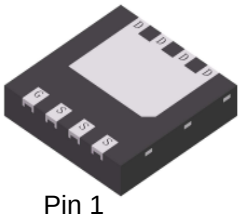
LNB8206DT0AG

N-Channel 20-V (D-S) MOSFET



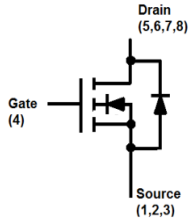
Pin 1
DFN3333-8A

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
LNB8206DT0AG	N20	2000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain−to−Source Voltage		VDSS	20	V
Gate−to−Source Voltage		VGS	±20	V
Continuous Drain Current	TC =25°C	ID	50	A
	TC =70°C		35	
	TA =25°C		25	
	TA =70°C		19	
Pulsed Drain Current(Note 2)		IDM	80	A
Continuous Source Current (Diode Conduction)		IS	5	A
Avalanche Current(L=0.1mH)		IAS	39	A
Avalanche energy(L=0.1mH)		EAS	77	mJ
Power Dissipation (Note 1)	TA =25°C	PD	3	W
	TA =70°C		1.9	
Operating Junction and Storage Temperature Range		TJ , TSTG	-55~+150	℃

5. THERMAL CHARACTERISTICS

Parameter		Symbol	Limits	Unit
Thermal Resistance,Junction–to–Ambient(Note 1)	t ≤10 s	RΘJA	40	℃/W
	Steady State		90	℃/W

1.Surface Mounted on 1” x 1” FR4 Board.

2.Pulse width limited by maximum junction temperature

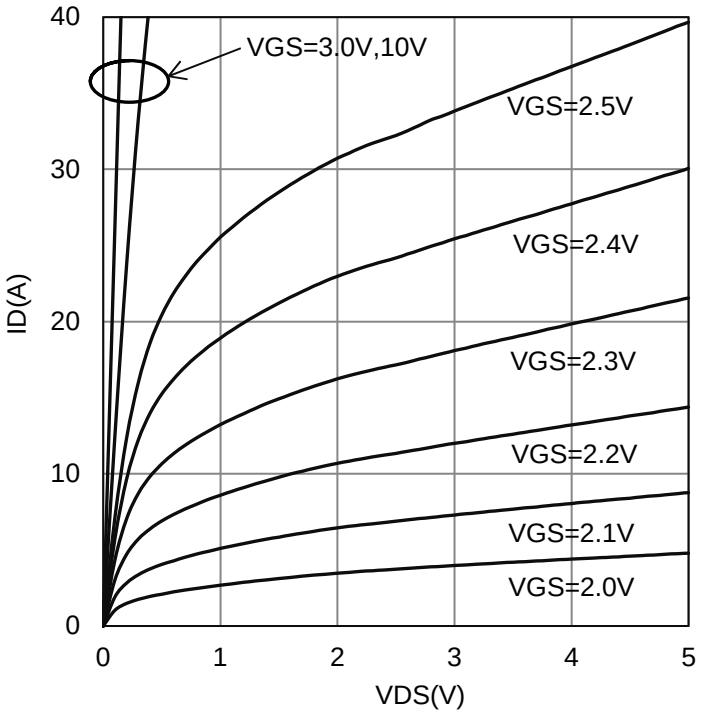
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic		Symbol	Min.	Typ.	Max.	Unit
STATIC						
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)		VBRDSS	20	-	-	V
Gate-Source Threshold Voltage (VDS =VGS , ID =250μA)		VGS(th)	1	-	-	V
Gate-Body Leakage Current (VDS =0V, VGS =±20V)		IGSS	-	-	±1	μA
Zero Gate Voltage Drain Current (VDS = 16 V, VGS = 0 V)		IDSS	-	-	1	μA
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 12 A) (VGS = 4.5 V, ID = 10 A)		RDS(ON)	- -	- -	5.7 7.4	mΩ
Diode Forward Voltage(Note 3) (IS = 2.5 A, VGS = 0 V)		VSD	-	0.72	1.2	V
DYNAMIC						
Total Gate Charge	(VDS = 10 V, VGS = 4.5 V,ID = 12 A)	Qg	-	40	-	nC
Gate-Source Charge		Qgs	-	10.5	-	
Gate-Drain Charge		Qgd	-	13.6	-	
Turn-On Delay Time	(VDS = 10 V, RL = 0.5 Ω,ID = 12 A,VGEN = 10 V, RGEN = 6 Ω)	td(on)	-	12	-	ns
Rise Time		tr	-	13	-	
Turn-Off Delay Time		td(off)	-	67	-	
Fall Time		tf	-	22	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	3768	-	pF
Output Capacitance		Coss	-	628	-	
Reverse Transfer Capacitance		Crss	-	567	-	
Gate Resistance (VDS=0V ,VGS=0V, f=1.0MHz)		Rg	-	0.84	-	Ω

