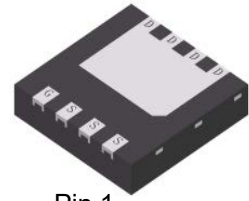


NB84046D

40V N-Channel Power MOSFET



Pin 1
DFN3333-8A

1. FEATURES

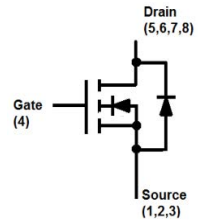
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.

2. APPLICATION

- Motor Drives

3. ORDERING INFORMATION

Device	Marking	Shipping
NB84046D	6NB	2000/Tape&Reel



4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit	
Drain-to-Source Voltage	VDS	40	V	
Gate-to-Source Voltage	VGS	±20	V	
Continuous Drain Current(Note 1)	ID	TA=25°C	19	A
		TA=75°C	16.5	A
Pulsed Drain Current(Note 2)	IDM	76	A	
Avalanche Current	IAS	38	A	
Avalanche energy(L=0.1mH)	EAS	72.2	mJ	
Power Dissipation(Note 1)	PD	TA=25°C	2	W
		TA=75°C	1.5	W
Operating Junction and Storage Temperature Range	Tj/Tstg	-55~+150	°C	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Thermal Resistance,Junction-to-Ambient(Note 1)	RθJA	60	°C/W
Thermal Resistance,Junction-to-Case	RθJC	5	

1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.

