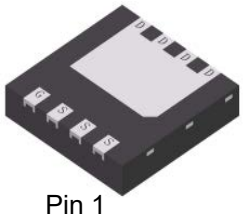
NB8308HSD

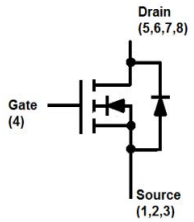
30V N Channel Logic Level Enhancement Mode MOSFET



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.

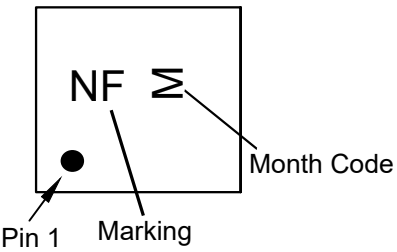


2. APPLICATIONS

- Power Routing
- DC/DC Conversion
- Motor Drives

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
NB8308HSD	NF	2000/Tape&Reel



4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	30	V
Gate–to–Source Voltage – Continuous	VGS	±20	V
Drain Current – Continuous TC =25℃ – Continuous TC =100℃	ID	 50 22	A
Pulsed Drain Current(Note 1)	IDM	140	
Avalanched Current	IAS	18.6	A
Avalanche Energy	EAS	17.3	mJ
Power Dissipation TC =25℃ TC =100℃	PD	 50 20	 W W
Operating Junction and Storage Temperature Range	Tj/Tstg	-50 to 150	℃

1. Pulse width limited by maximum junction temperature.

5. THERMAL CHARACTERISTICS

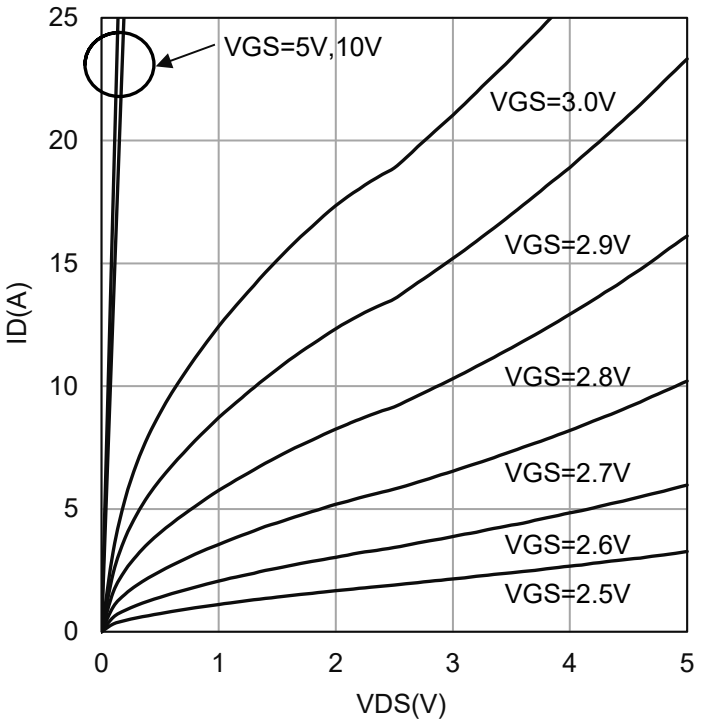
Parameter		Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 1)	t≤10s	RθJA	35	℃/W
	Steady State		81	
Maximum Junction-to-Case		RθJC	6.5	℃/W