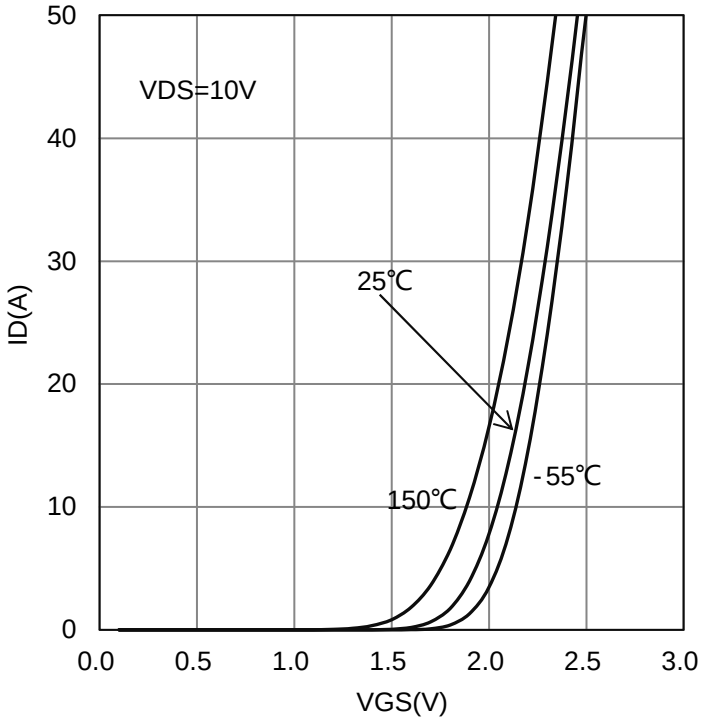
3.Pulse test; pulse width≤300μs, duty cycle≤ 2%

