

NB8350D

N-Channel 30-V (D-S) MOSFET

1. FEATURES

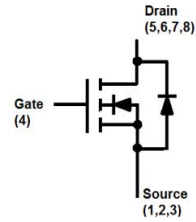
- Low RDS(on) trench technology.
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.



DFN3333-8A

2. APPLICATION

- Power Routing
- DC/DC Conversion
- Motor Drives



3. ORDERING INFORMATION

Device	Marking	Shipping
NB8350D	N50	2000/Tape&Reel

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

Parameter	Symbol	Limits	Unit
Drain-to-Source Voltage	VDSS	30	V
Gate-to-Source Voltage	VGS	±20	V
Continuous Drain Current (Note 1)	ID	TA =25°C	19
		TA =70°C	13.5
Pulsed Drain Current (Note 2)	IDM	68	A
Avalanche Current	IAS	21	A
Avalanche energy (L=0.1mH)	EAS	22.05	mJ
Power Dissipation (Note 1)	PD	TA =25°C	2.5
		TC =25°C	20
Operating Junction Temperature	TJ	-55 ~+150	°C
Storage Temperature Range	Tstg	-55 ~+150	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Thermal Resistance,Junction-to-Ambient (Note 1)	RθJA	50	°C/W
Thermal Resistance,Junction-to-Ambient (Note 3)	RθJA	160	
Thermal Resistance,Junction-to-Case	RθJC	6	

