

NB8311D

N-Channel Logic Level Enhancement Mode MOSFET

1. FEATURES

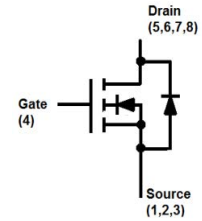
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.



DFN3333-8A

2. APPLICATION

- Power Routing
- DC/DC Conversion
- Motor Drives



3. ORDERING INFORMATION

Device	Marking	Shipping
NB8311D	N11	2000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25°C)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDSS	30	V
Gate-to-Source Voltage		VGS	±20	V
Avalanche Current(L = 0.1mH)		IAS	13	A
Avalanche energy(L = 0.1mH)		EAS	8.45	mJ
Continuous Drain Current	TC =25°C	ID	45	A
	TC =100°C		28	
	TA =25°C		11	
	TA =100°C		8.5	
Pulsed Drain Current (Note 1)		IDM	55	
Power Dissipation	TC =25°C	PD	25	W
	TC =100°C		15	
Operating Junction Temperature		TJ	-55 ~+150	°C
Storage Temperature Range		Tstg	-55 ~+150	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Junction-to-Ambient(Note 2)	RθJA	50	°C/W
Junction-to-Case	RθJC	5	°C/W

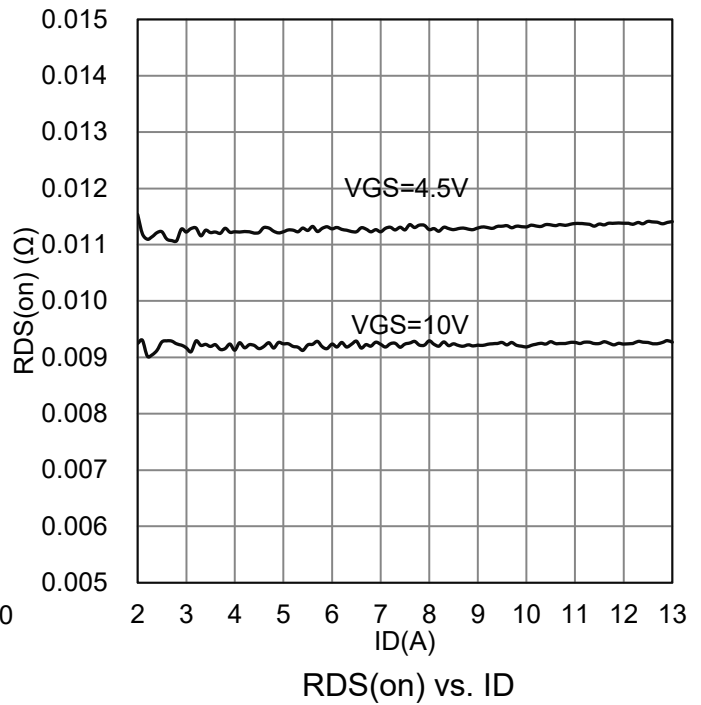
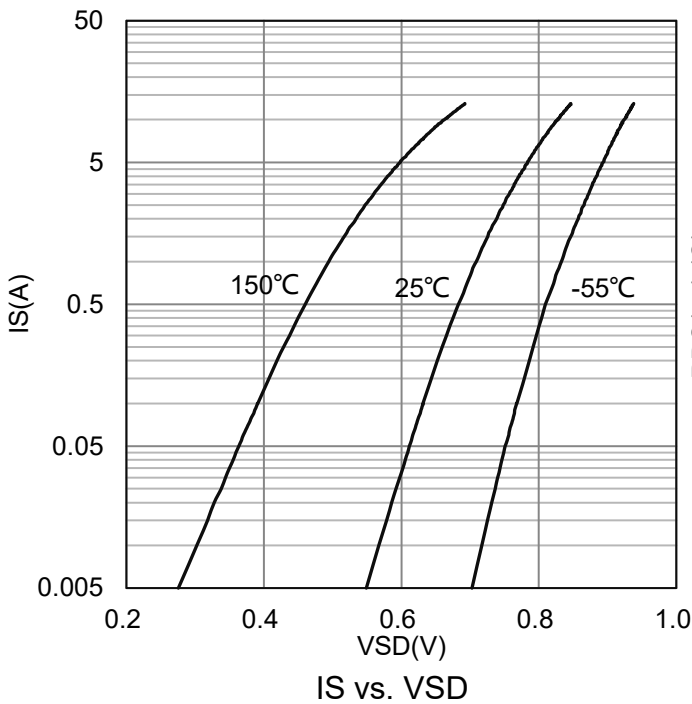
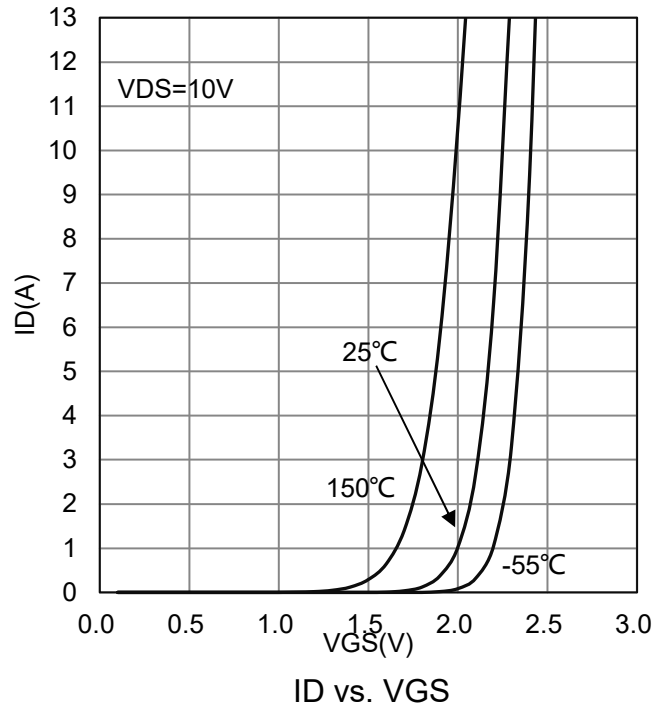
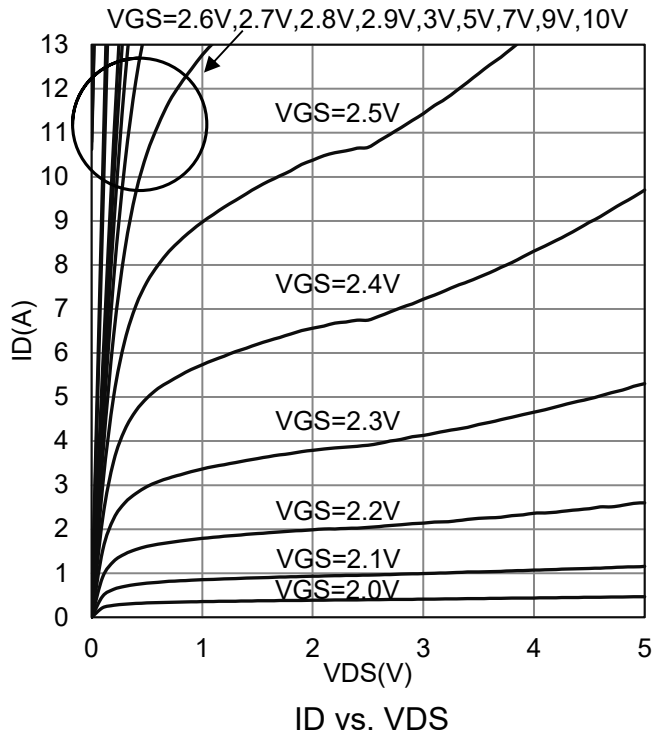
- 1.Pulse width limited by maximum junction temperature.
- 2.50° C / W when mounted on a 1 in2 pad of 2 oz copper.

