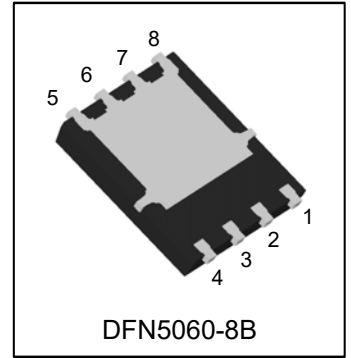


N7304HSD

N-Channel Logic Level Enhancement Mode 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.

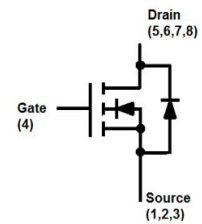


2. APPLICATION

- Power Routing
- DC/DC Conversion
- Motor Drives

3. ORDERING INFORMATION

Device	Marking	Shipping
N7304HSD	LN7304HS	3000/Tape&Reel



4. MAXIMUM RATINGS(Ta = 25°C)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDSS	30	V
Gate-to-Source Voltage		VGS	+20/-16	V
Continuous Drain Current(Note 1)	TA =25°C	ID	20	A
	TA =100°C		15	
	TC =25°C		100	
	TC =100°C		70	
Pulsed Drain Current (Note 2)		IDM	80	
Power Dissipation	TA =25°C	PD	2.5	W
	TA =100°C		1.5	
	TC =25°C		50	
	TC =100°C		20	
Operating Junction Temperature		TJ	-55 ~+150	°C
Storage Temperature Range		Tstg	-55 ~+150	

- 1.Package Limited.
- 2.Pulse width limited by maximum junction temperature.
- 3.50° C/W when mounted on a 1 in² pad of 2 oz copper.

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 3)	RθJA	50	°C/W
Maximum Junction-to-Case	RθJC	2.5	

