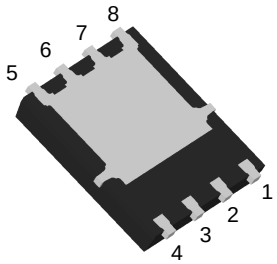
LN7406DT1WG

N-Channel 40-V (D-S) MOSFET



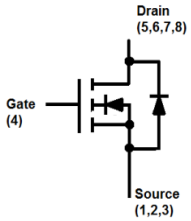
DFN5060-8B

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

- White LED boost converters
- DC/DC Conversion Circuits
- Motor Drives



3. ORDERING INFORMATION

Device	Marking	Shipping
LN7406DT1WG	LN7406	3000/Tape&Reel

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

Parameter		Symbol	Limits	Unit
Drain−to−Source Voltage		VDSS	40	V
Gate−to−Source Voltage		VGS	±20	V
Continuous Drain Current(Note 1)	TA =25°C	ID	18	A
	TA =70°C		16	
Pulsed Drain Current (Note 2)		IDM	72	
Continuous Source Current (Diode Conduction)(Note 1)		IS	18	A
Avalanche Current (L = 0.1mH)		IAS	34	A
Avalanche Energy (L = 0.1mH)		EAS	57.8	mJ
Power Dissipation(Note 1)	TA =25°C	PD	2.5	W
	TA =70°C		1.9	
Operating Junction Temperature		TJ	−55 ~+150	℃
Storage Temperature Range		Tstg	−55 ~+150	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Thermal Resistance, Junction–to–Ambient (Note 1)	RθJA	50	℃/W

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

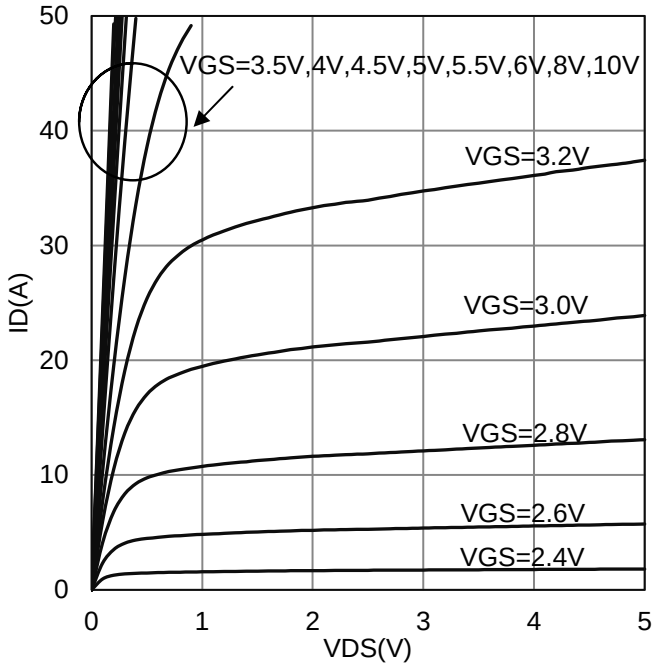
6. ELECTRICAL CHARACTERISTICS

Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Gate-Source Threshold Voltage (VDS = VGS , ID = 250 uA)		VGS(th)	1	-	2.5	V
Gate-Body Leakage (VDS = 0 V, VGS = ±20 V)		IGSS	-	-	± 10	uA
Zero Gate Voltage Drain Current (VDS = 32 V, VGS = 0 V) (VDS = 32 V, VGS = 0 V, TJ = 55°C)		IDSS	- -	- -	1 25	μA
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 11 A) (VGS = 4.5 V, ID = 8.8 A)		RDS(on)	- -	- -	6.5 9	mΩ
Diode Forward Voltage(Note 3) (IS = 2.3 A, VGS = 0 V)		VSD	-	0.74	1.2	V
Dynamic(Note 4)						
Total Gate Charge	(VDS = 20 V, VGS = 4.5 V,ID = 11 A)	Qg	-	33.8	-	nC
Gate-Source Charge		Qgs	-	11	-	
Gate-Drain Charge		Qgd	-	11.2	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	4146	-	pF
Output Capacitance		Coss	-	322	-	
Reverse Transfer Capacitance		Crss	-	272	-	
Turn-On Delay Time	(VDS = 20 V, RL = 1.9 Ω,ID = 11 A,VGEN = 10 V, RGEN = 6 Ω)	td(on)	-	22	-	ns
Rise Time		tr	-	36	-	
Turn-Off Delay Time		td(off)	-	210	-	
Fall Time		tf	-	86	-	