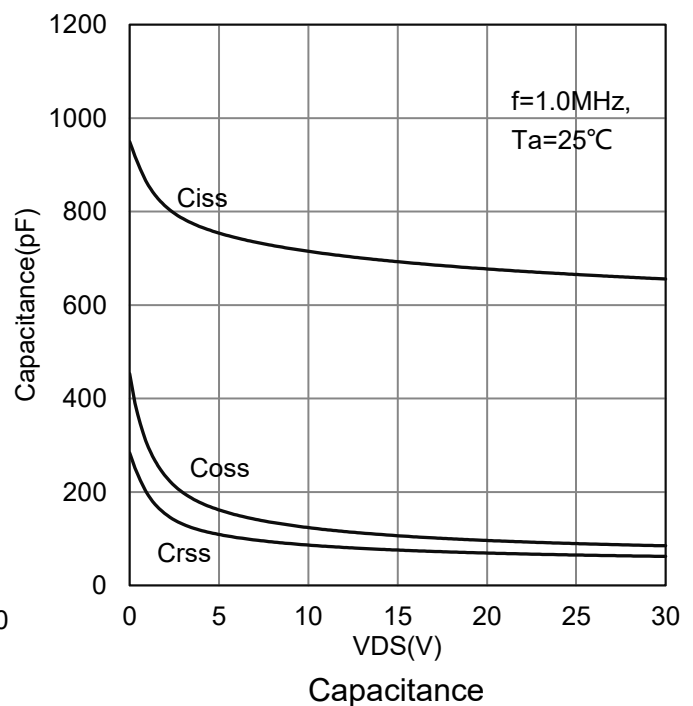
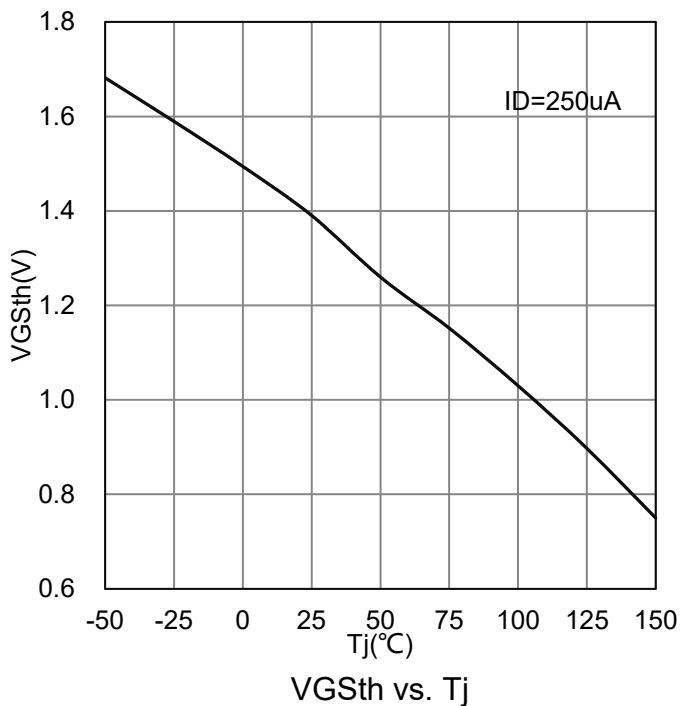
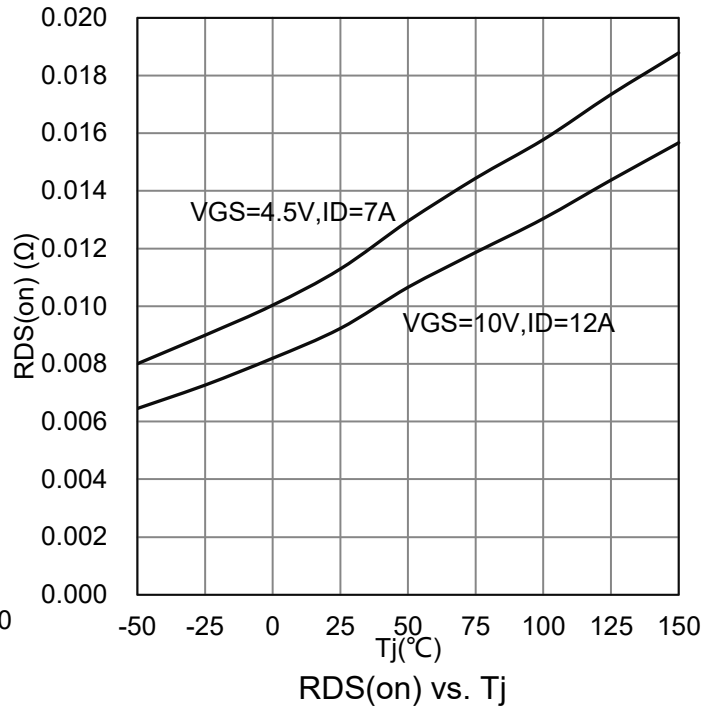
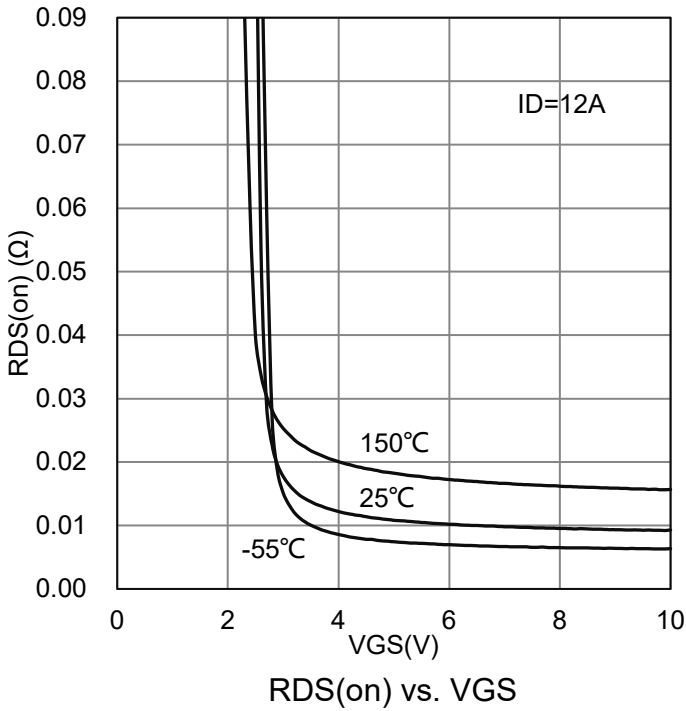