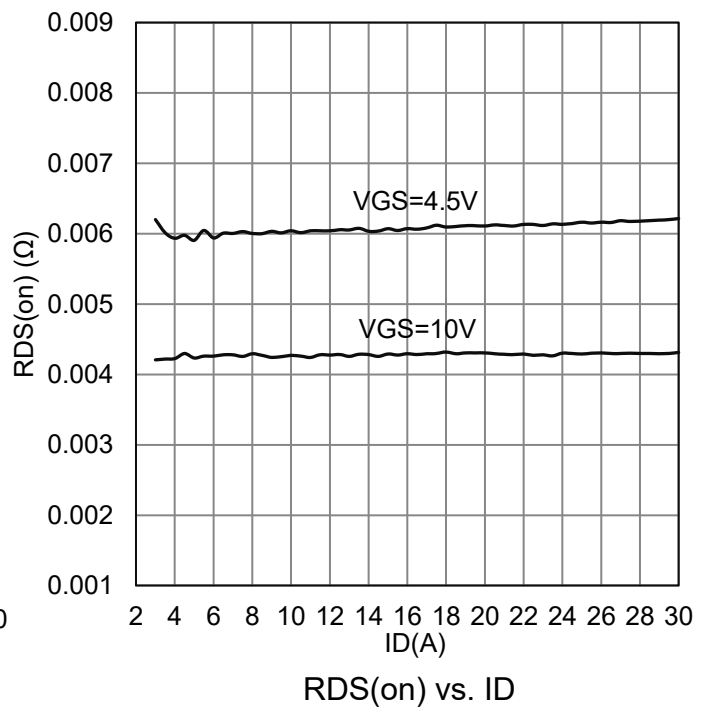
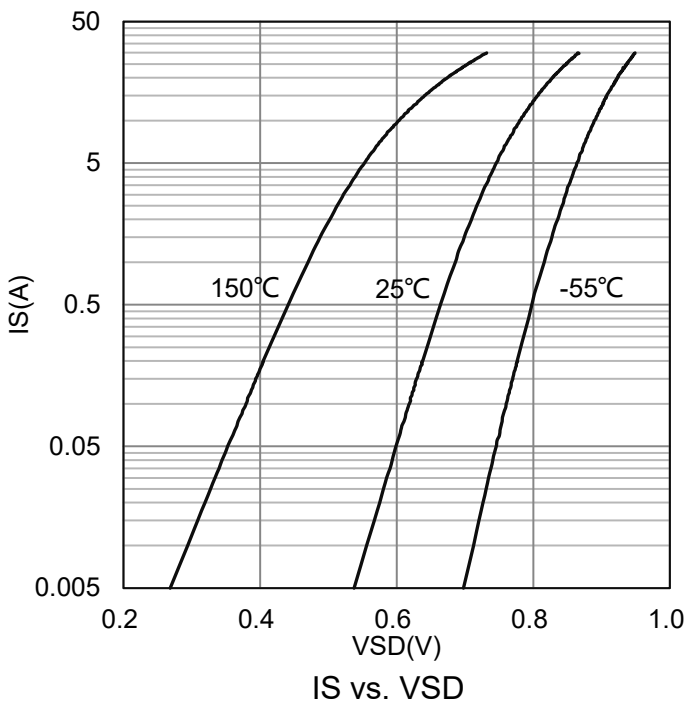
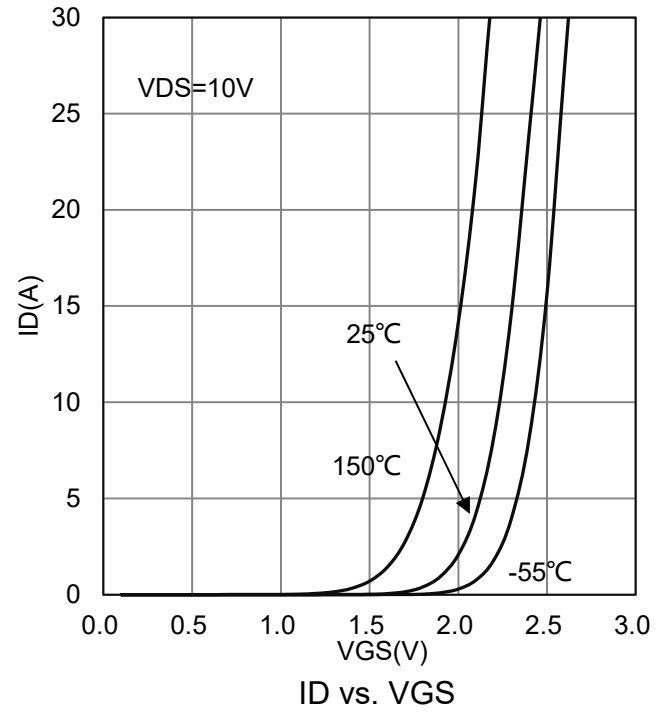
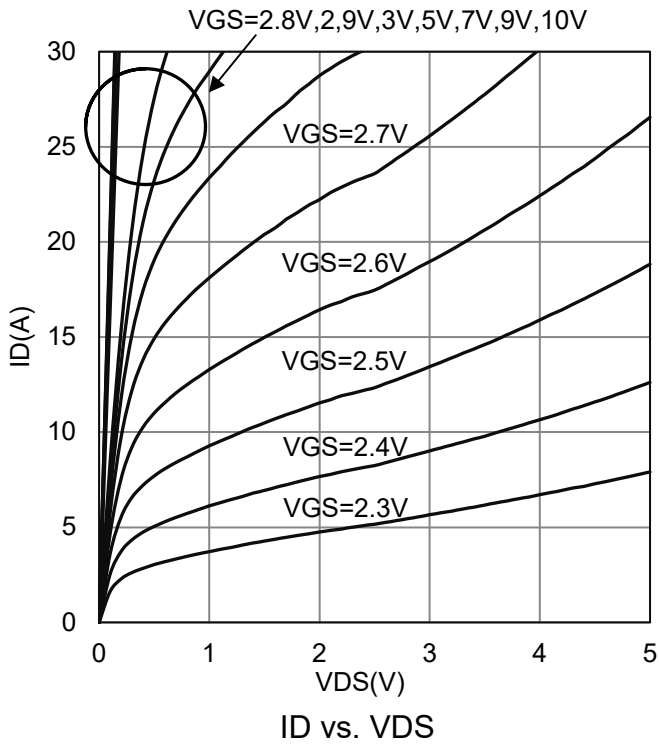