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

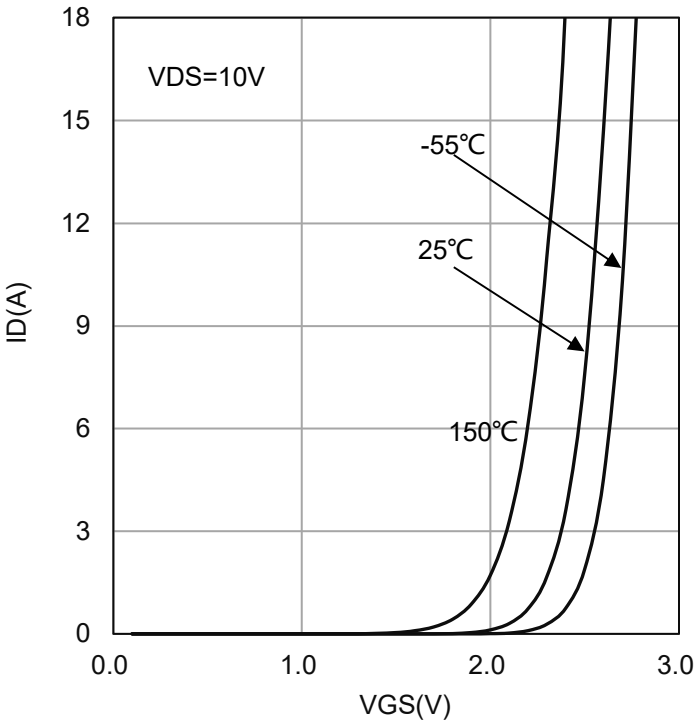
Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)		V(BR)DSS	30	-	-	V
Drain-Source Leakage Current (VDS = 24V, VGS = 0V) (VDS = 20V, VGS = 0V, TJ = 125 °C)		IDSS	- -	- -	1 25	μA
Gate–Body Leakage Current (VGS =±20V , VDS =0V)		IGSS	-	-	±100	nA
Gate Threshold Voltage (VDS = VGS, ID = 250μA)		VGS(th)	1.0	1.7	3.0	V
Static Drain–Source On–State Resistance (VGS =10V, ID =25A) (VGS =4.5V, ID =20A)		RDS(on)	- -	5.9 8.9	7 10.6	mΩ
Dynamic						
Input Capacitance (VGS = 0 V, f = 1.0MHz,VDS= 15 V)		Ciss	-	665	-	pF
Output Capacitance (VGS = 0 V, f = 1.0MHz,VDS= 15 V)		Coss	-	449	-	
Reverse Transfer Capacitance (VGS = 0 V, f = 1.0MHz,VDS= 15 V)		Crss	-	11	-	
Total Gate Charge(VGS=10V)	(VDS = 15V, VGS = 10V,ID = 25A)	Qg	-	9.7	-	nC
Total Gate Charge(VGS=4.5V)		Qg	-	4.7	-	
Gate-Source Charge		Qgs	-	1.5	-	
Gate-Drain Charge		Qgd	-	2.3	-	
Turn-On Delay Time	(VDS = 15V,ID = 20A, VGS = 10V, RGS = 2.7Ω)	td(on)	-	10	-	ns
Rise Time		tr	-	10	-	
Turn-Off Delay Time		td(off)	-	20	-	
Fall Time		tf	-	15	-	
Gate Resistance (VGS = 15mV, VDS = 0V, f = 1MHz)		Rg	-	0.55	1	Ω
Forward Voltage (IF = 25A, VGS = 0V)		VSD	-	-	1.3	V