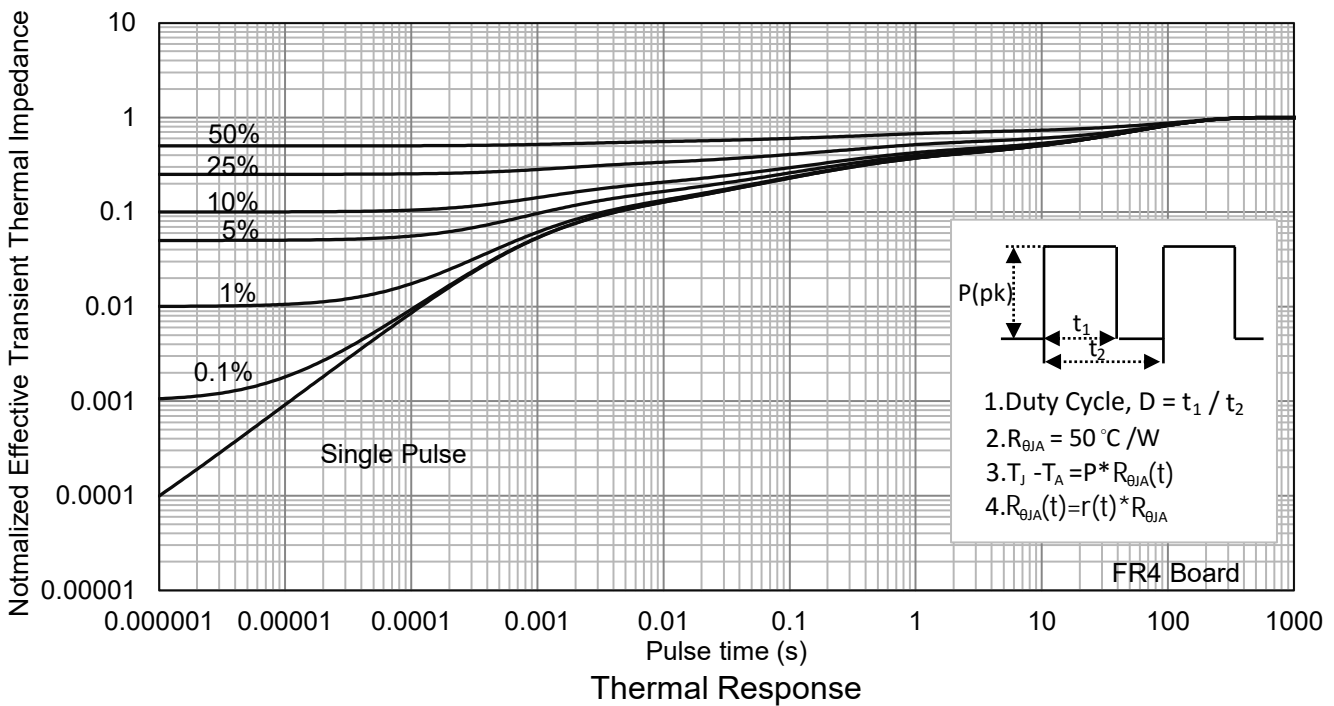
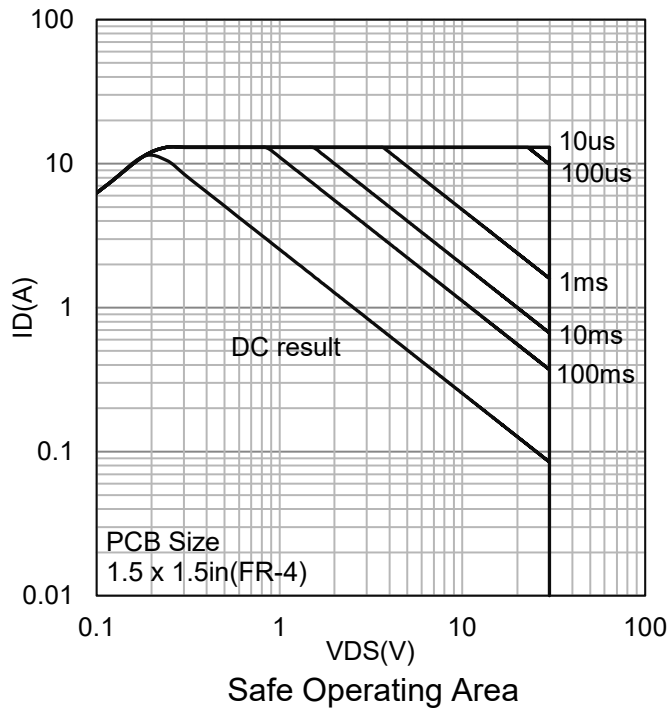
6. ELECTRICAL CHARACTERISTICS(Ta = 25°C)