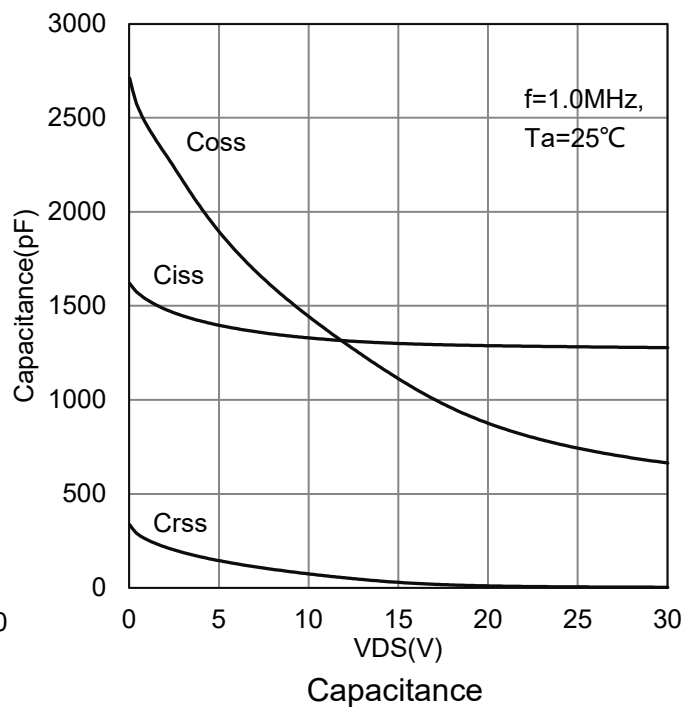
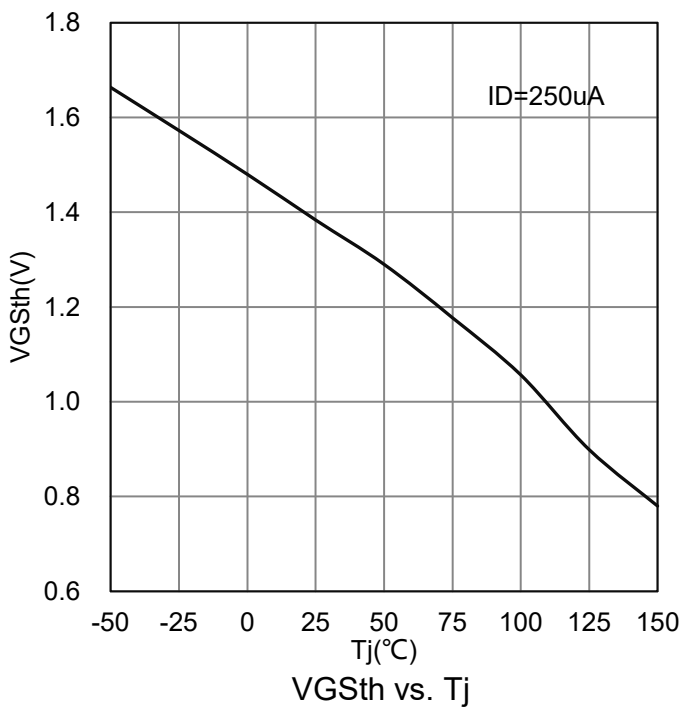
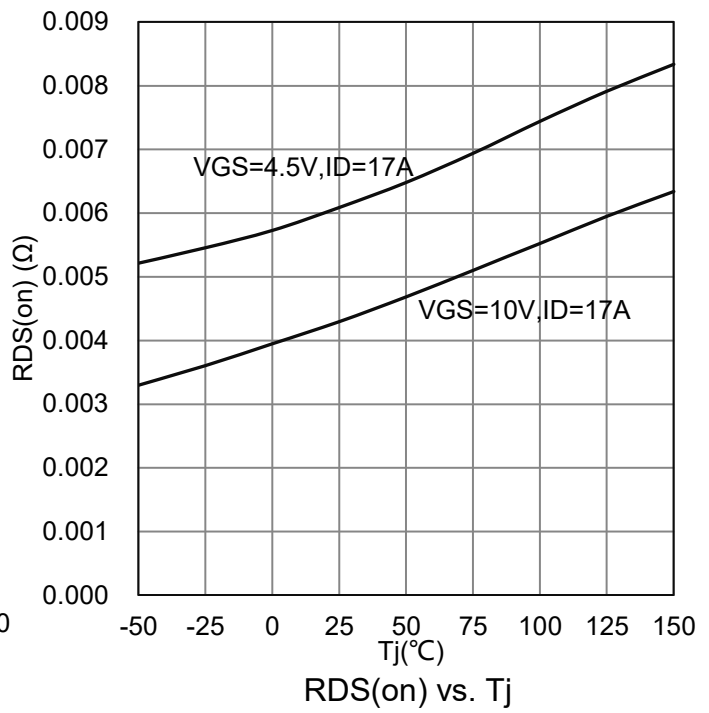
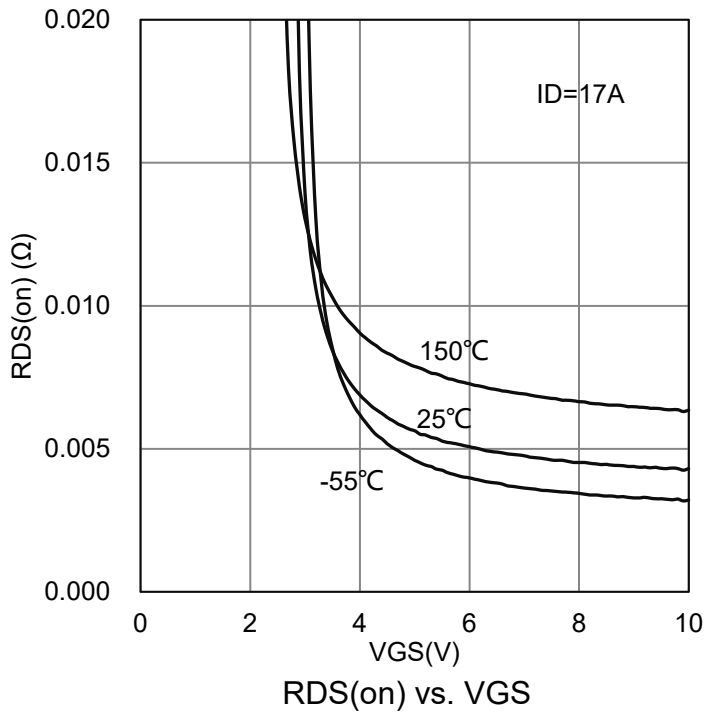
6. ELECTRICAL CHARACTERISTICS(Ta = 25°C)