2.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

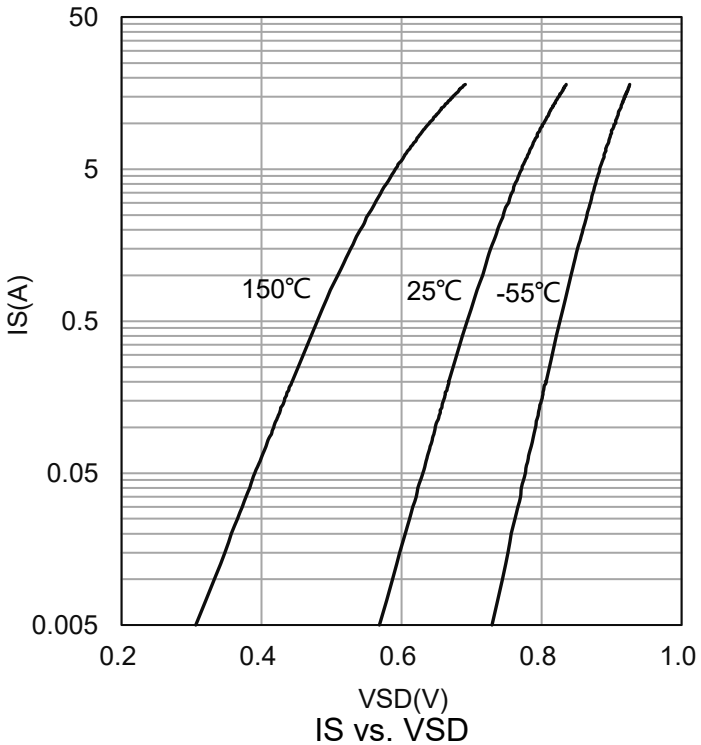
7. ELECTRICAL CHARACTERISTICS CURVES



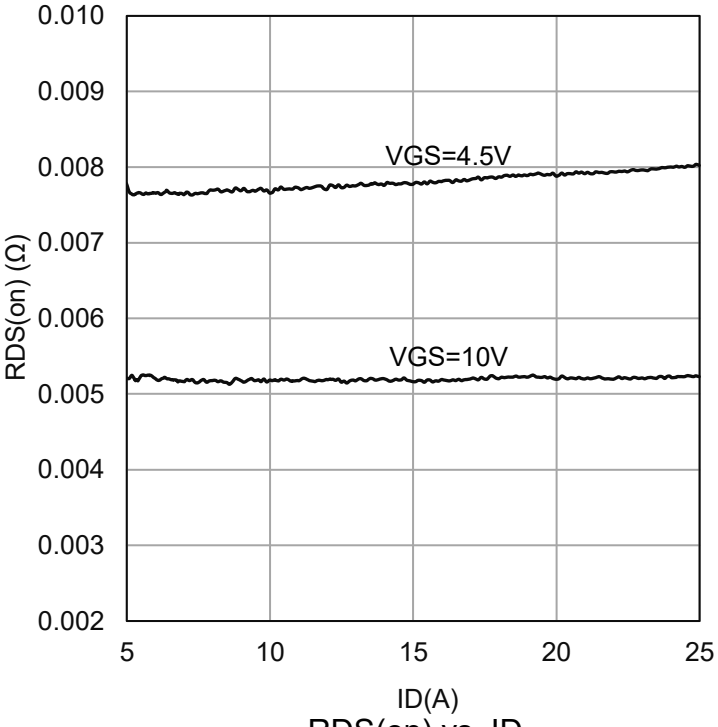
ID vs. VDS



ID vs. VGS