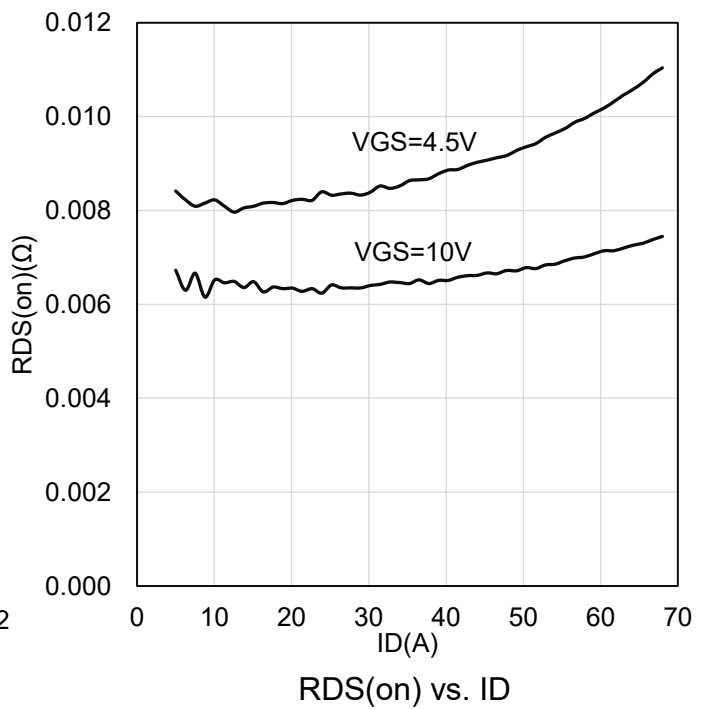
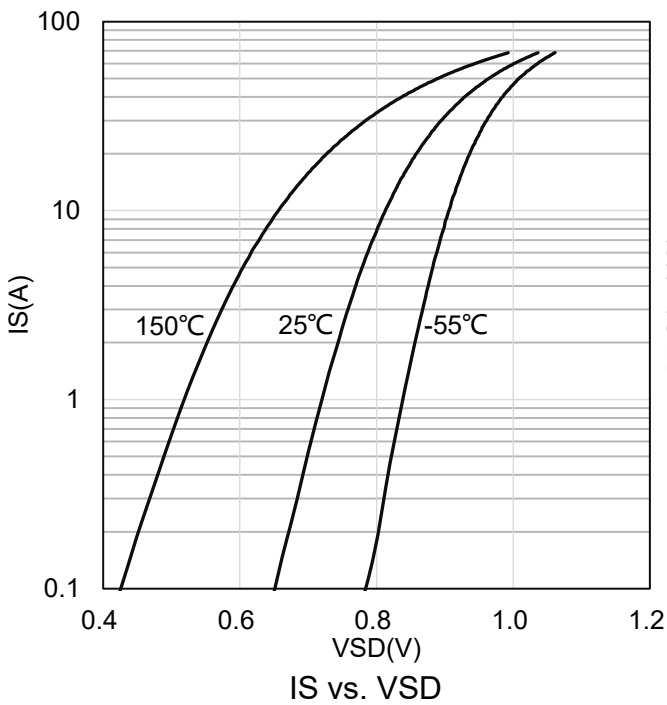
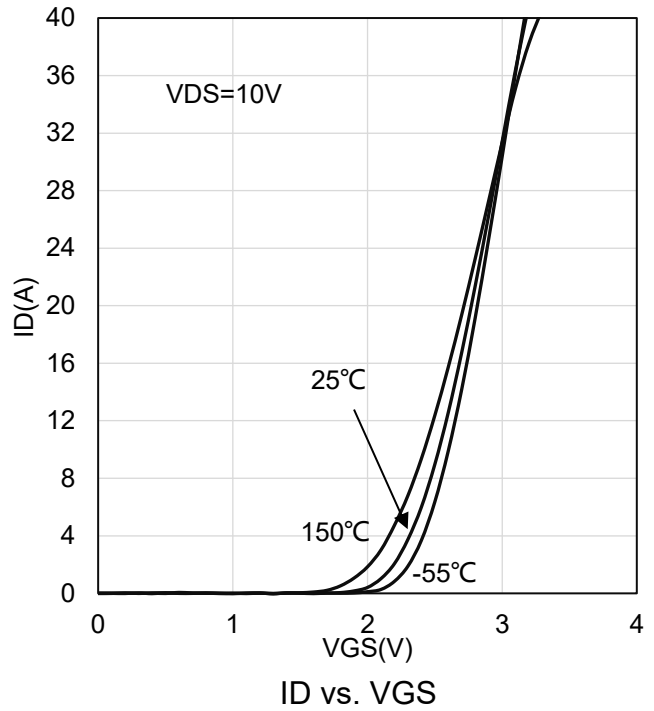
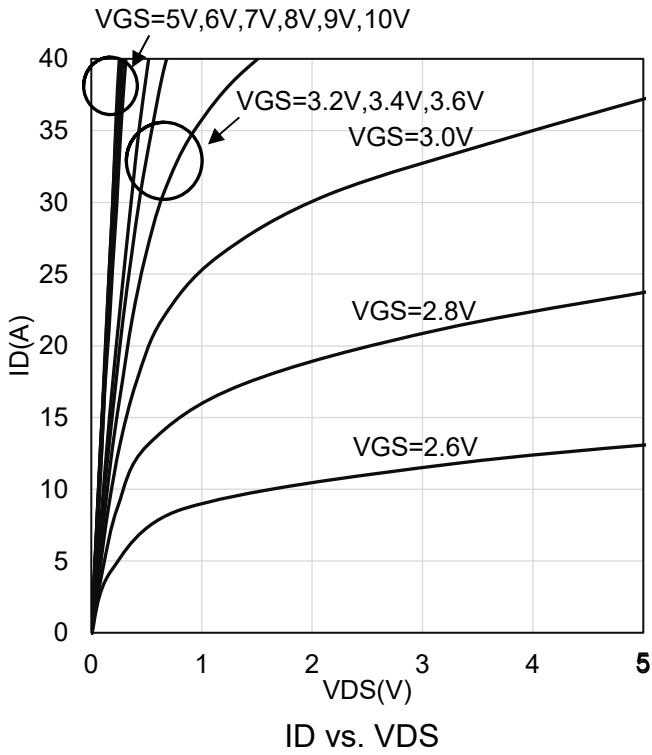
- 1.Surface mounted on 1.5 x 1.5 FR4 board using 1 sq in pad, 2 oz Cu.
- 2.Pulse width limited by maximum junction temperature.
- 3.Surface mounted on FR4 board using the minimum recommended pad size.

