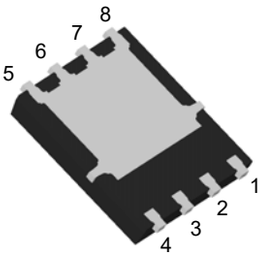
N7303D

N-Channel Logic Level Enhancement Mode MOSFET



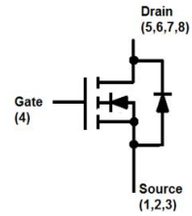
DFN5060-8B

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
N7303D	LN7303	3000/Tape&Reel

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

Parameter		Symbol	Limits	Unit
Drain−to−Source Voltage		VDSS	30	V
Gate−to−Source Voltage		VGS	±20	V
Continuous Drain Current	TA =25°C	ID	30	A
	TC = 25°C		150	
	TC =100°C		112	
Pulsed Drain Current (Note 2)		IDM	400	
Avalanche Current		IAS	43	
Avalanche Energy(L=0.3mH)		EAS	92.45	mJ
Power Dissipation	TC =25°C	PD	83	W
	TC =100°C		33	
Operating Junction Temperature		TJ	−55 ~+150	℃
Storage Temperature Range		Tstg	−55 ~+150	℃

1.Package Limited.

2.Pulse width limited by maximum junction temperature.

3.Duty cycle≤1%

5. THERMAL CHARACTERISTICS

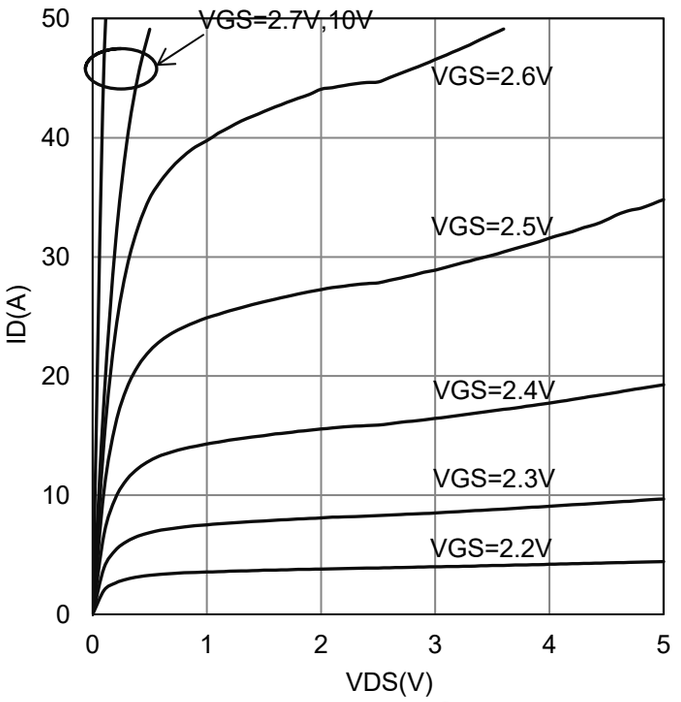
Parameter		Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 3)	t≤10s	RθJA	20	℃/W
	Steady State		50	
Maximum Junction-to-Case		RθJC	1.5	