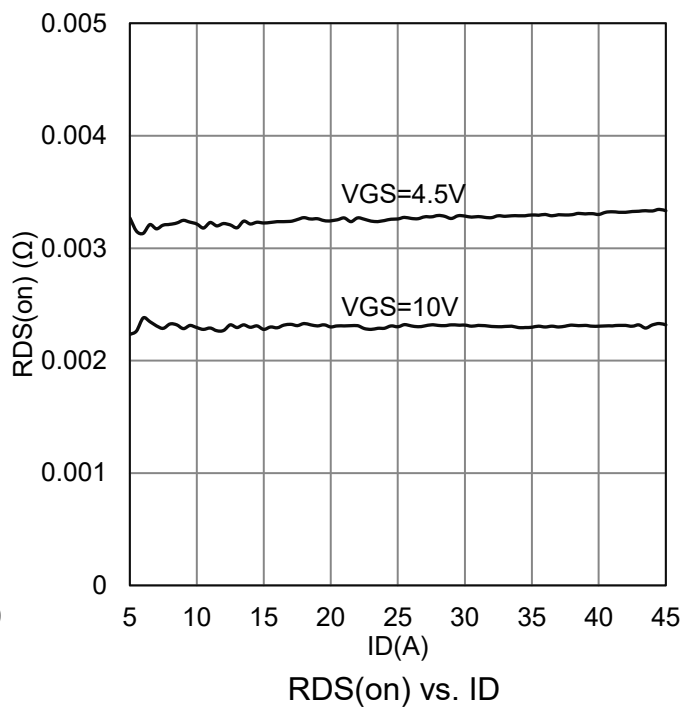
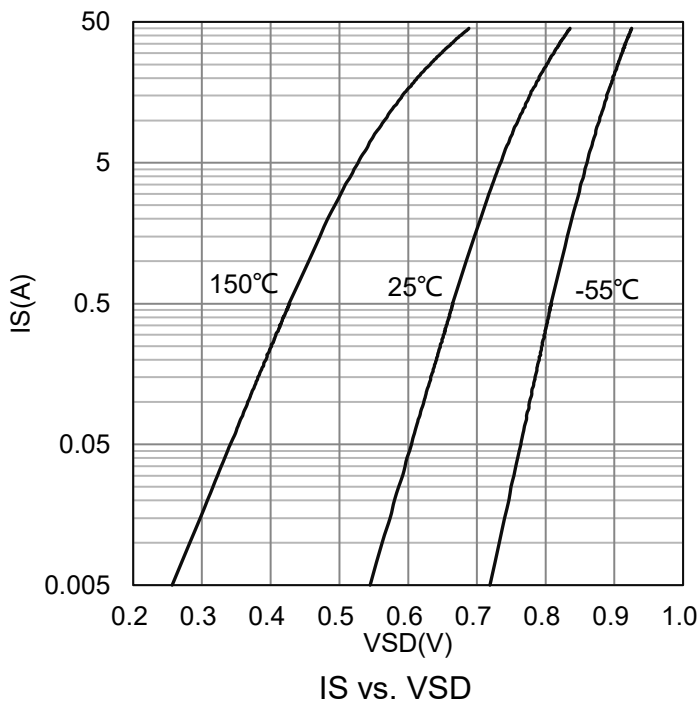
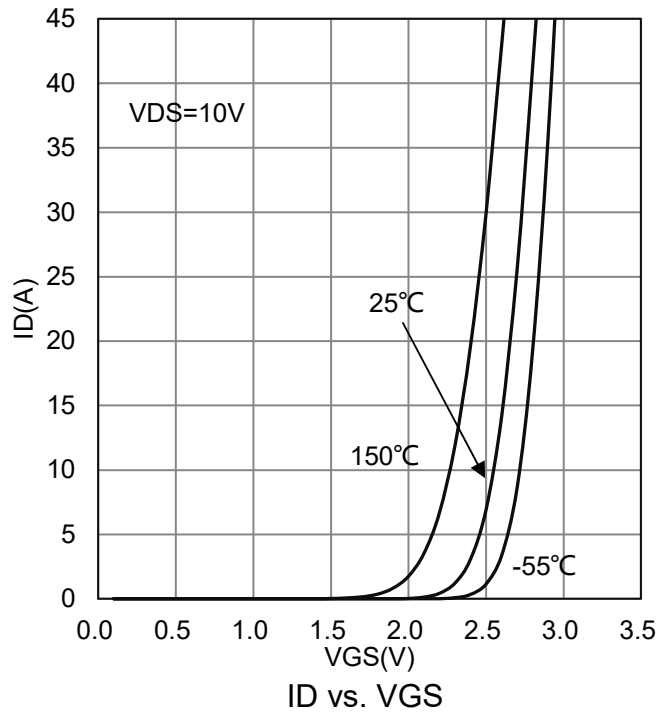
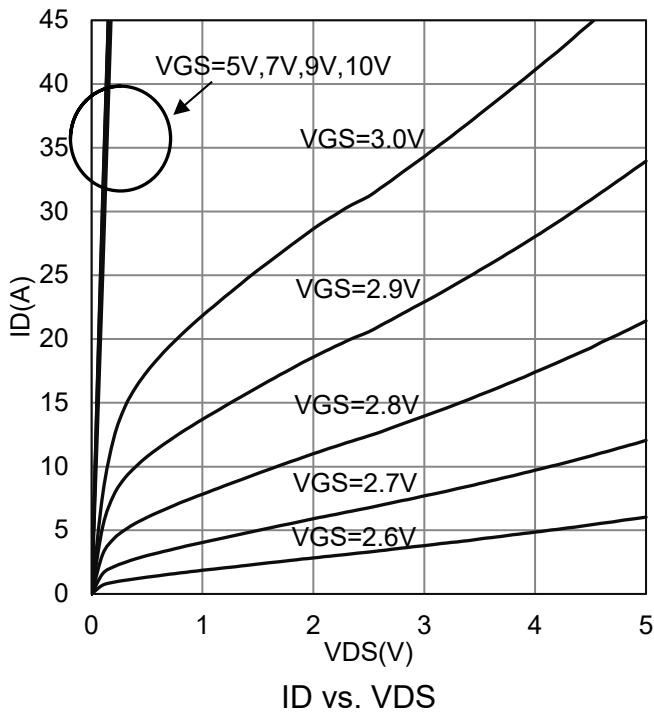
2.Pulse width limited by maximum junction temperature.