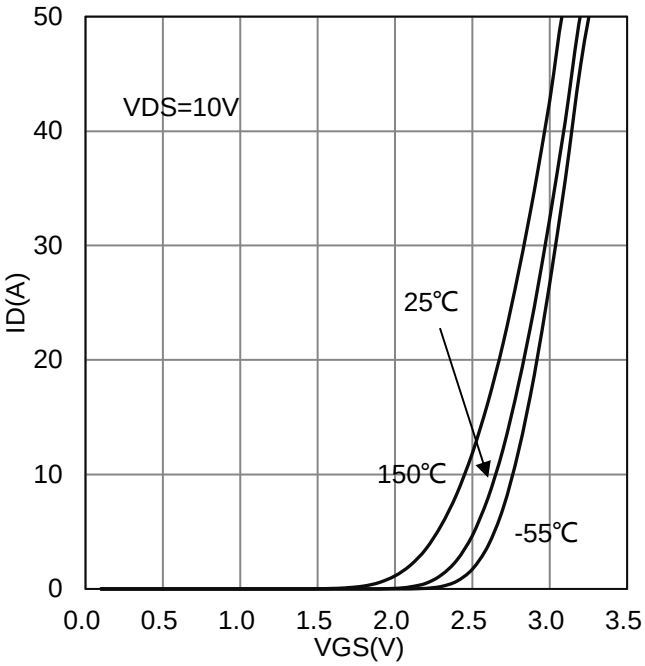
3.Pulse test: PW≤ 300μs duty cycle ≤ 2%.

4.Guaranteed by design, not subject to production testing.