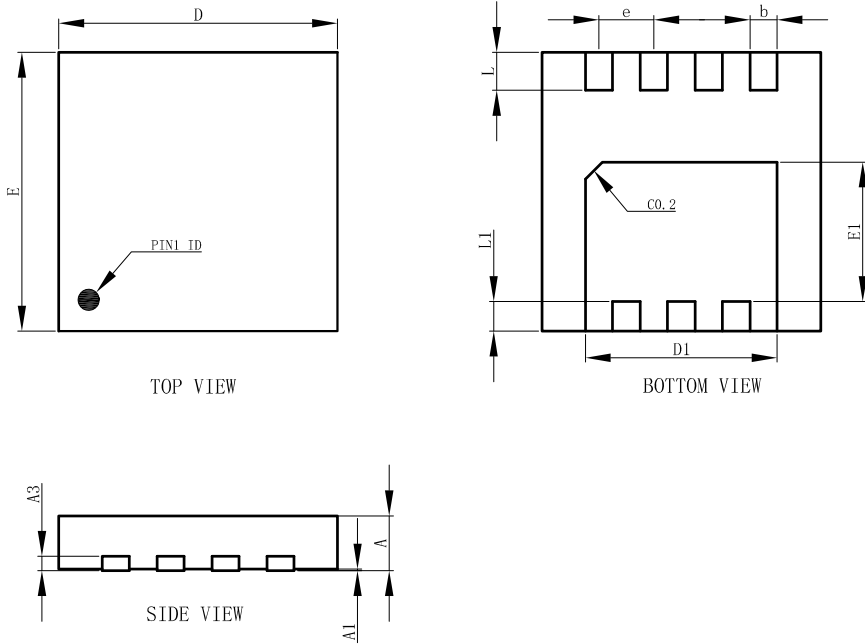
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
Static						
Drain-Source Breakdown Voltage (VGS = 0V, ID = 250 μ A)	V(BR)DSS	30	-	-	V	
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μ A)	VGS(th)	1	1.7	3	V	
Gate-Body Leakage (VDS = 0 V, VGS = \pm 20 V)	IGSS	-	-	\pm 100	nA	
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V) (VDS = 20 V, VGS = 0 V, TJ = 125°C)	IDSS	-	-	1 25	μ A	
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 12 A) (VGS = 4.5 V, ID = 7 A)	RDS(on)	-	10 13	12 16	m Ω	
Dynamic						
Total Gate Charge(VGS = 10V)	(VDS = 15 V, VGS = 10 V, ID = 12 A)	Qg	-	14.1	-	nC
Total Gate Charge(VGS = 4.5V)		Qg	-	7	-	
Gate-Source Charge		Qgs	-	1.4	-	
Gate-Drain Charge		Qgd	-	3.1	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	693	-	pF
Output Capacitance		Coss	-	107	-	
Reverse Transfer Capacitance		Crss	-	76	-	
Turn-On Delay Time	(VDS = 15 V, ID = 1A, VGS = 10 V, RGS = 2.7 Ω)	td(on)	-	6.4	-	ns
Rise Time		tr	-	10.1	-	
Turn-Off Delay Time		td(off)	-	25.2	-	
Fall Time		tf	-	8	-	
Diode Forward Voltage (IS = 12A, VGS = 0V)	VSD	-	-	1.2	V	