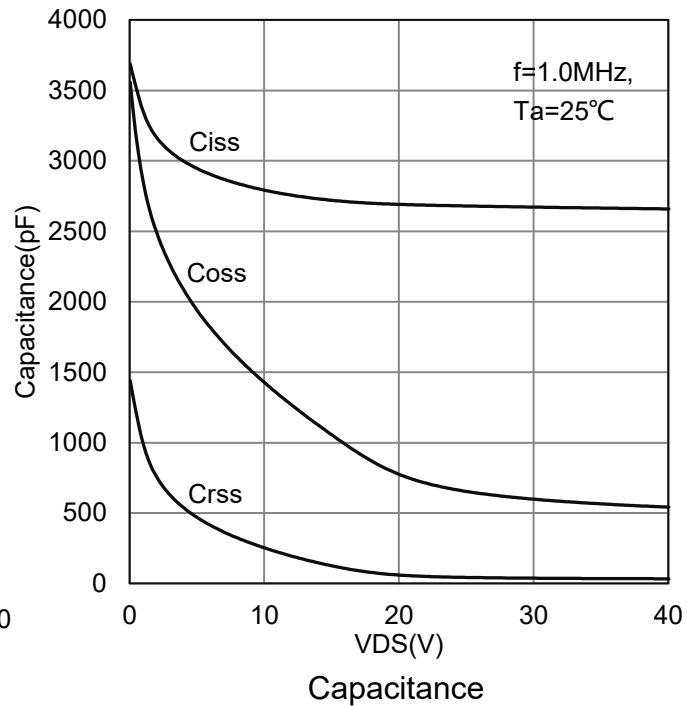
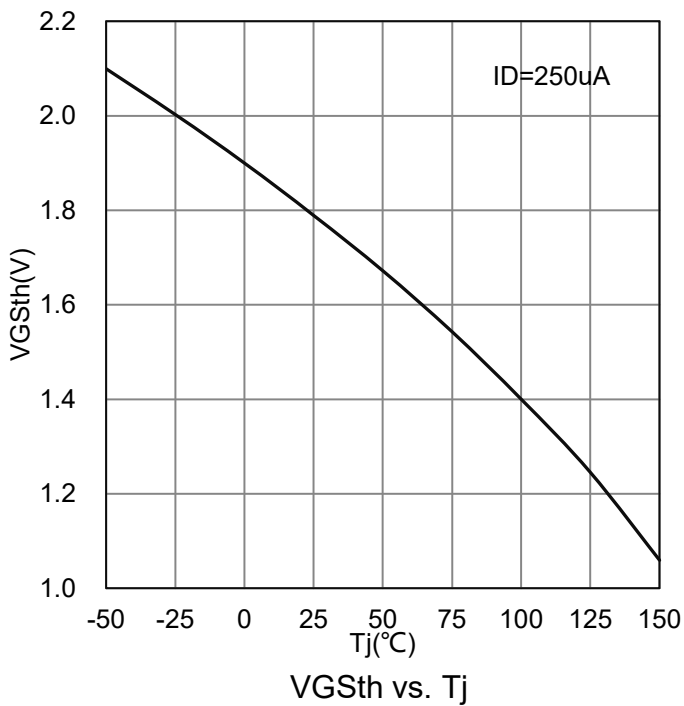