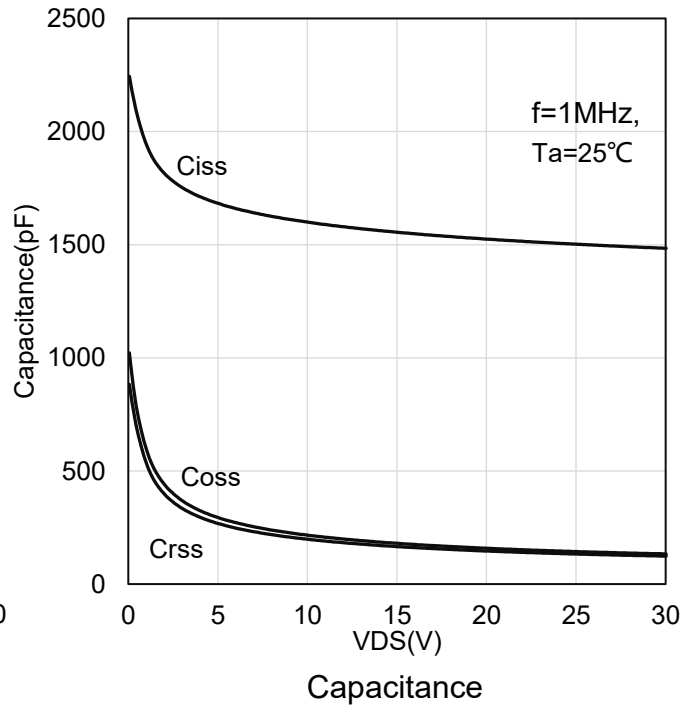
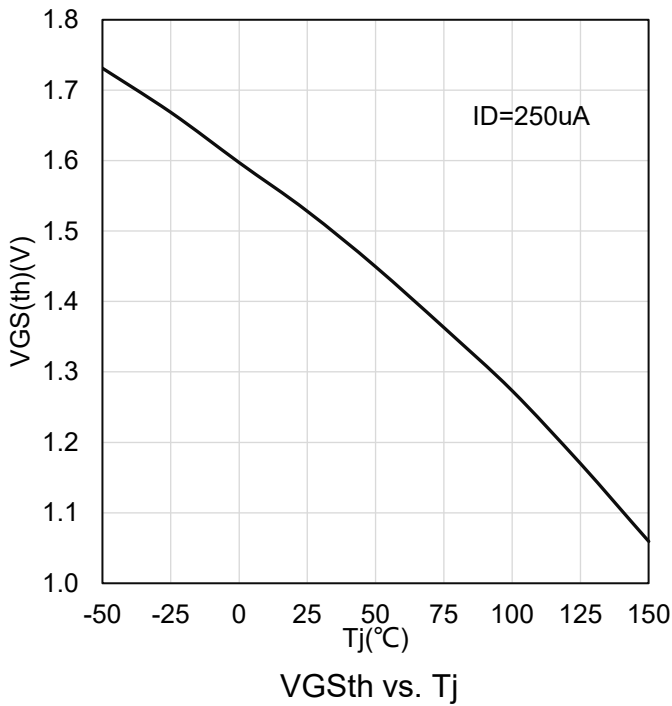
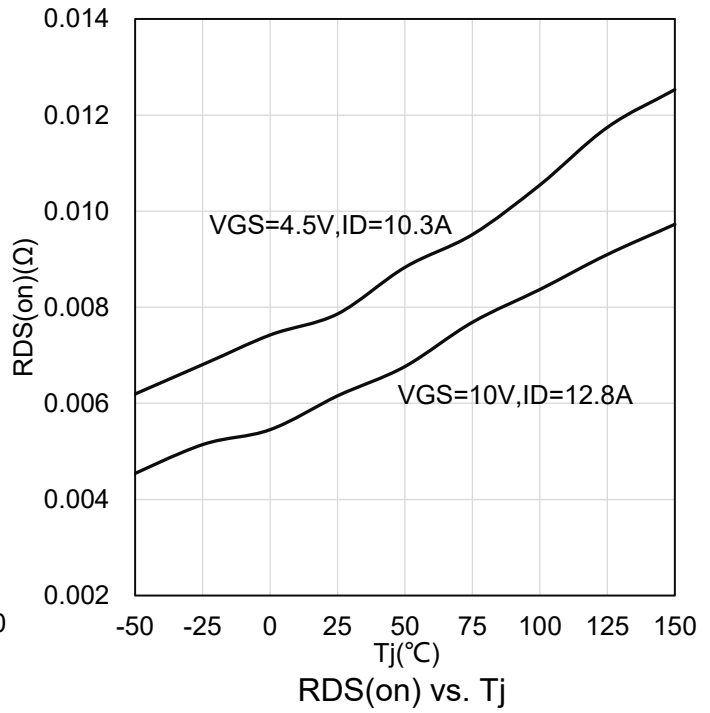
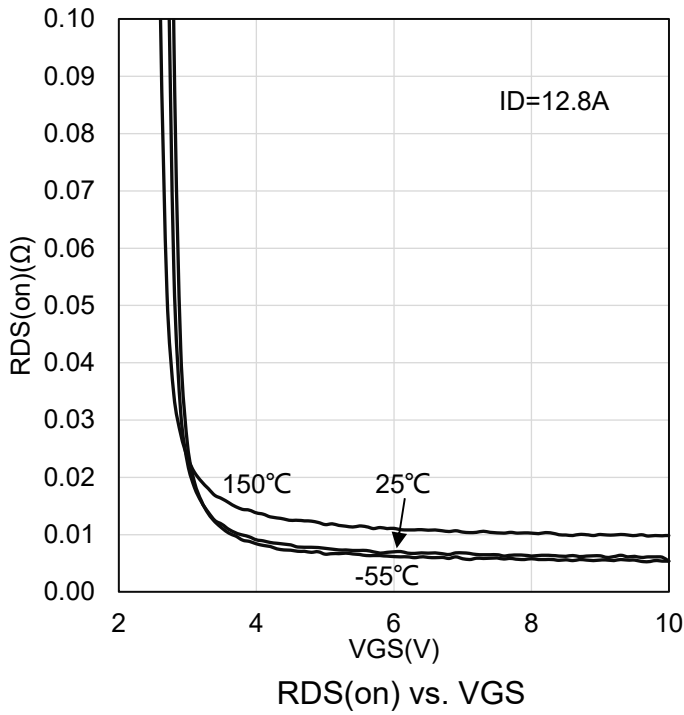