 3. Pulse test: PW \leq 300 μ s duty cycle \leq 2%.

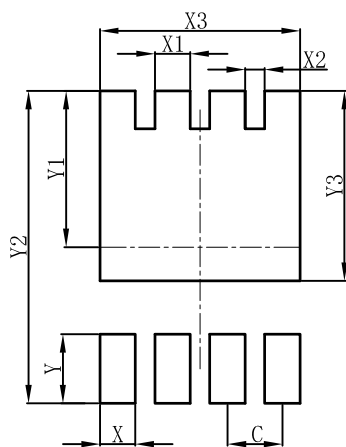

7. ELECTRICAL CHARACTERISTICS CURVES


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8.OUTLINE AND DIMENSIONS
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DIM	MIN	NOR	MAX
A	0.60	0.65	0.70
A1	0.00	0.03	0.05
b	0.27	0.32	0.37
D	3.25	3.30	3.35
E	3.25	3.30	3.35
D1	2.22	2.27	2.32
E1	1.60	1.65	1.70
e	0.65BSC		
L	0.40	0.45	0.50
L1	0.30	0.35	0.40
A3	0.152REF.		
All Dimensions in mm			

9.SOLDERING FOOTPRINT
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DFN3333-8A	
DIM	(mm)
C	0.65
X	0.42
X1	0.42
X2	0.23
X3	2.37
Y	0.70
Y1	1.85
Y2	3.70
Y3	2.25

