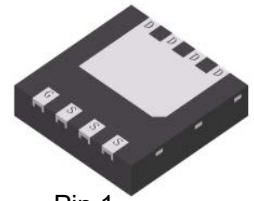


NB8305D

30V N-Channel Power MOSFET



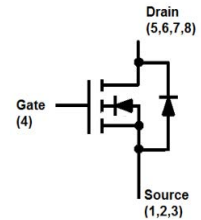
Pin 1
DFN3333-8A

1. FEATURES

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

2. APPLICATIONS

- Power Routing
- DC/DC Conversion
- Motor Drives



3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
NB8305D	N05	2000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit	
Drain-to-Source Voltage	VDS	30	V	
Gate-to-Source Voltage	VGS	±20	V	
Continuous Drain Current	ID	TC =25°C	60	A
		TC =100°C	46	
		TA =25°C	21	
		TA =100°C	16	
Pulsed Drain Current(Note 2)	IDM	84	A	
Avalanche Current	IAS	25	A	
Avalanche energy(L=0.1mH)	EAS	31.25	mJ	
Power Dissipation (Note 1)	PD	TC =25°C	20	W
		TA =25°C	2.5	
Operating Junction and Storage Temperature Range	TJ , TSTG	-55~+150	°C	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 1)	RθJA	50	°C/W
Maximum Junction-to-Ambient(Note 3)	RθJA	167	
Maximum Junction-to-Case	RθJC	6	

- 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.
- 3.Surface mounted on FR4 board using the minimum recommended pad size.