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	1.7	3	V	
Gate-Body Leakage (VDS = 0 V, VGS = +20V/-16V)	IGSS	-	-	\pm 100	nA	
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V) (VDS = 20 V, VGS = 0 V, TJ = 125°C)	IDSS	-	-	1 25	μ A	
Drain-Source On-Resistance(Note 4) (VGS = 10 V, ID = 17 A) (VGS = 4.5 V, ID = 17 A)	RDS(on)	-	3.2 4.8	4.0 6.0	m Ω	
Dynamic						
Total Gate Charge(VGS=10V)	(VDS = 15 V, VGS = 10 V, ID = 17 A)	Qg	-	22.2	-	nC
Total Gate Charge(VGS=4.5V)		Qg	-	10.6	-	
Gate-Source Charge		Qgs	-	2.6	-	
Gate-Drain Charge		Qgd	-	4.4	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	1300	-	pF
Output Capacitance		Coss	-	1111	-	
Reverse Transfer Capacitance		Crss	-	29	-	
Turn-On Delay Time	(VDS = 15 V, ID = 1 A, VGS = 10 V, RGS = 2.7 Ω)	td(on)	-	8.5	-	ns
Rise Time		tr	-	8.7	-	
Turn-Off Delay Time		td(off)	-	35.4	-	
Fall Time		tf	-	34.3	-	
Diode Forward Voltage (IF = 2 A, VGS = 0V)	VSD	-	-	1.2	V	
Gate Resistance (VDS=0V, VGS=0V, f=1.0MHz)	Rg	-	2	-	Ω	