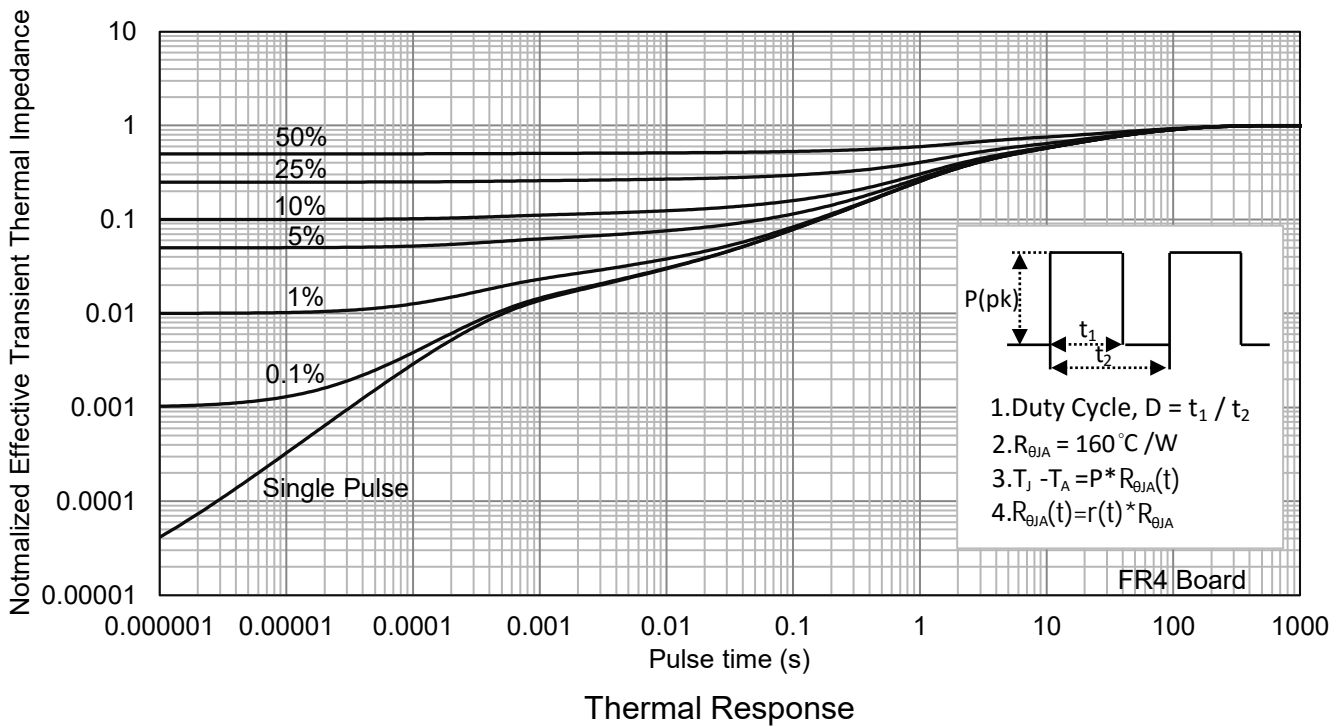
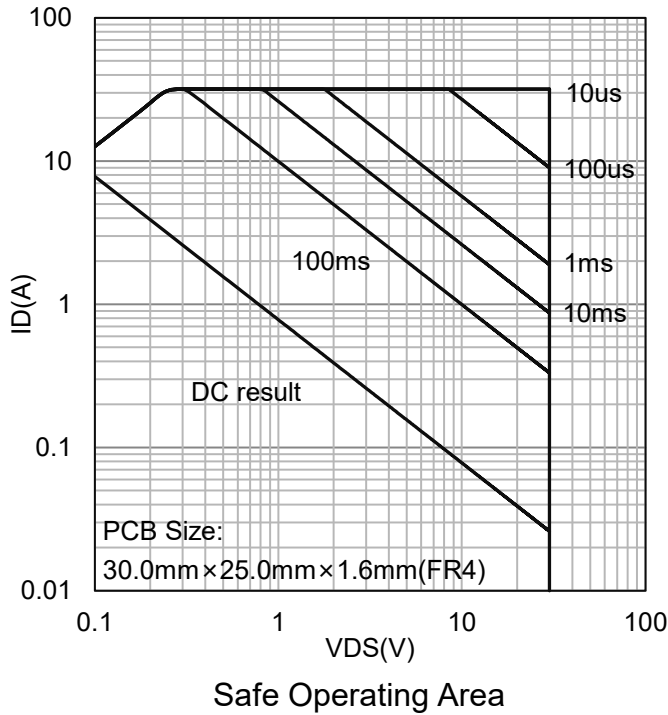
6. ELECTRICAL CHARACTERISTICS