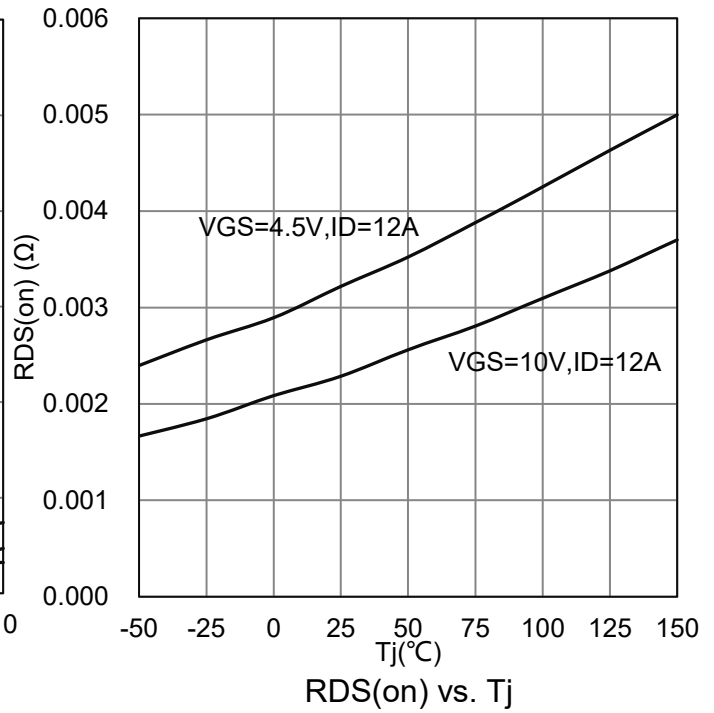
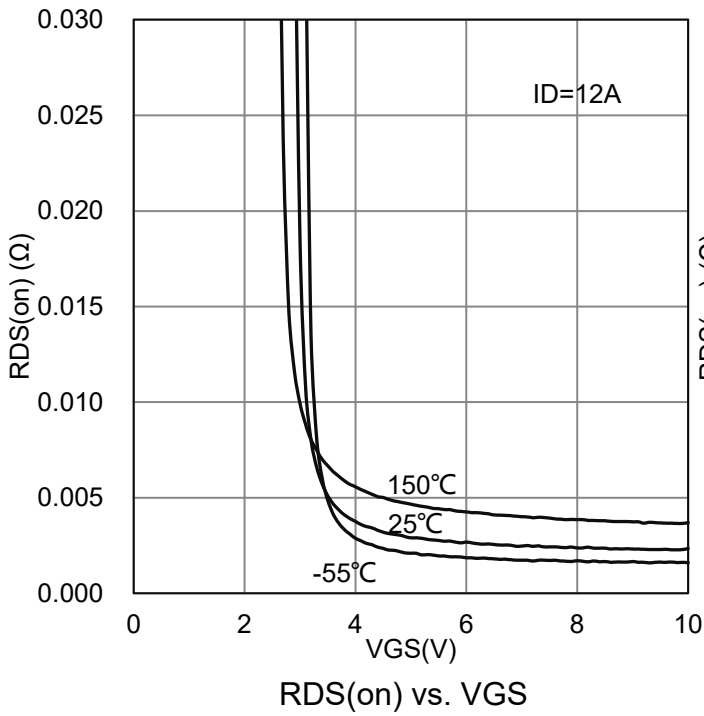