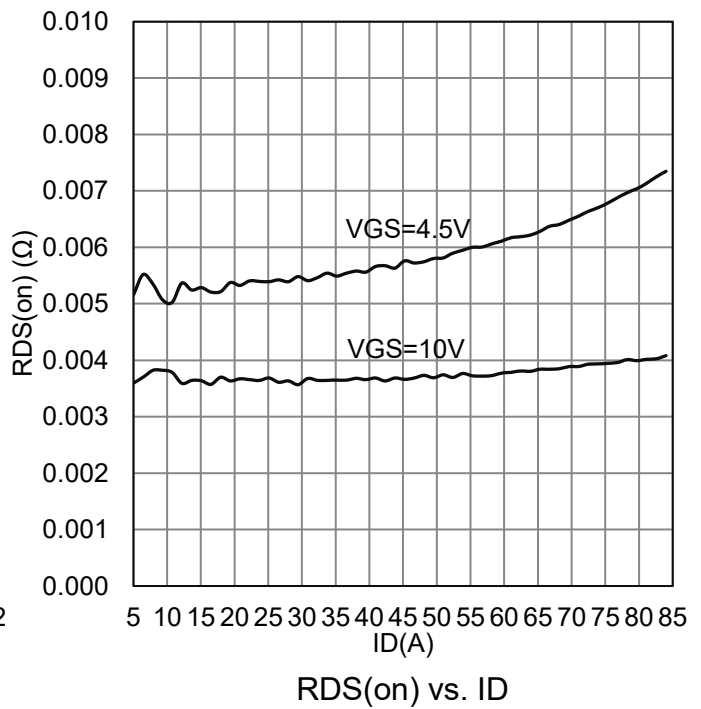
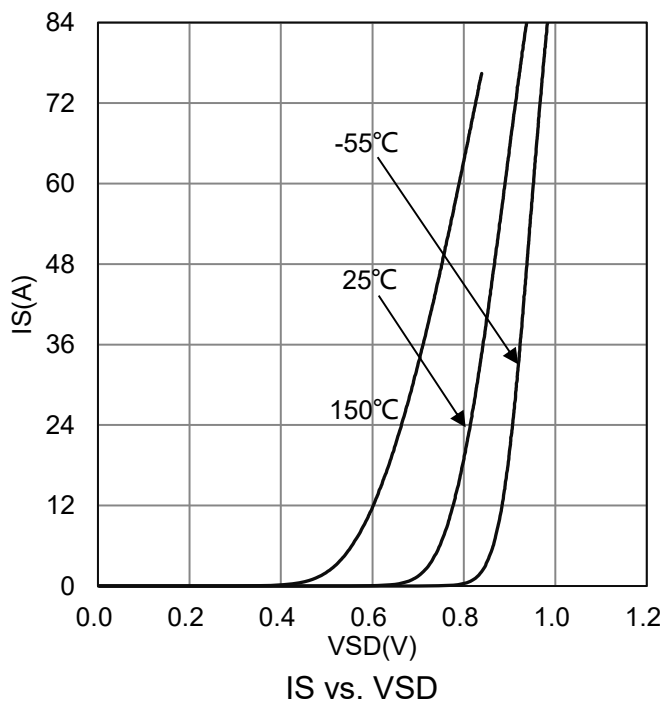
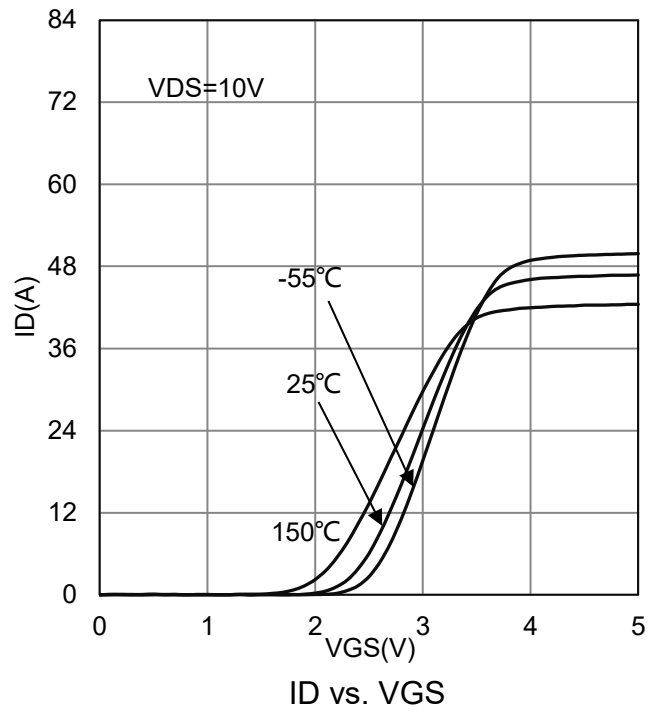
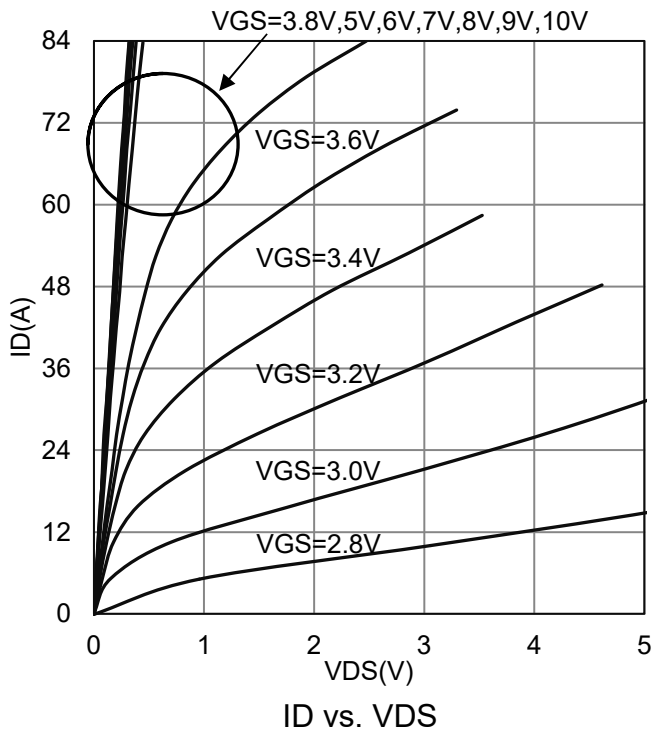


