

NB8410D

N-Channel 40-V (D-S) MOSFET

1. FEATURES

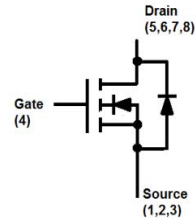
- Low RDS(on) trench technology.
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.



DFN3333-8A

2. APPLICATION

- White LED boost converters
- DC/DC Conversion Circuits
- Motor Drives



3. ORDERING INFORMATION

Device	Marking	Shipping
NB8410D	P18	2000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25°C unless otherwise stated)

Parameter	Symbol	Limits	Unit
Drain-to-Source Voltage	VDSS	40	V
Gate-to-Source Voltage	VGS	±20	V
Continuous Drain Current(Note 1)	ID	TA =25°C	17
		TA =70°C	12
Pulsed Drain Current (Note 2)	IDM	60	A
Continuous Source Current (Diode Conduction)(Note 1)	IS	5.5	A
Power Dissipation(Note 1)	PD	TA =25°C	3.5
		TA =70°C	2
Operating Junction Temperature	TJ	-55 ~+150	°C
Storage Temperature Range	Tstg	-55 ~+150	

- 1.Surface Mounted on 1" x 1" FR4 Board.
- 2.Pulse width limited by maximum junction temperature.

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 1)	RθJA	t ≤ 10s	35
		Steady State	81



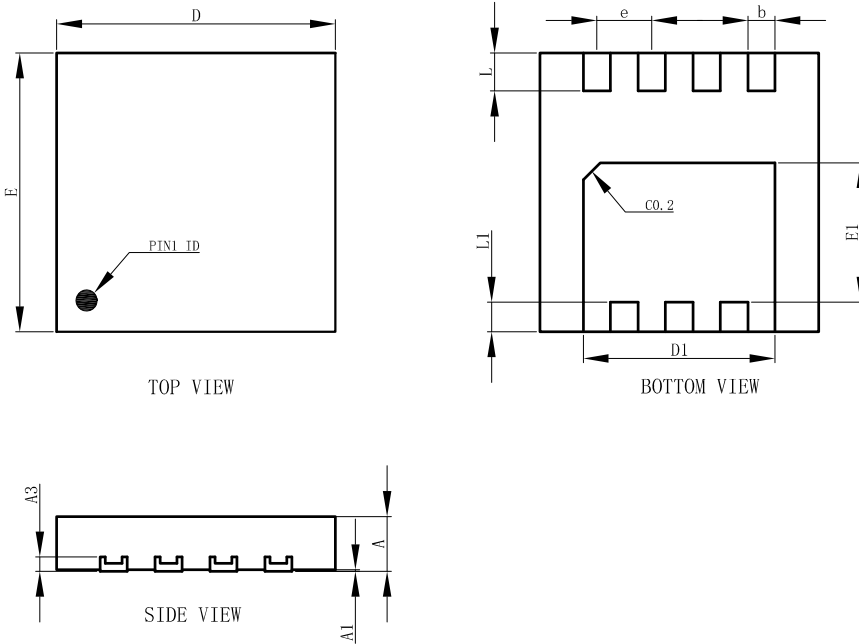
6. ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μ A)	VGS(th)	1	-	-	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) (VDS = 32 V, VGS = 0 V, TJ = 55°C)	IDSS	-	-	1 25	μ A
On-State Drain Current(Note 3) (VDS = 5 V, VGS = 10 V)	ID(on)	20.7	-	-	A
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 11 A) (VGS = 4.5 V, ID = 8.8 A)	RDS(on)	-	6.5 8.5	8.5 10.5	m Ω
Forward Transconductance(Note 3) (VDS = 15 V, ID = 11 A)	gfs	-	22	-	S
Diode Forward Voltage(Note 3) (IS = 2.3 A, VGS = 0 V)	VSD	-	0.74	-	V
Dynamic(Note 4)					
Total Gate Charge	(VDS = 20 V, VGS = 4.5 V, ID = 11 A)	Qg	-	45	nC
Gate-Source Charge		Qgs	-	19	
Gate-Drain Charge		Qgd	-	29	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 Mhz)	Ciss	-	4500	pF
Output Capacitance		Coss	-	472	
Reverse Transfer Capacitance		Crss	-	457	
Turn-On Delay Time	(VDS = 20 V, RL = 1.9 Ω , ID = 11 A, VGEN = 10 V, RGEN = 6 Ω)	td(on)	-	22	ns
Rise Time		tr	-	36	
Turn-Off Delay Time		td(off)	-	210	
Fall Time		tf	-	86	

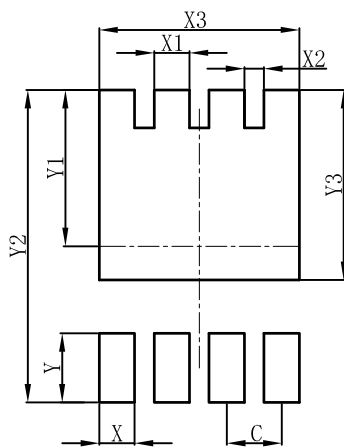
3. Pulse test: PW \leq 300 μ s duty cycle \leq 2%.

4. Guaranteed by design, not subject to production testing.



7. OUTLINE AND DIMENSIONS


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			

8. SOLDERING FOOTPRINT


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