6. ELECTRICAL CHARACTERISTICS

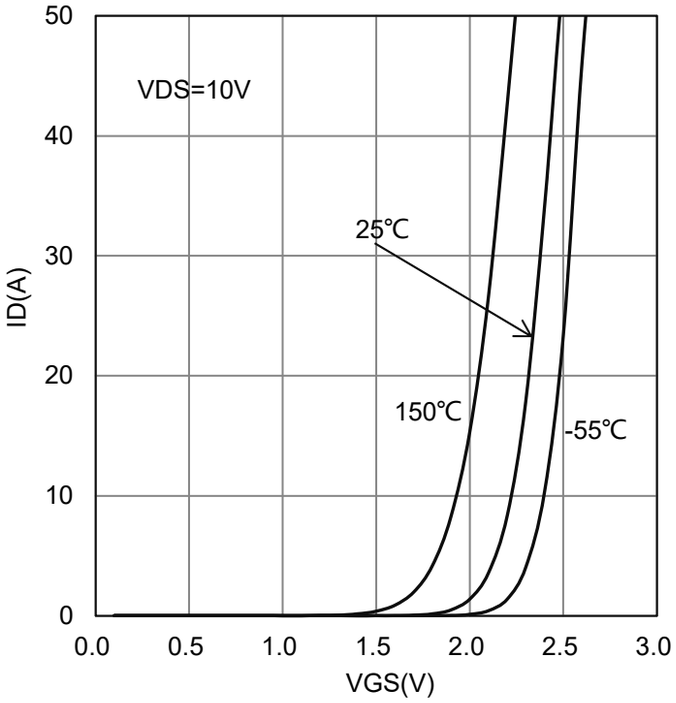
Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage (VGS = 0V, ID = 250μA)		V(BR)DSS	30	-	-	V
Gate-Source Threshold Voltage (VDS = VGS , ID = 250 uA)		VGS(th)	1	2	3	V
Gate-Body Leakage (VDS = 0 V, VGS = ±20 V)		IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V)		IDSS	-	-	1	μA
Drain-Source On-Resistance(Note 4) (VGS = 10 V, ID = 30 A) (VGS = 4.5 V, ID = 30 A)		RDS(on)	- -	1.4 1.9	1.7 2.6	mΩ
Dynamic						
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1MHz)	Ciss	-	4763	-	pF
Output Capacitance		Coss	-	887	-	
Reverse Transfer Capacitance		Crss	-	571	-	
Total Gate Charge(VGS=4.5V)	(VDS = 15 V, VGS =10 V,ID = 30A)	Qg	-	51	-	nC
Total Gate Charge(VGS=10V)		Qg	-	102	-	
Gate-Source Charge		Qgs	-	13	-	
Gate-Drain Charge		Qgd	-	20	-	
Turn-On Delay Time	(VDS=15 V, ID=1A, VGS= 10V, RGS = 2.7 Ω)	td(on)	-	20	-	ns
Rise Time		tr	-	15	-	
Turn-Off Delay Time		td(off)	-	60	-	
Fall Time		tf	-	30	-	
Gate Resistance (VGS =15mV, VDS = 0V, f = 1MHz)		Rg	-	2	-	Ω
SOURCE - DRAIN DIODE RATINGS AND CHARACTERISTICS (TC = 25 ℃)						
Continuous Current		IS	-	-	100	A
Pulsed Current		ISM	-	-	400	A
Forward Voltage (IF= 30A, VGS = 0V)		VSD	-	-	1.2	V

4.Pulse test: PW≤ 300μs duty cycle ≤ 2%.
5.Independent of operating temperature.
6.Pulse width limited by maximum junction temperature.
7.Package Limited.