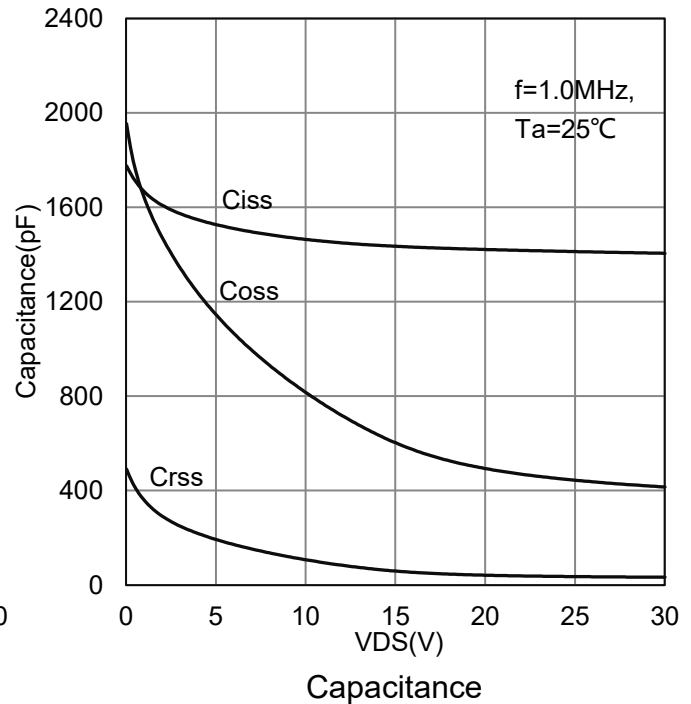
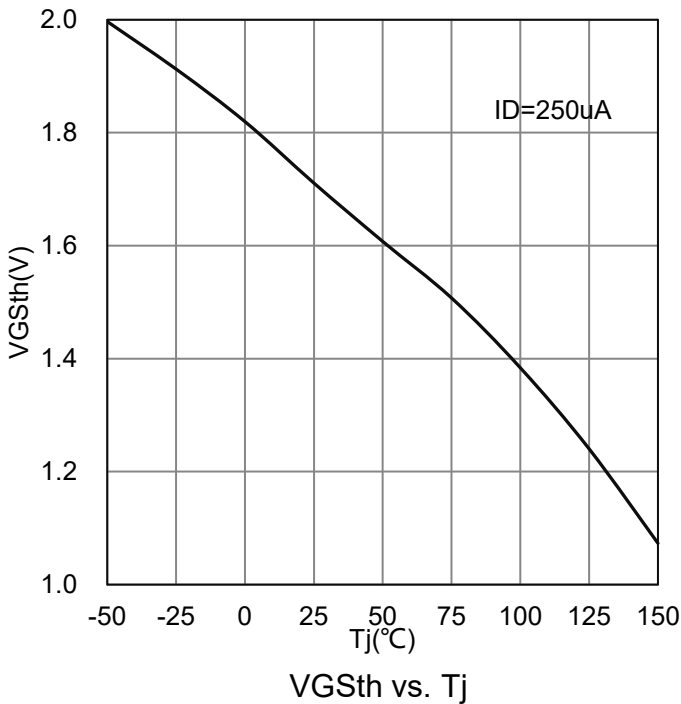
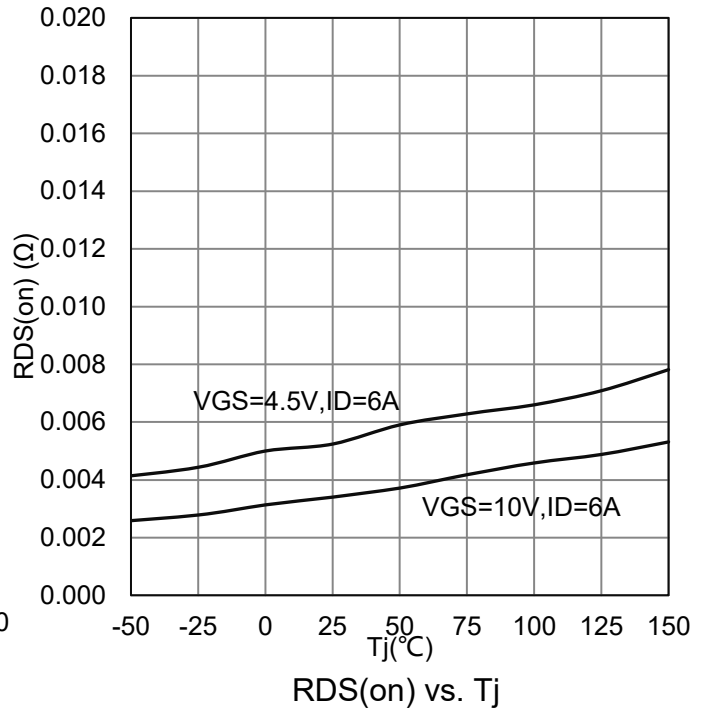