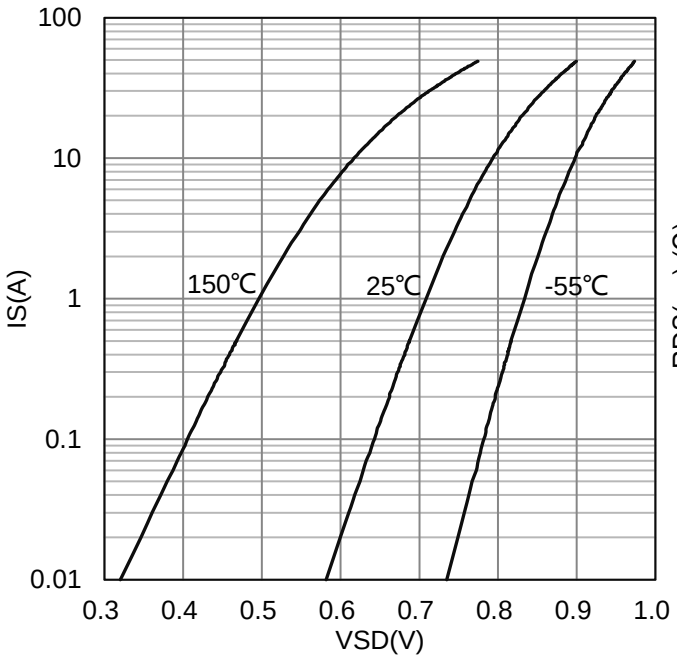
7. ELECTRICAL CHARACTERISTICS CURVES



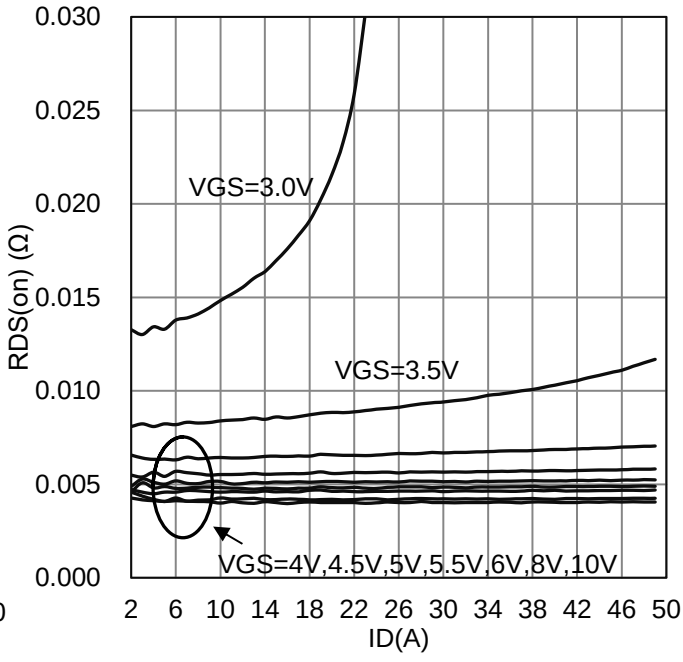
ID vs. VDS



ID vs. VGS

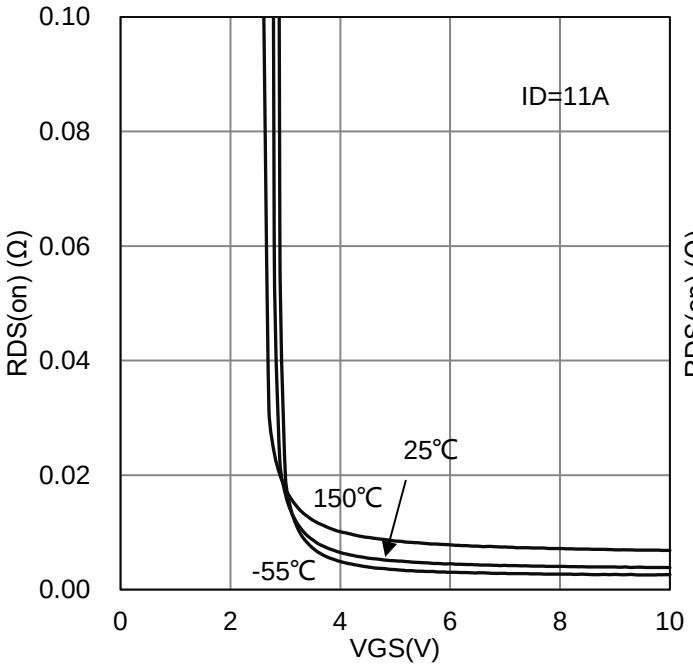


IS vs. VSD

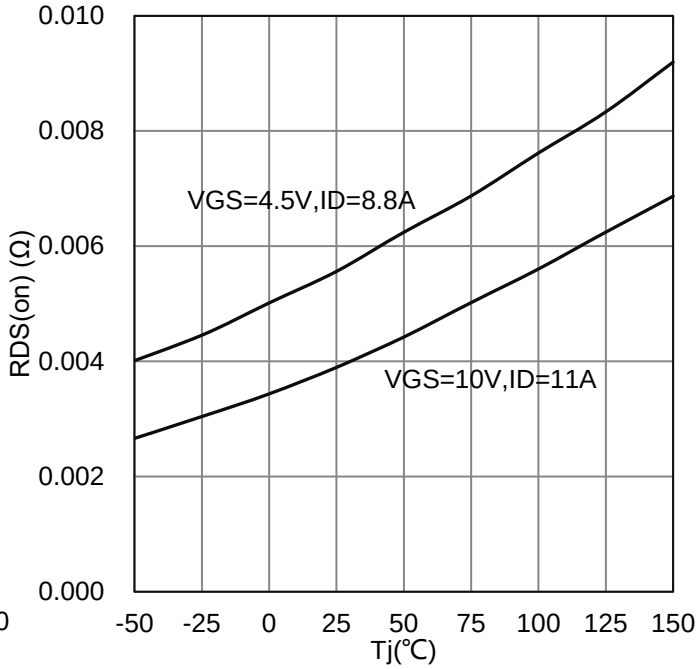


RDS(on) vs. ID

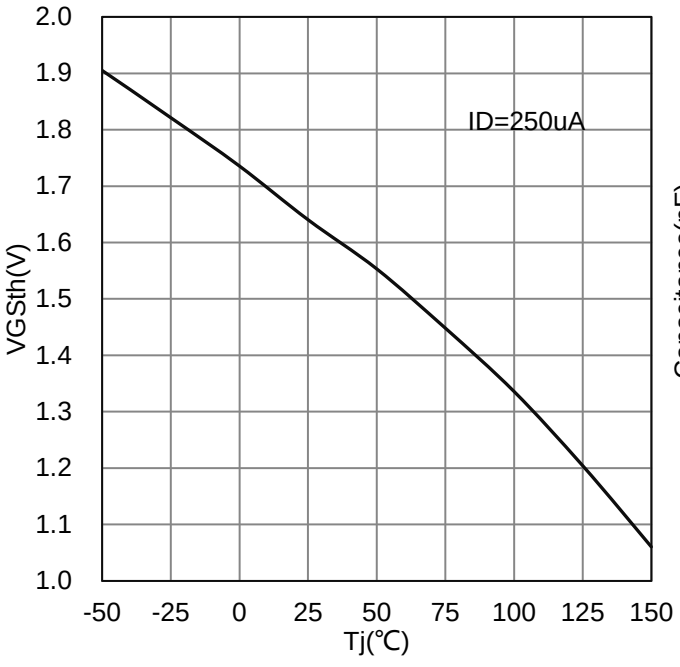
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