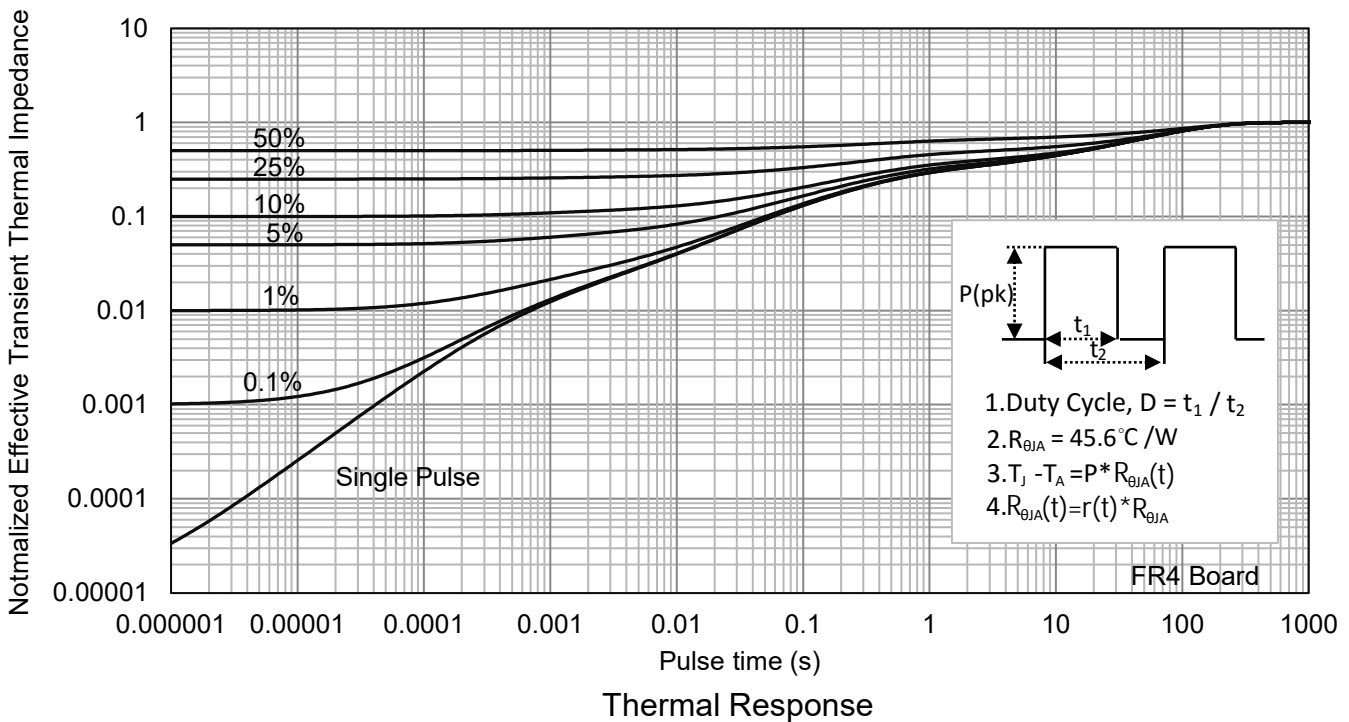
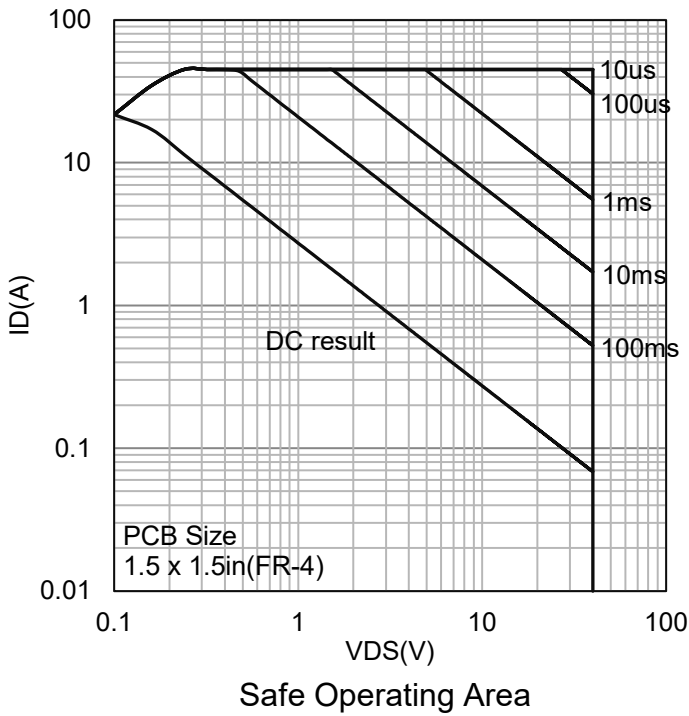
6. ELECTRICAL CHARACTERISTICS(Ta = 25°C)