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

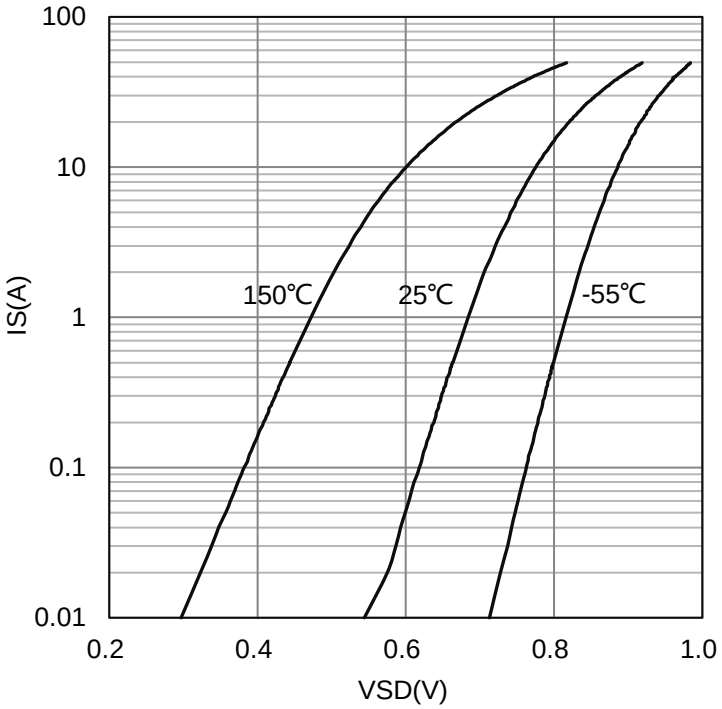
7.ELECTRICAL CHARACTERISTICS CURVES



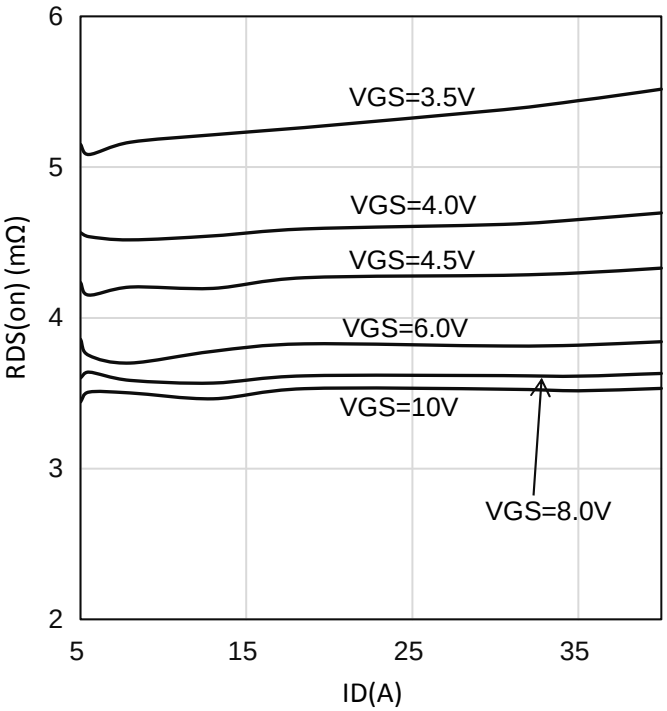
ID vs. VDS



ID vs. VGS