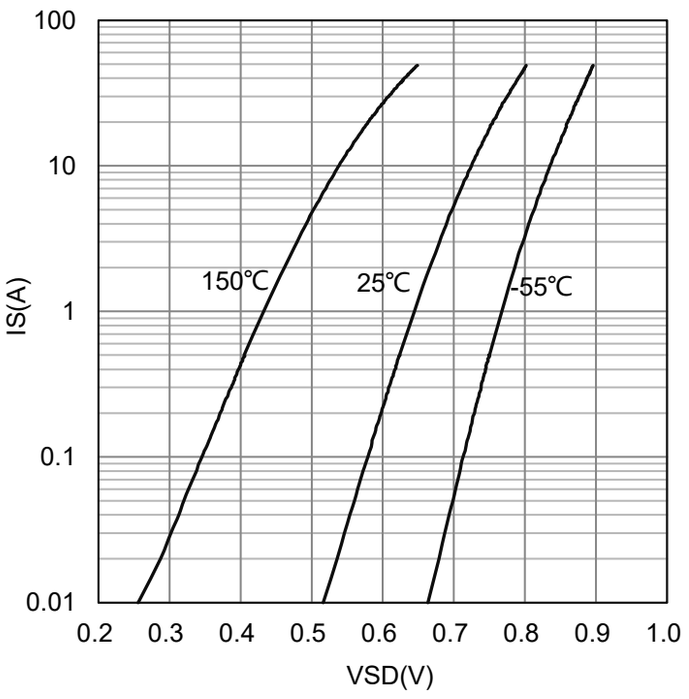
7.ELECTRICAL CHARACTERISTICS CURVES



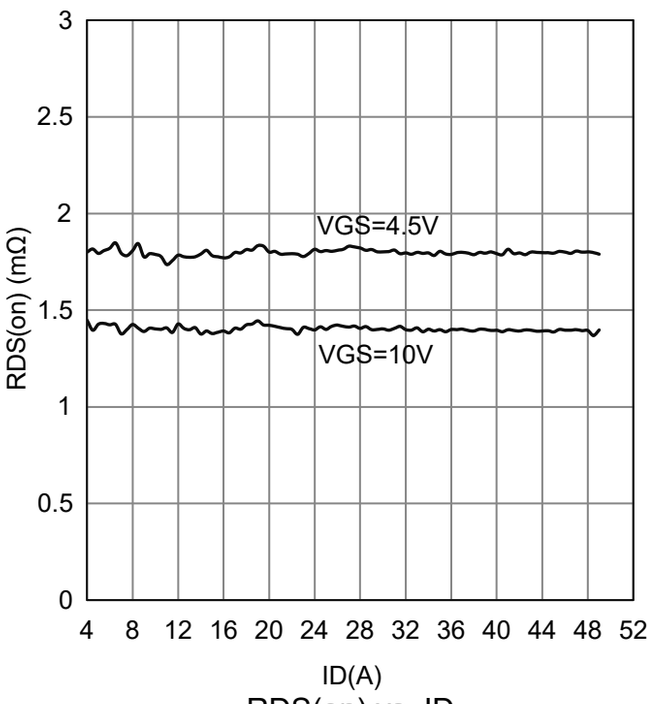
ID vs. VDS



ID vs. VGS

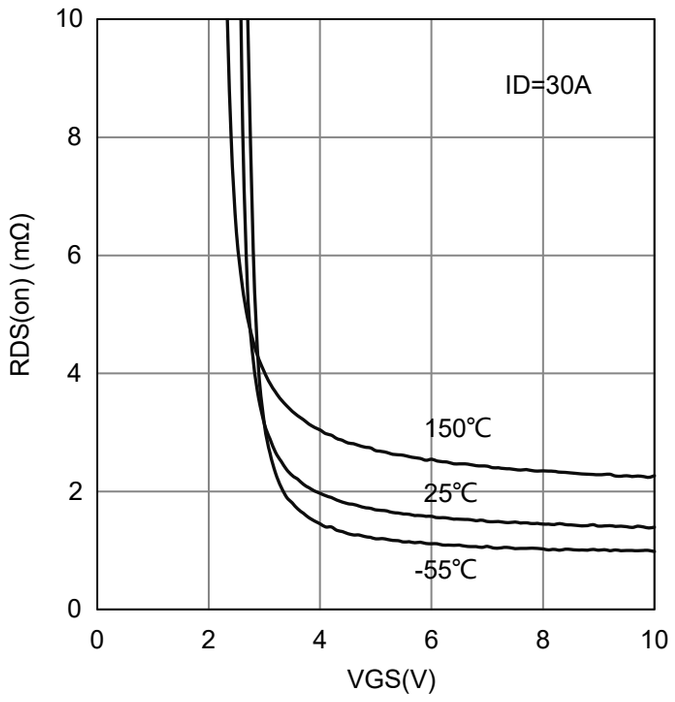


IS vs. VSD

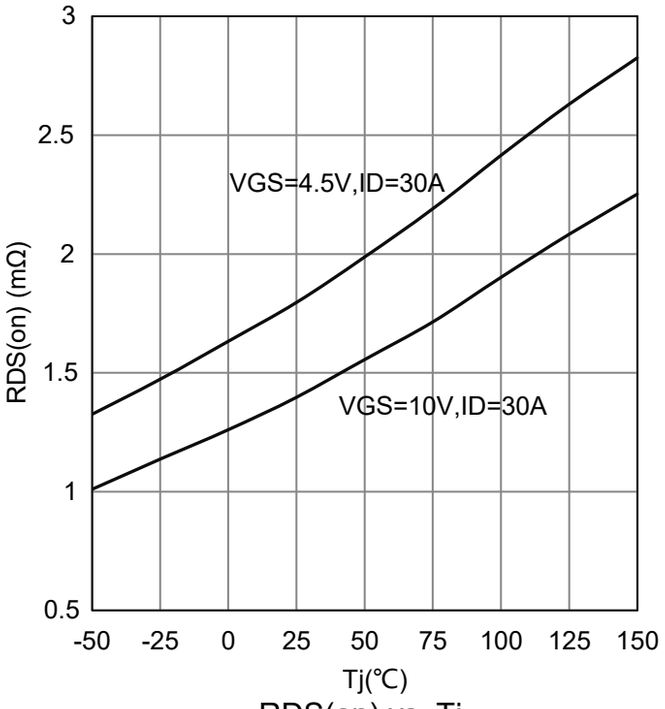


RDS(on) vs. ID

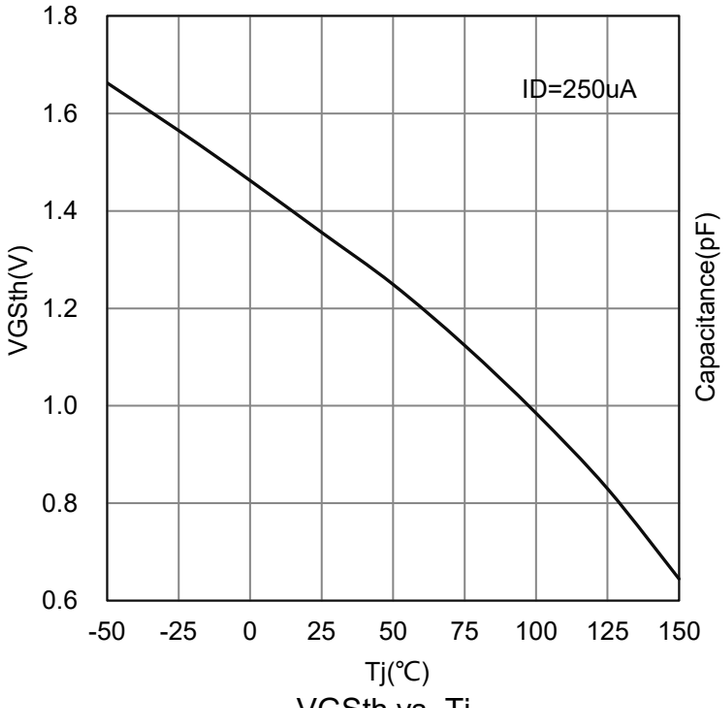
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



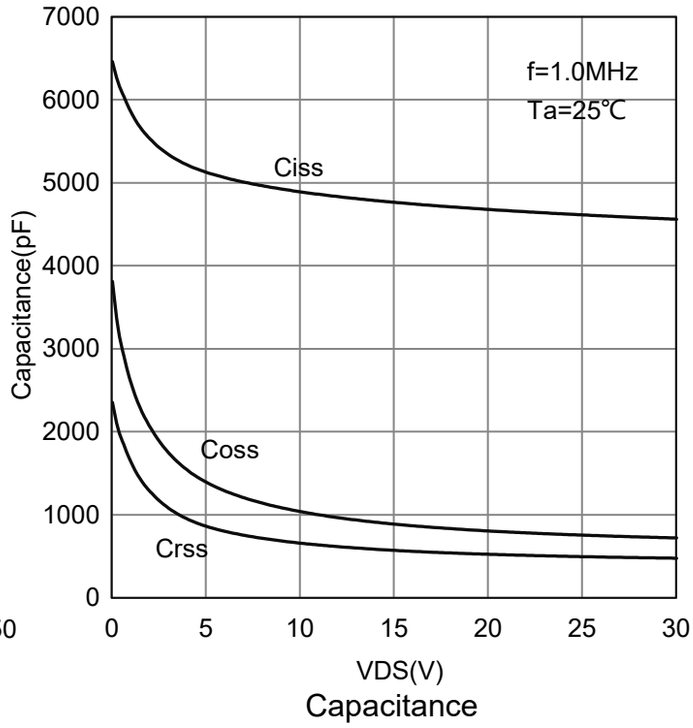
RDS(on) vs. VGS