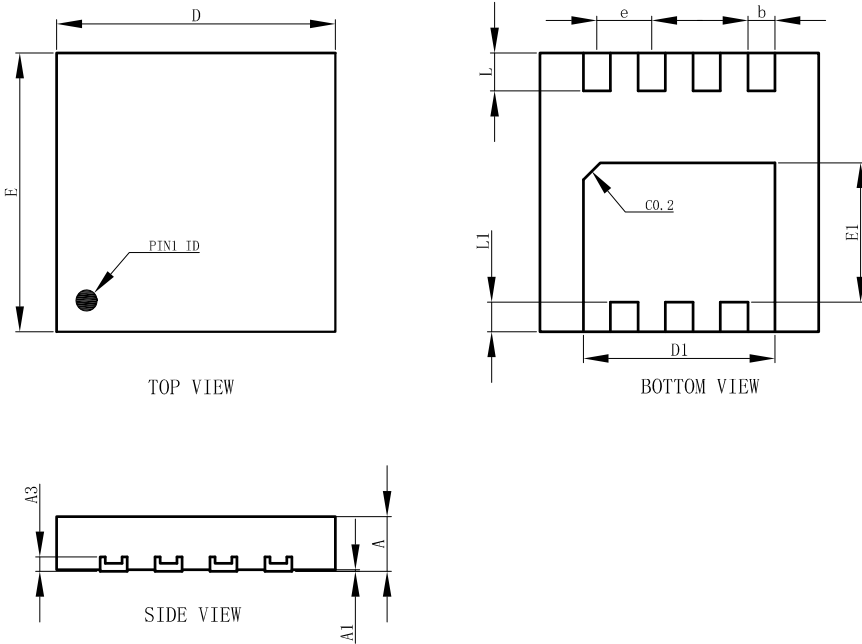
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain-Source Breakdown Voltage (VGS = 0 V, ID = 250 μ A)	V(BR)DSS	30	-	-	V
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μ A)	VGS(th)	1	1.6	3	V
Gate-Body Leakage (VDS = 0 V, VGS = \pm 20 V)	IGSS	-	-	\pm 1	μ A
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V) (VDS = 24 V, VGS = 0 V, TJ = 55°C)	IDSS	-	-	1 25	μ A
Drain-Source On-Resistance(Note 4) (VGS = 10 V, ID = 12.8 A) (VGS = 4.5 V, ID = 10.3 A)	RDS(on)	-	6.5 8.5	7.9 10.5	m Ω
Diode Forward Voltage (IS = 2.3 A, VGS = 0 V)	VSD	-	0.78	1.2	V
Dynamic					
Total Gate Charge	(VDS = 15 V, VGS = 4.5 V, ID = 12.8 A)	Qg	-	16	nC
Gate-Source Charge		Qgs	-	5	
Gate-Drain Charge		Qgd	-	5.7	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 Mhz)	Ciss	-	1578	pF
Output Capacitance		Coss	-	182	
Reverse Transfer Capacitance		Crss	-	165	
Turn-On Delay Time	(VDS = 15 V, RL = 1.2 Ω , ID = 12.8 A, VGEN = 10 V, RGEN = 6 Ω)	td(on)	-	10	ns
Rise Time		tr	-	10	
Turn-Off Delay Time		td(off)	-	48	
Fall Time		tf	-	16	

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

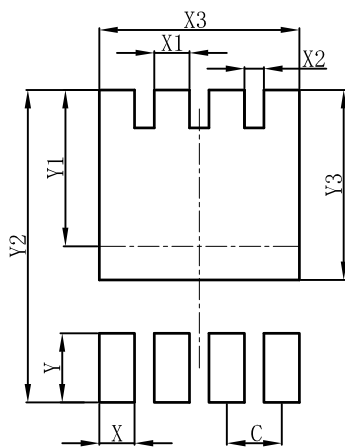

7. ELECTRICAL CHARACTERISTICS CURVES


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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

