

NB8302D

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

1. FEATURES

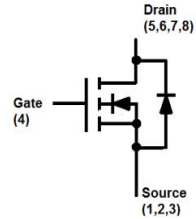
- Low RDS(on) trench technology.
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.



CDFN3333-8H

2. APPLICATION

- Power Routing
- DC/DC Conversion
- Motor Drives



3. ORDERING INFORMATION

Device	Marking	Shipping
NB8302D	S418N	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	TC =25°C	ID	70	A
	TC =70°C		55	
	TA =25°C		41	
	TA =70°C		33	
Pulsed Drain Current (Note 2)		IDM	200	
Avalanche Current		IAS	35	A
Avalanche energy (L=0.1mH)		EAS	61.25	mJ
Power Dissipation	TC =25°C	PD	83	W
	TC =70°C		53	
	TA =25°C		4.6	
	TA =70°C		3	
Operating Junction Temperature		TJ	-55 ~+150	°C
Storage Temperature Range		Tstg	-55 ~+150	

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.

5. THERMAL CHARACTERISTICS

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



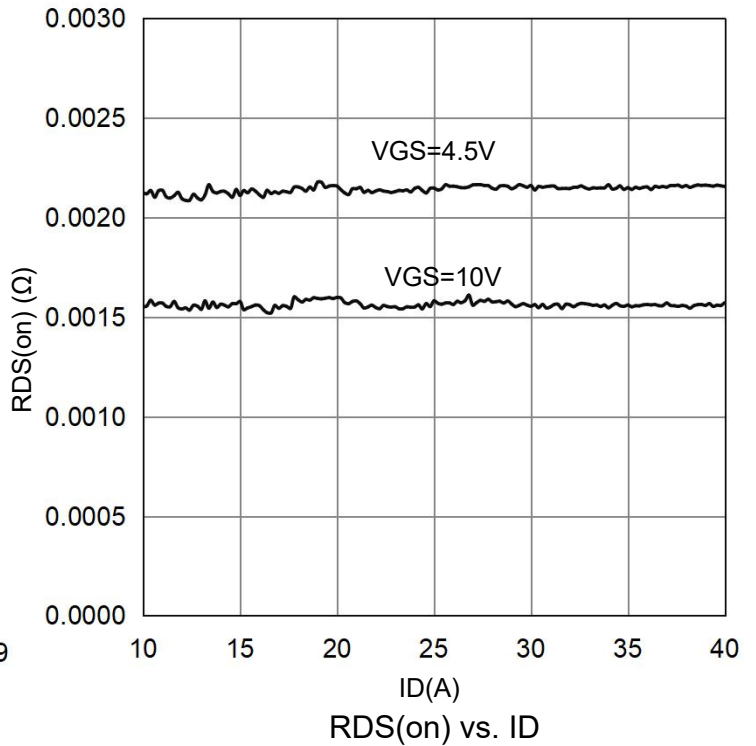
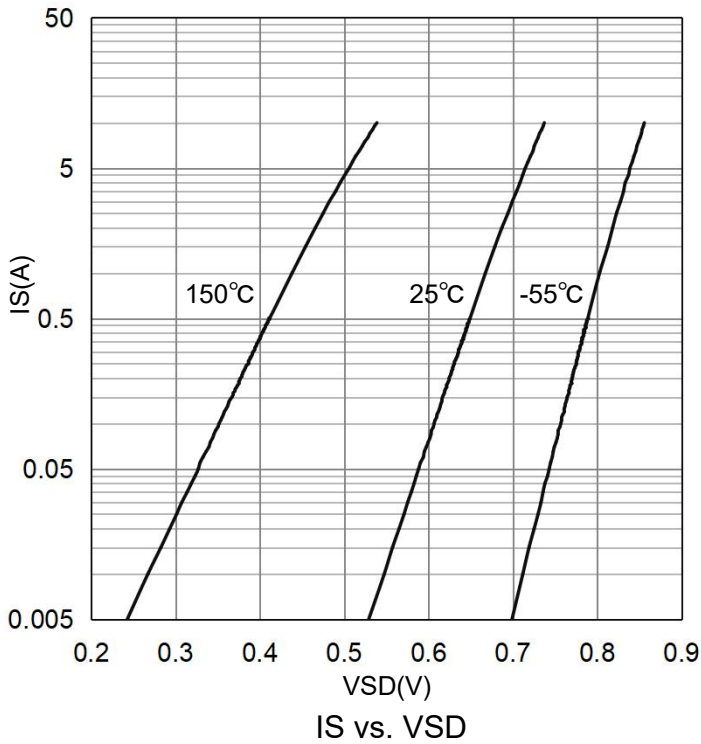
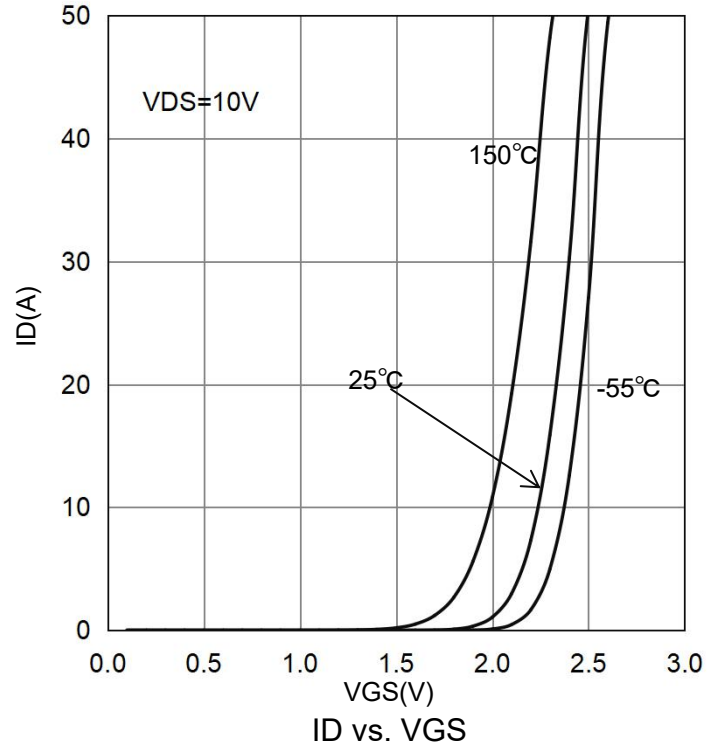
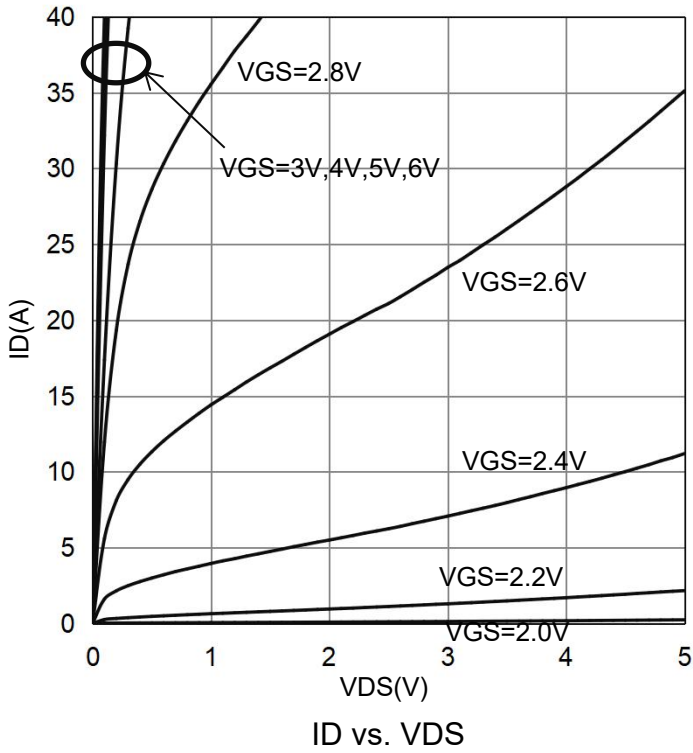
6. ELECTRICAL CHARACTERISTICS