RDS(on) vs. Tj



VGSth vs. Tj



Capacitance

8.OUTLINE AND DIMENSIONS

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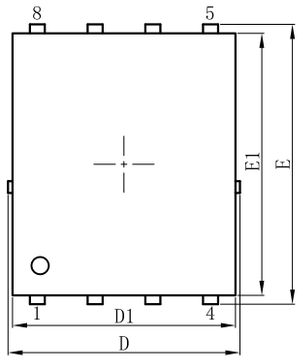
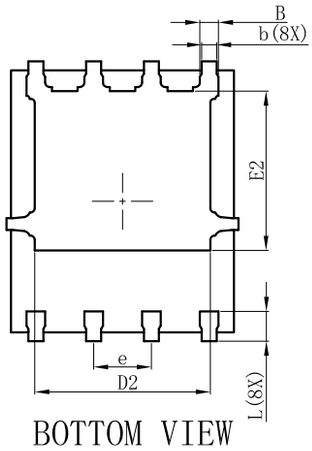
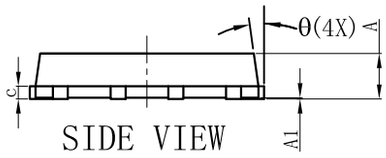


TOP VIEW



BOTTOM 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			

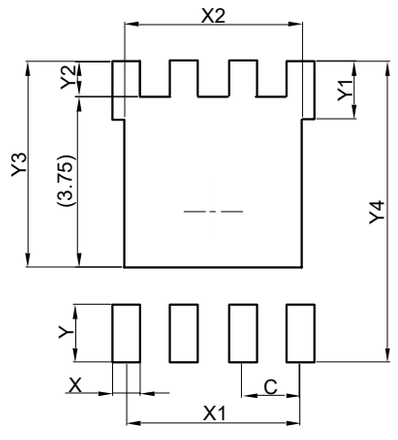


SIDE VIEW

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