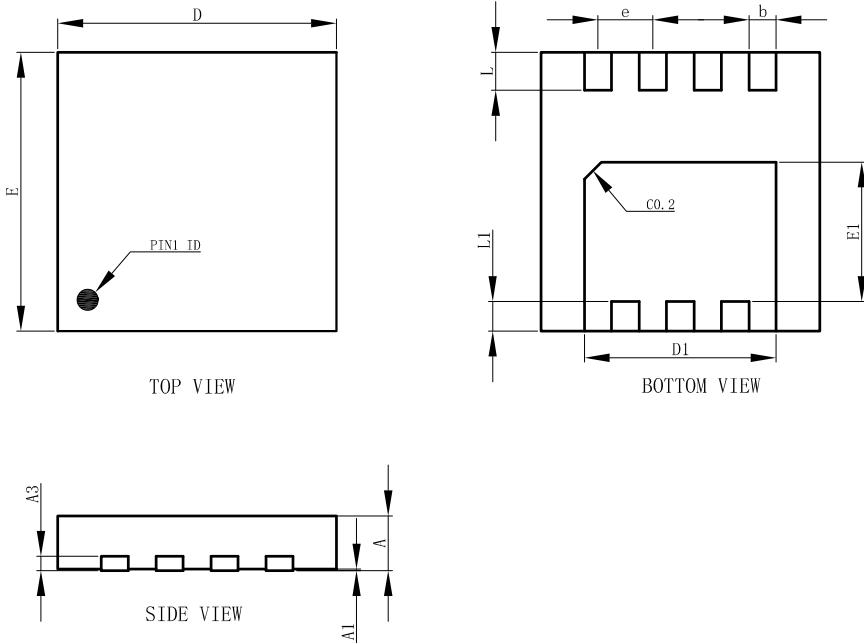
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain-Source Breakdown Voltage (VGS = 0V, ID = 250 μ A)	V(BR)DSS	40	-	-	V
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μ A)	VGS(th)	1.2	-	2.2	V
Gate-Body Leakage (VDS = 0 V, VGS = \pm 20 V)	IGSS	-	-	\pm 100	nA
Zero Gate Voltage Drain Current (VDS = 32 V, VGS = 0 V)	IDSS	-	-	1	μ A
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 12 A) (VGS = 4.5 V, ID = 12 A)	RDS(on)	- -	3.9 5.2	4.6 6.7	m Ω
Dynamic					
Total Gate Charge	(VGS = 4.5 V, VDS = 20 V, ID = 12 A)	Qg	-	26	nC
Gate-Source Charge		Qgs	-	7.6	
Gate-Drain Charge		Qgd	-	11	
Input Capacitance	(VDS = 20 V, VGS = 0 V, f = 1 MHz)	Ciss	-	2691	pF
Output Capacitance		Coss	-	774	
Reverse Transfer Capacitance		Crss	-	60	
Turn-On Delay Time	(VDS = 20 V, ID = 4A, VGS = 10 V, RGEN = 6 Ω)	td(on)	-	15.4	ns
Rise Time		tr	-	16.8	
Turn-Off Delay Time		td(off)	-	81.8	
Fall Time		tf	-	52.6	
Gate Resistance (VDS=0V, VGS=0V, f=1.0MHz)	Rg	-	880	-	Ω

 3. Pulse test; pulse width \leq 300 μ s, duty cycle \leq 2%

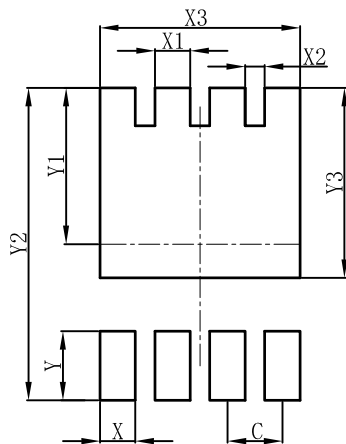

7. ELECTRICAL CHARACTERISTICS CURVES


7. ELECTRICAL CHARACTERISTICS CURVES(Con.)


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8. OUTLINE AND DIMENSIONS
DFN3333-8A


DFN3333-8A			
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
DFN3333-8A


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