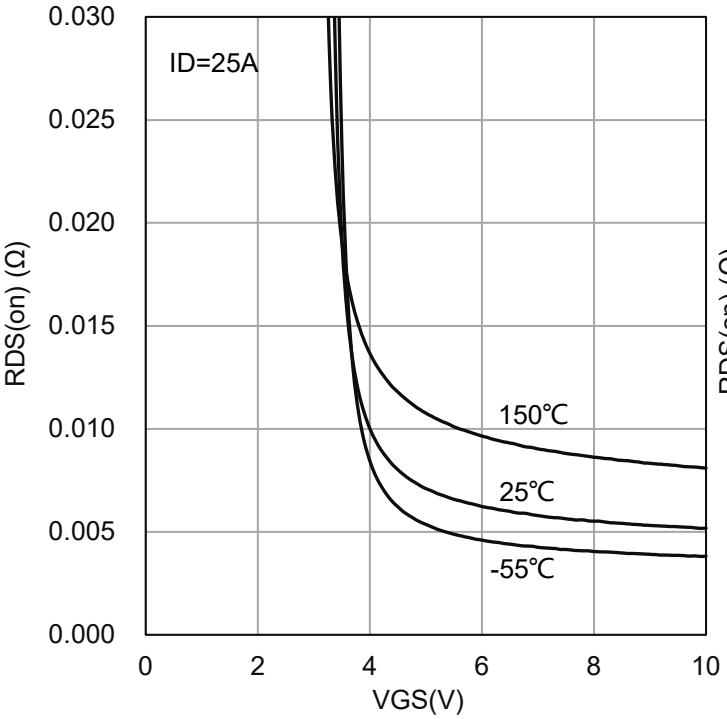


IS vs. VSD

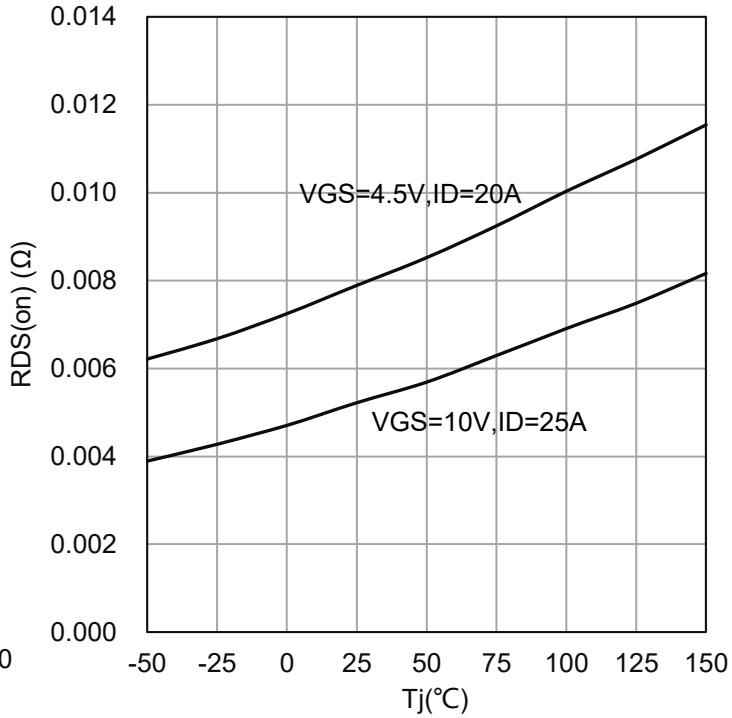


RDS(on) vs. ID

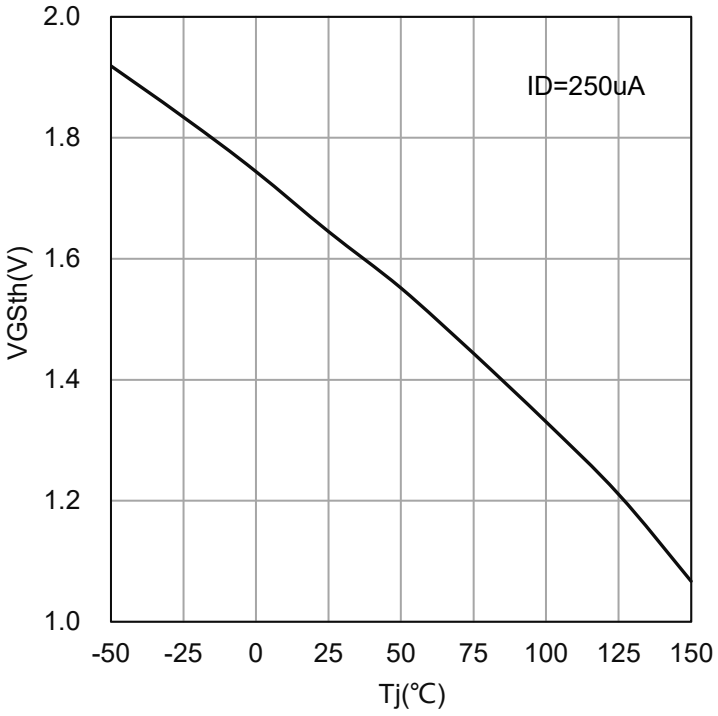
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