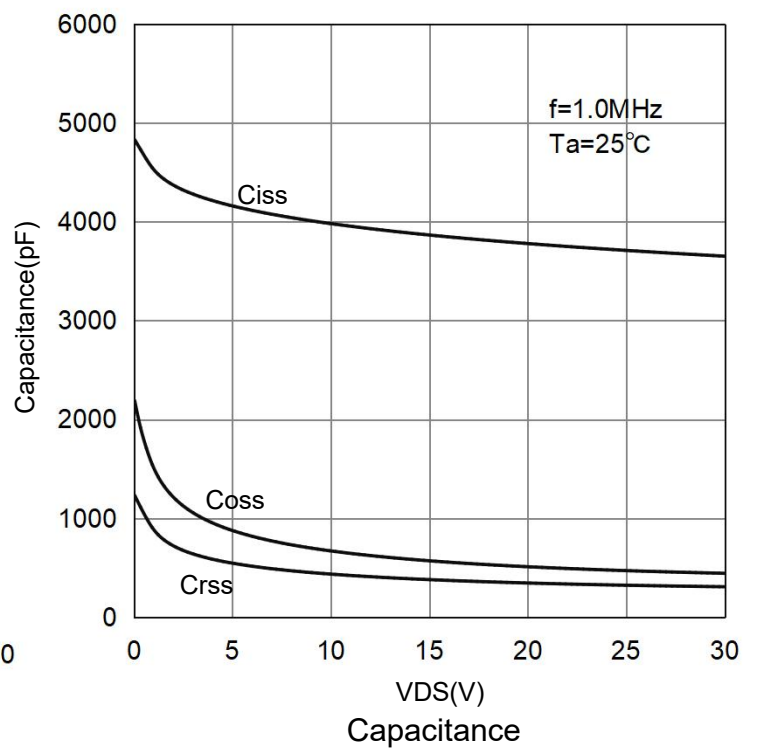
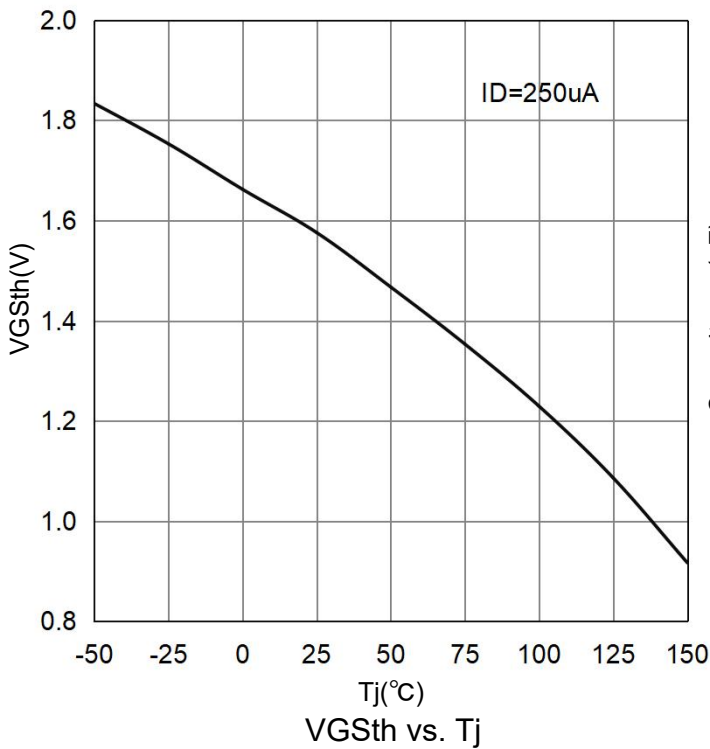
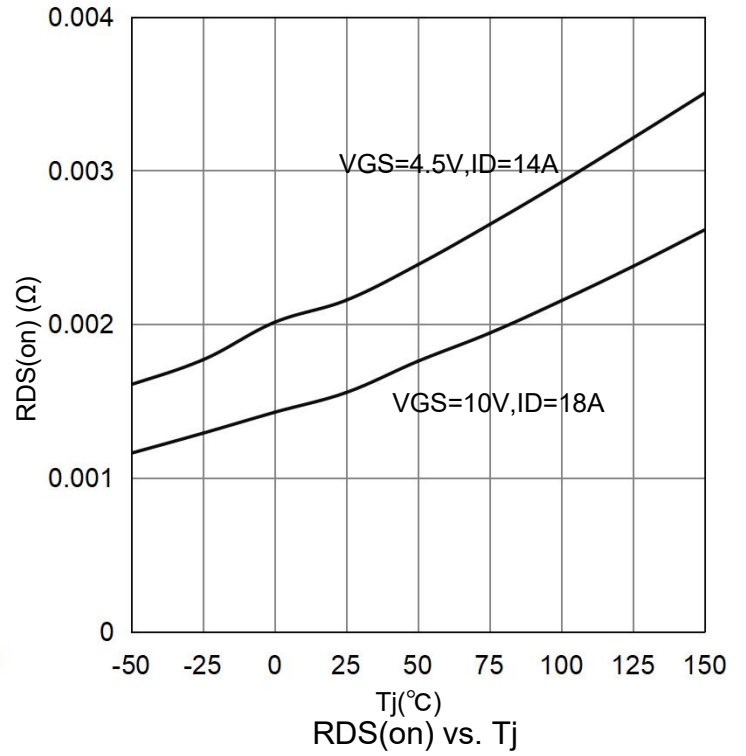
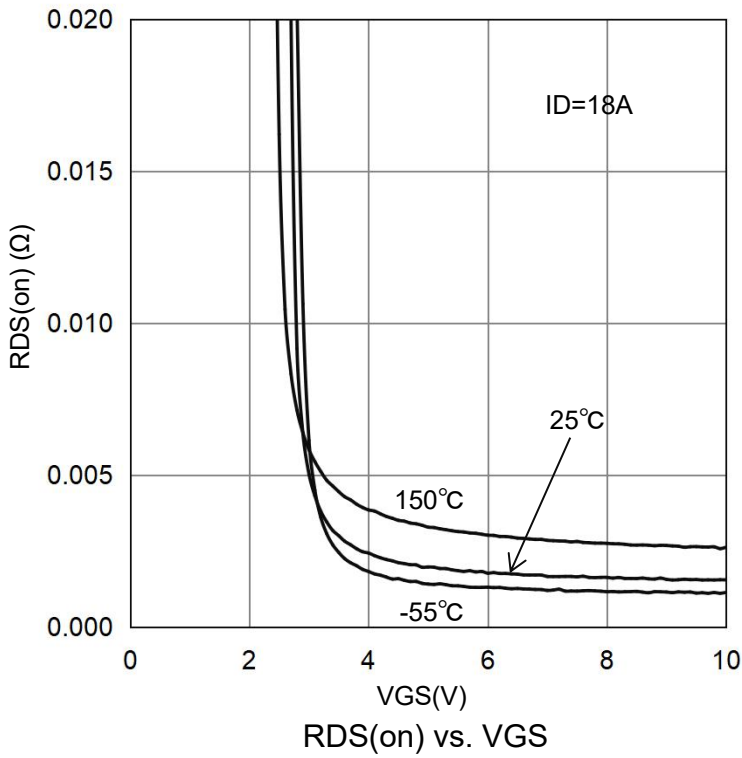
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain-Source Breakdown Voltage (VGS = 0 V, ID = 250 μ A)	V(BR)DSS	30	-	-	V
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μ A)	VGS(th)	1	-	3	V
Gate-Body Leakage (VDS = 0 V, VGS = \pm 20 V)	IGSS	-	-	\pm 100	nA
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V) (VDS = 24 V, VGS = 0 V, TJ = 55°C)	IDSS	-	-	1 10	μ A
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 18 A) (VGS = 4.5 V, ID = 14 A)	RDS(on)	-	-	1.8 2.6	m Ω
Diode Forward Voltage (IS = 3 A, VGS = 0 V)	VSD	-	-	1.2	V
Dynamic					
Total Gate Charge	(VDS = 15 V, VGS = 4.5 V, ID = 18 A)	Qg	-	32.6	nC
Gate-Source Charge		Qgs	-	11.3	
Gate-Drain Charge		Qgd	-	10	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	3864	pF
Output Capacitance		Coss	-	569.8	
Reverse Transfer Capacitance		Crss	-	379.6	
Turn-On Delay Time	(VDS = 15 V, RL = 0.83 Ω , ID = 18 A, VGEN = 10 V, RGEN = 6 Ω)	td(on)	-	8	ns
Rise Time		tr	-	19	
Turn-Off Delay Time		td(off)	-	131	
Fall Time		tf	-	56	