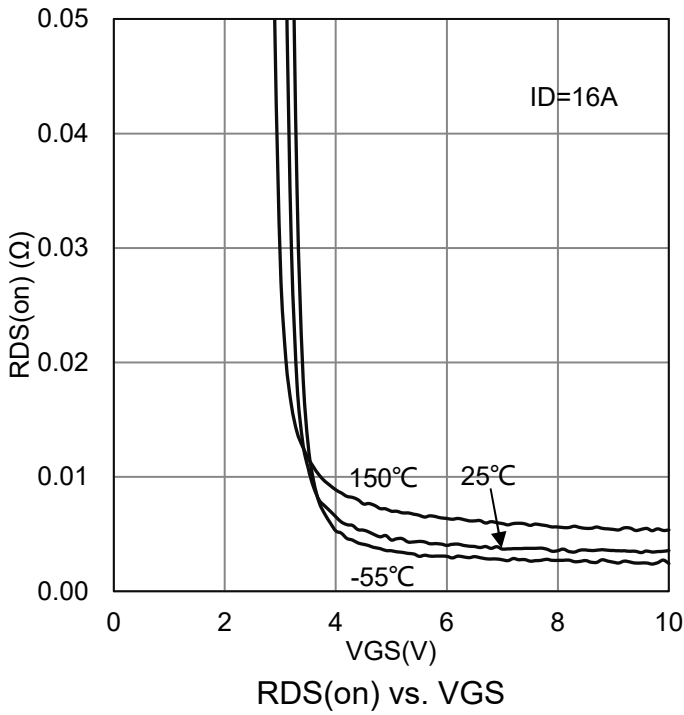
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