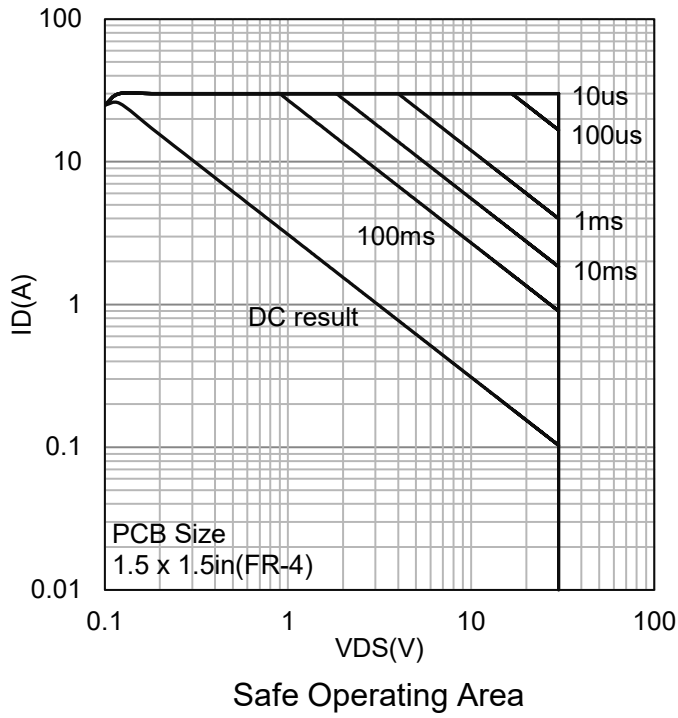
4.Pulse test: PW \leq 300 μ s duty cycle \leq 2%.

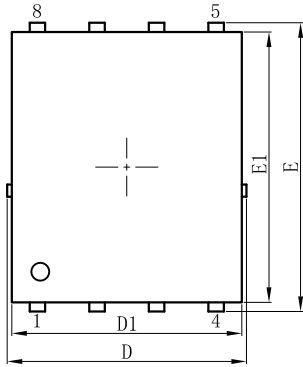
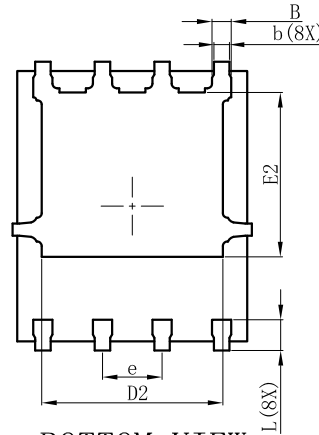
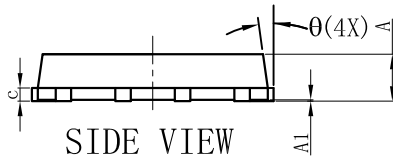


7. ELECTRICAL CHARACTERISTICS CURVES


7. ELECTRICAL CHARACTERISTICS CURVES(Con.)


7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

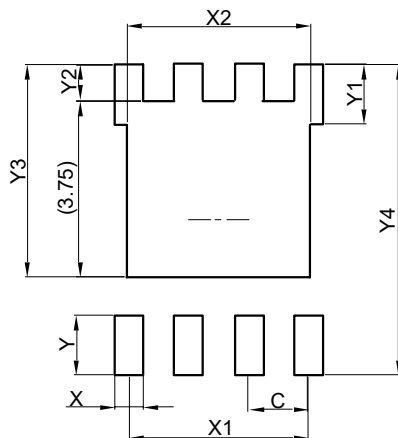


8. OUTLINE AND DIMENSIONS
DFN5060-8B

TOP VIEW

BOTTOM VIEW

SIDE VIEW

DFN5060-8B			
DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.00	0.02	0.05
E	6.00	6.15	6.30
E1	5.66	5.76	5.86
E2	3.40	3.50	3.60
D	4.95	5.10	5.25
D1	4.80	4.90	5.00
D2	3.76	3.86	3.96
b	0.30	0.35	0.40
B	0.36	0.41	0.46
L	0.56	0.66	0.76
e	1.27BSC		
c	0.254REF.		
θ	0°	-	12°
All Dimensions in mm			

GENERAL NOTES

1. Top package surface finish Ra0.4±0.2um
2. Bottom package surface finish Ra0.7±0.2um
3. Side package surface finish Ra0.4±0.2um
4. Protrusion or Gate Burrs shall not exceed 0.05mm per side.
5. Offcenter Max0.038mm; Mismatch Max 0.038mm.

9. SOLDERING FOOTPRINT


DFN5060-8B	
DIM	(mm)
C	1.27
X	0.61
X1	3.81
X2	3.91
Y	1.27
Y1	1.27
Y2	0.77
Y3	4.52
Y4	6.61