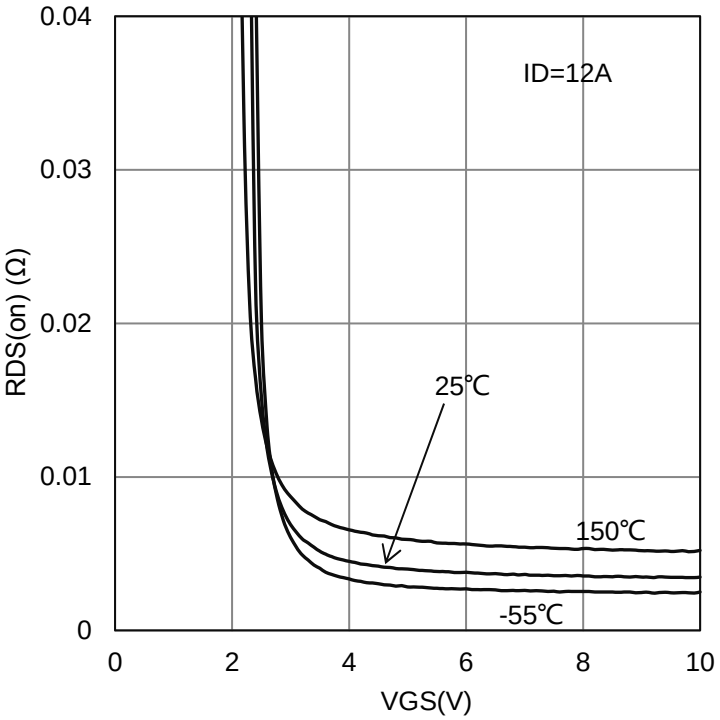


IS vs. VSD

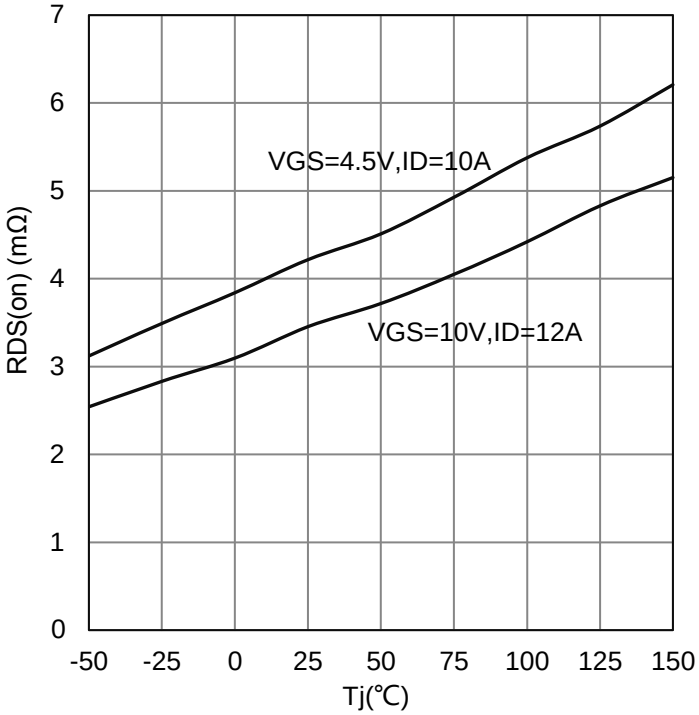


RDS(on) vs. ID

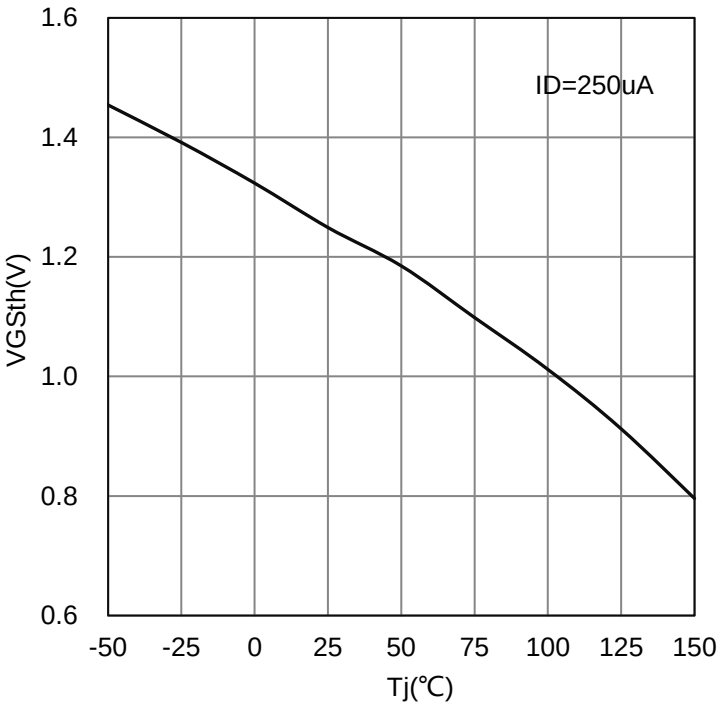
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



