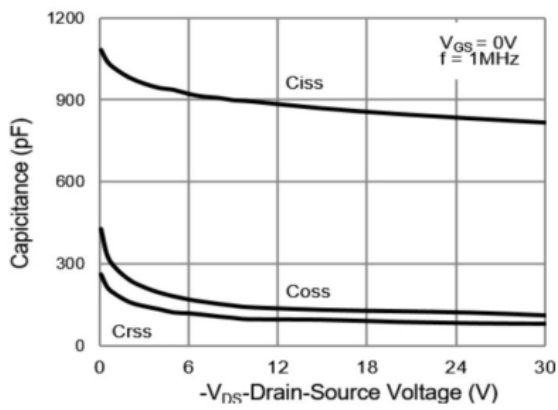
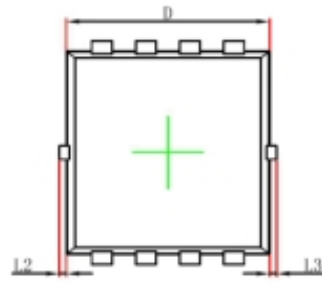
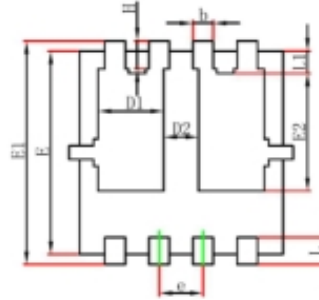


Fig.9 Capacitance vs. Drain-Source Voltage.

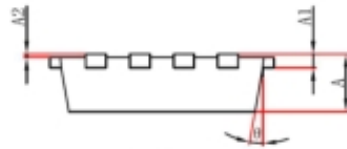
PDFNWB3.3×3.3-8L-B Package Information



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	0.935	1.135	0.037	0.045
D2	0.280	0.480	0.011	0.019
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°