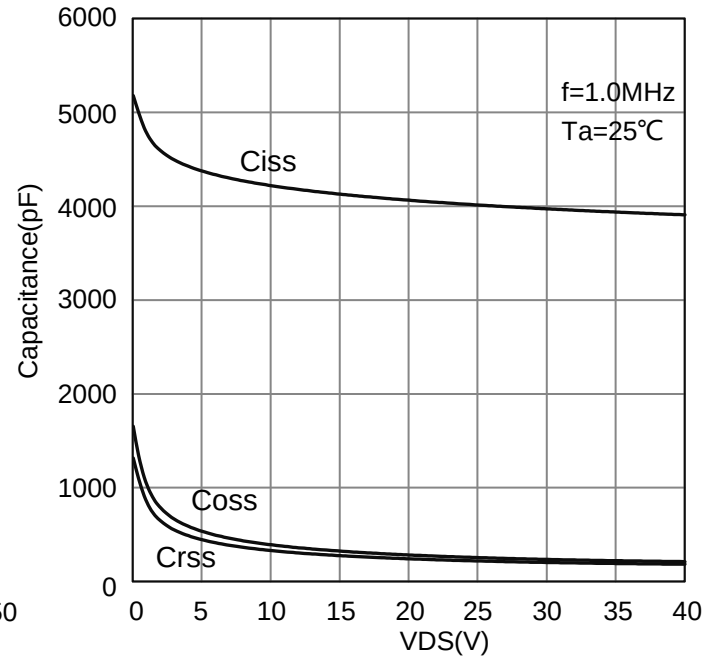
RDS(on) vs. VGS



RDS(on) vs. Tj



VGSth vs. Tj



Capacitance

8.OUTLINE AND DIMENSIONS

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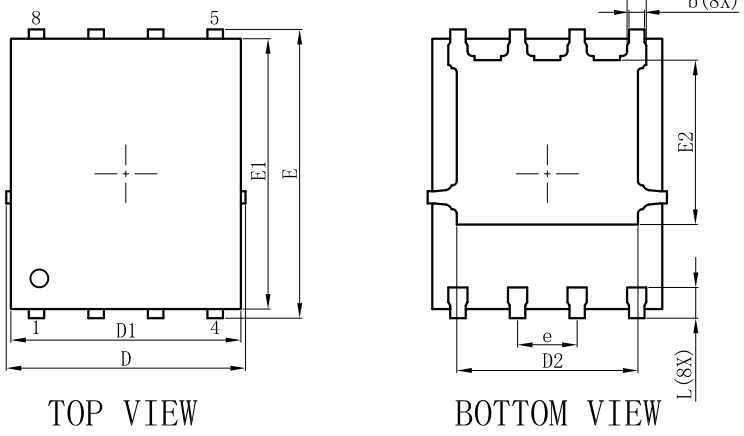
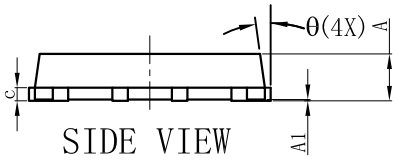


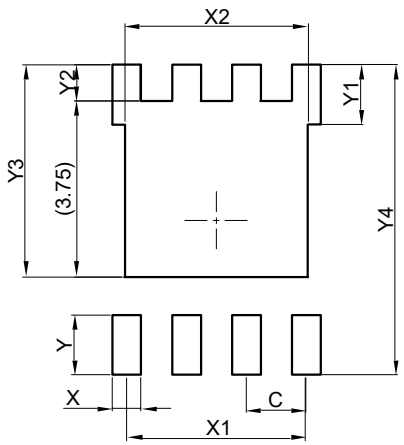
DFN5060-8B			
DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.00	0.02	0.05
E	6.00	6.15	6.30
E1	5.66	5.76	5.86
E2	3.40	3.50	3.60
D	4.95	5.10	5.25
D1	4.80	4.90	5.00
D2	3.76	3.86	3.96
b	0.30	0.35	0.40
B	0.36	0.41	0.46
L	0.56	0.66	0.76
e	1.27BSC		
c	0.254REF.		
θ	0°	-	12°
All Dimensions in mm			



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

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