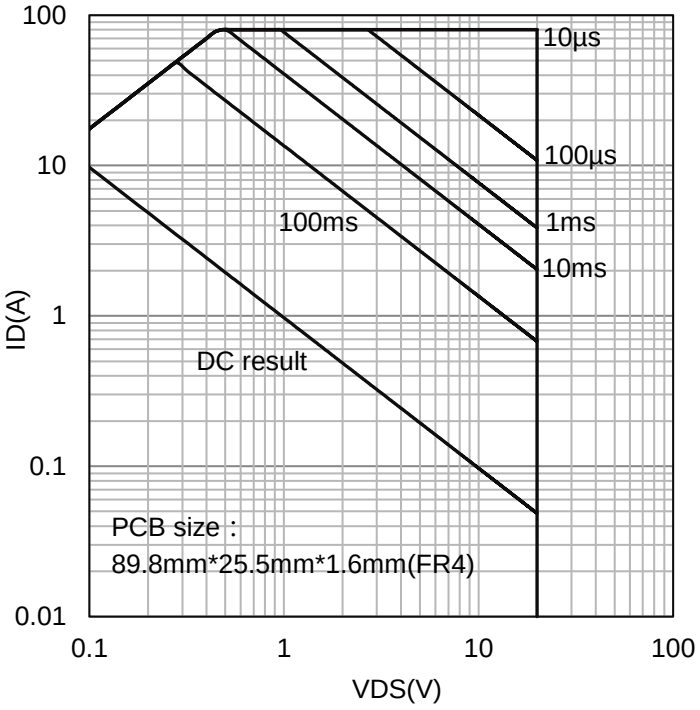
RDS(on) vs. VGS



RDS(on) vs. Tj

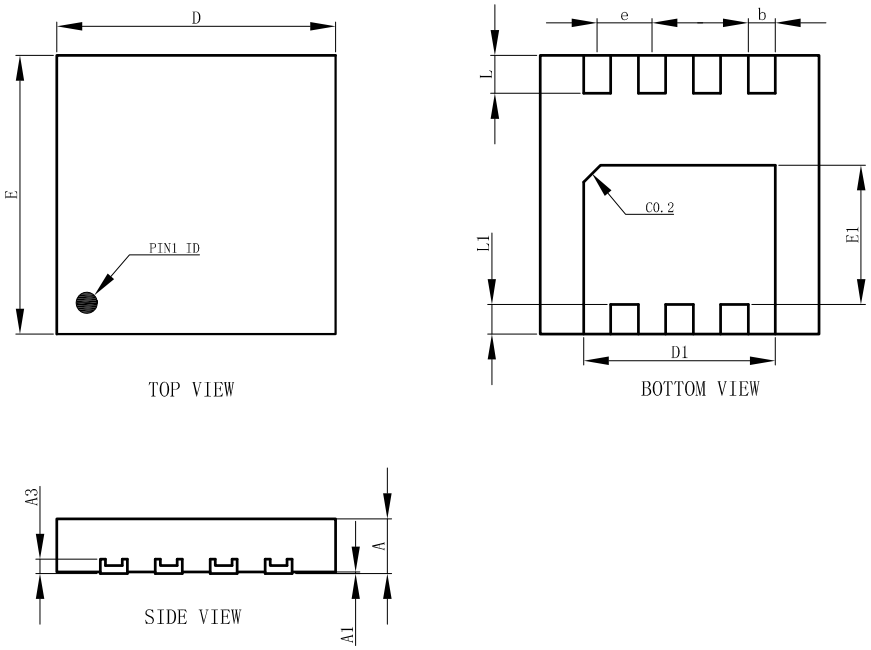


VGSth vs. Tj



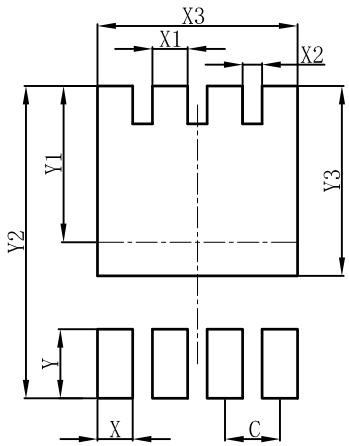
Safe Operating Area

8.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			

9.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