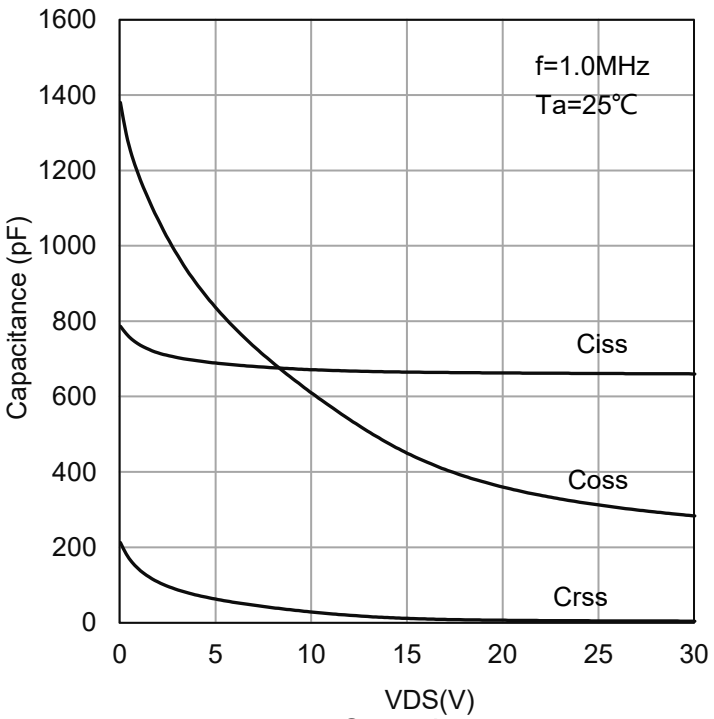
RDS(on) vs. VGS



RDS(on) vs. Tj



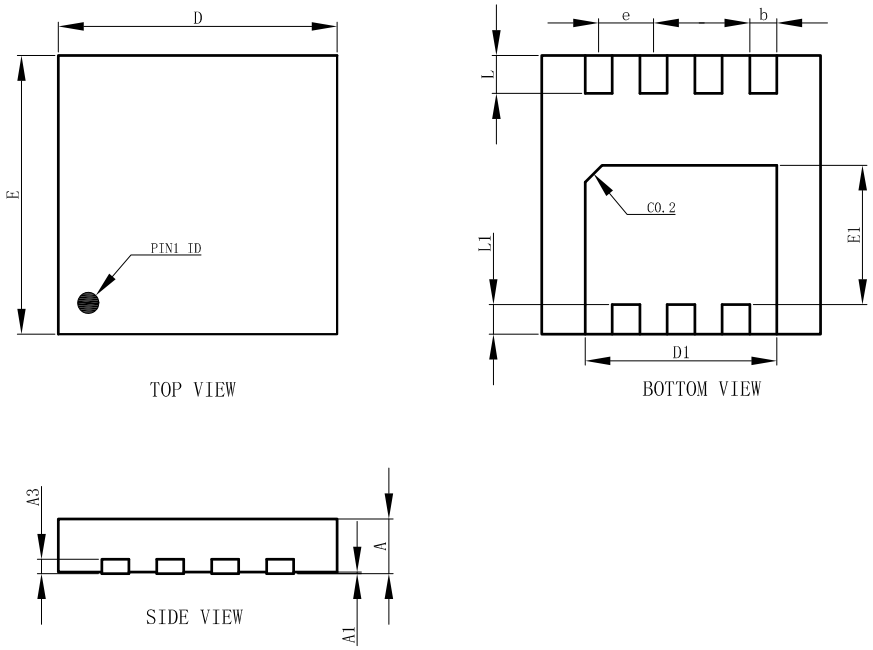
VGSth vs. Tj



Capacitance

8.OUTLINE AND DIMENSIONS

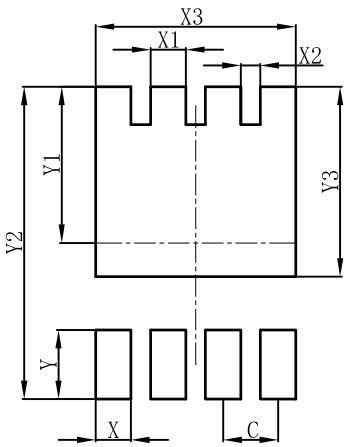
DFN3333-8A



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