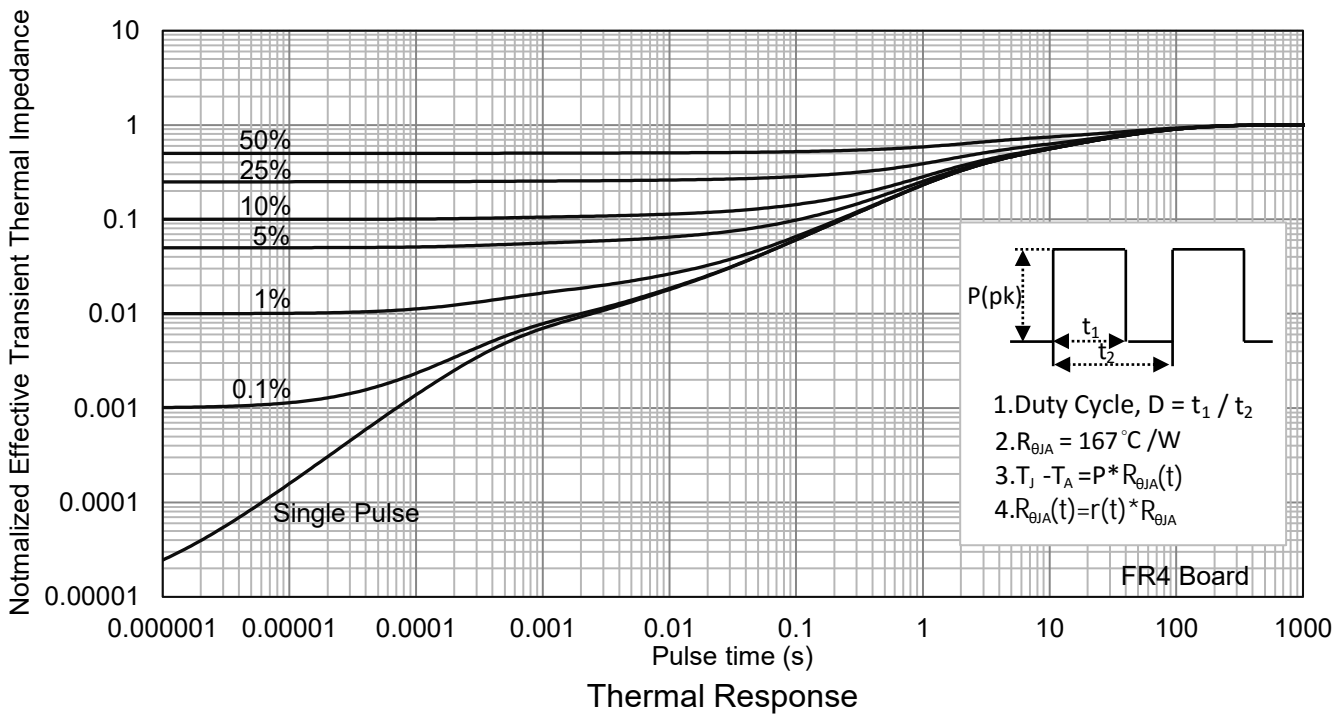
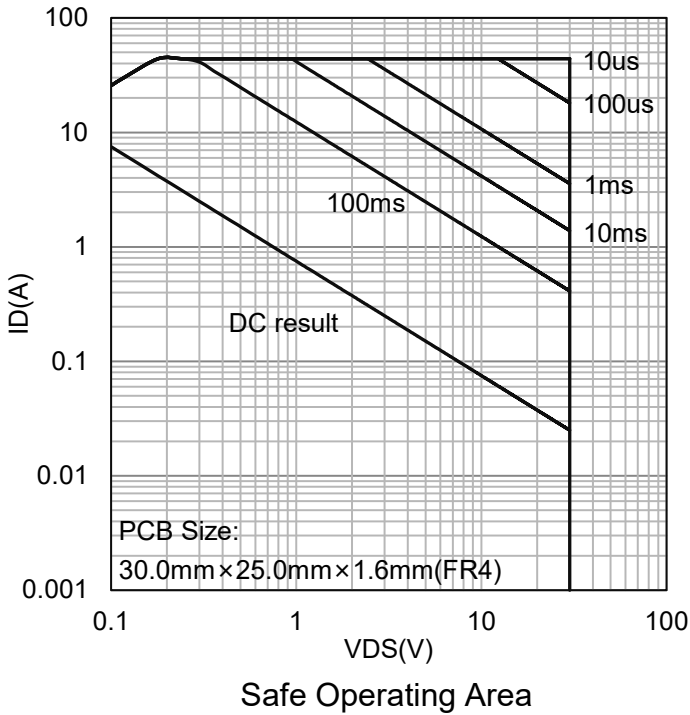
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain-Source Breakdown Voltage (VGS = 0V, ID = 250 μ A)	V(BR)DSS	30	-	-	V
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μ A)	VGS(th)	1	1.5	2	V
Gate-Body Leakage (VDS = 0 V, VGS = \pm 20V)	IGSS	-	-	\pm 100	nA
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V)	IDSS	-	-	1	μ A
Drain-Source On-Resistance(Note 4) (VGS = 10 V, ID = 16 A) (VGS = 4.5 V, ID = 16 A)	RDS(on)	- -	3.5 5.2	3.9 6	m Ω
Dynamic					
Total Gate Charge(VGS=10V)	(VDS = 15 V, VGS = 10 V, ID = 2 A)	Qg	-	22	nC
Total Gate Charge(VGS=4.5V)		Qg	-	11	
Gate-Source Charge		Qgs	-	3	
Gate-Drain Charge		Qgd	-	5	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	1435	pF
Output Capacitance		Coss	-	603	
Reverse Transfer Capacitance		Crss	-	60	
Diode Forward Voltage (IS = 1 A, VGS = 0V)	VSD	-	0.7	1.3	V