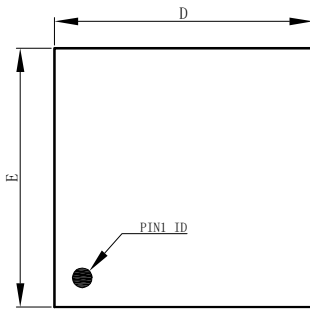
3. Pulse test: PW \leq 300 μ s duty cycle \leq 2%.



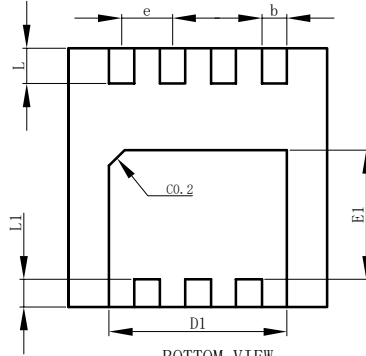
7. ELECTRICAL CHARACTERISTICS CURVES



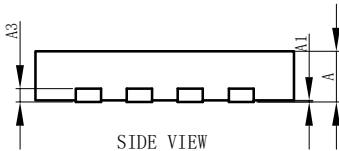
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)


8.OUTLINE AND DIMENSIONS
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TOP VIEW

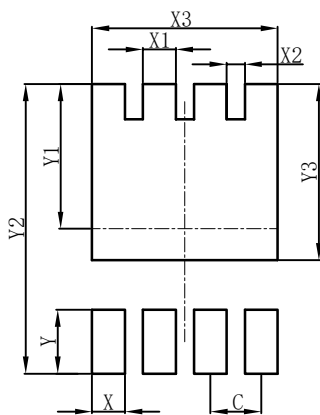


BOTTOM VIEW



SIDE VIEW

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DIM	MIN	NOR	MAX
A	0.70	0.75	0.80
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	2.25	2.27	2.32
E1	1.75	1.80	1.85
e	0.65BSC		
L	0.40	0.45	0.50
L1	0.30	0.35	0.40
A3	0.203REF.		
All Dimensions in mm			

9.SOLDERING FOOTPRINT
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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