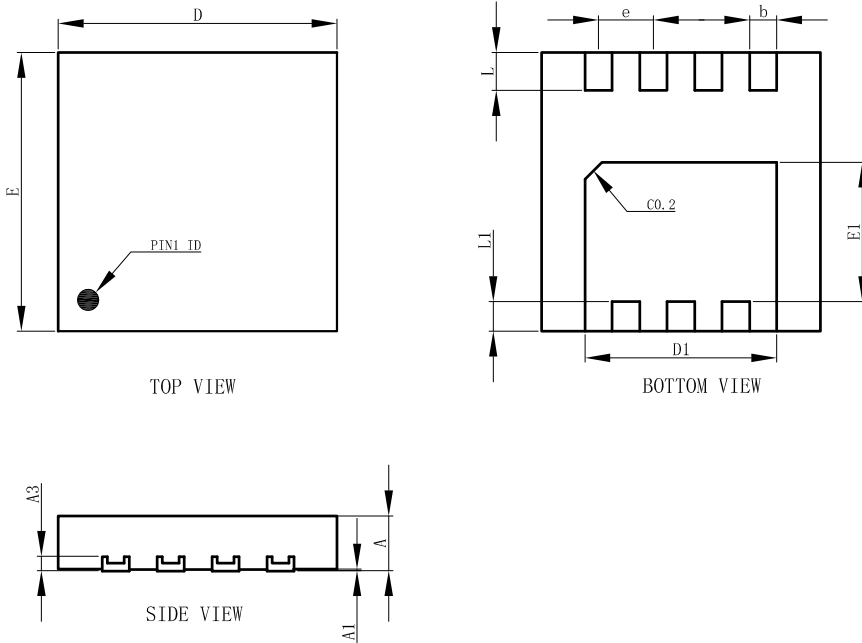
4.Pulse test: PW \leq 300 μ s duty cycle \leq 2%.



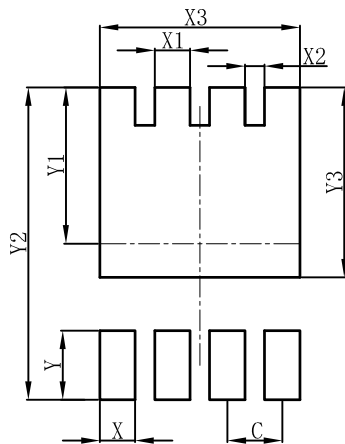
7. ELECTRICAL CHARACTERISTICS CURVES


7. ELECTRICAL CHARACTERISTICS CURVES(Con.)


7. ELECTRICAL CHARACTERISTICS CURVES(Con.)


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

