

LN7910DT1WG

N-Channel Power Trench MOSFET

1. FEATURES

- Advanced Package and Silicon combination for low RDS(on) and high efficiency.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- DC-DC Conversion

3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
LN7910DT1WG	LN7910	3000/Tape&Reel

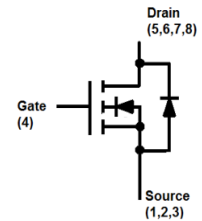
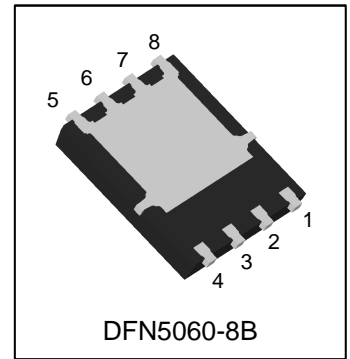
4. MAXIMUM RATINGS(Ta = 25°C)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDS	150	V
Gate-to-Source Voltage		VGS	±20	V
Continuous Drain Current(Note 1)	TC=25°C	ID	60	A
	TC=75°C		53	A
	TA=25°C		12.4	A
	TA=75°C		11	A
Pulsed Drain Current(Note 2)		IDM	48	A
Avalanche Current(L=0.1mH)		IAS	28	A
Avalanche Energy(L=0.1mH)		EAS	39.2	mJ
Power Dissipation(Note 1)	TC=25°C	PD	104	W
	TA=25°C		2.5	
Operating Junction and Storage Temperature Range		Tj/Tstg	-55~+150	°C

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 1)	RθJA	50	°C/W
Maximum Junction-to-Ambient(Note 3)	RθJA	120	
Maximum Junction-to-Case	RθJC	1.2	

- 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.

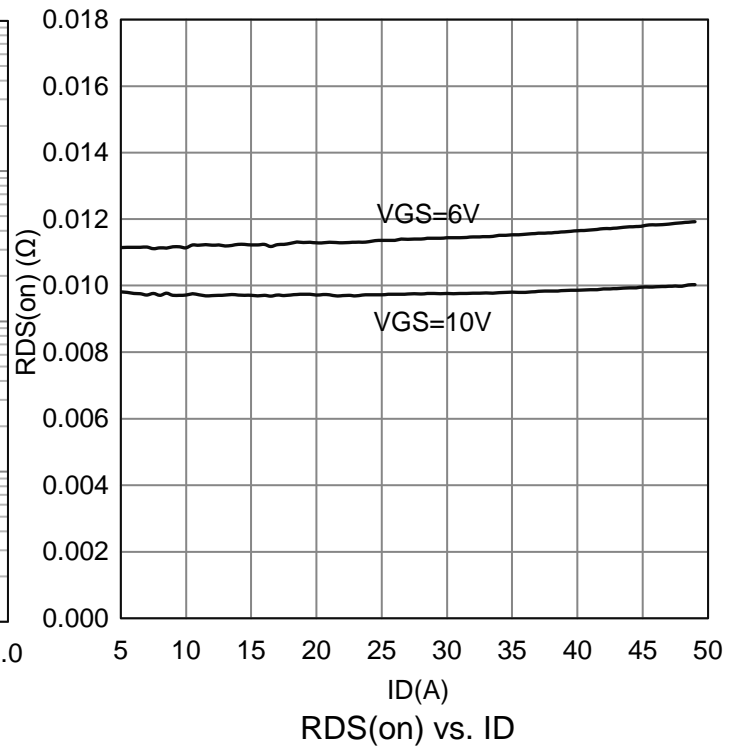
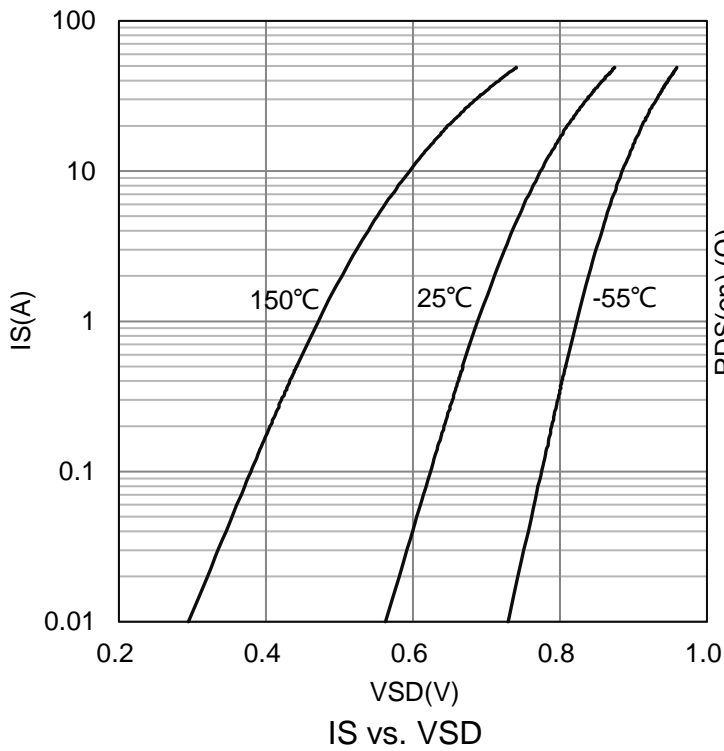
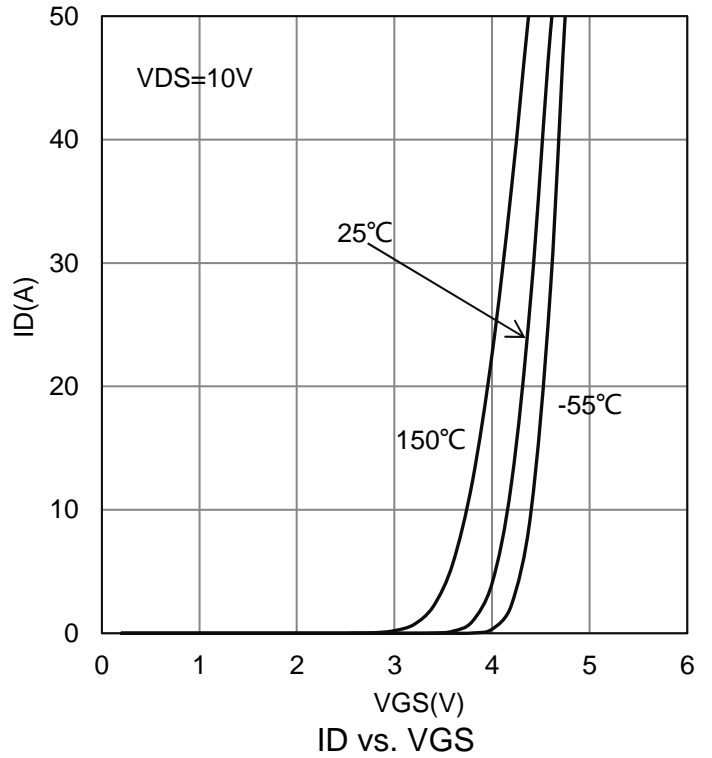
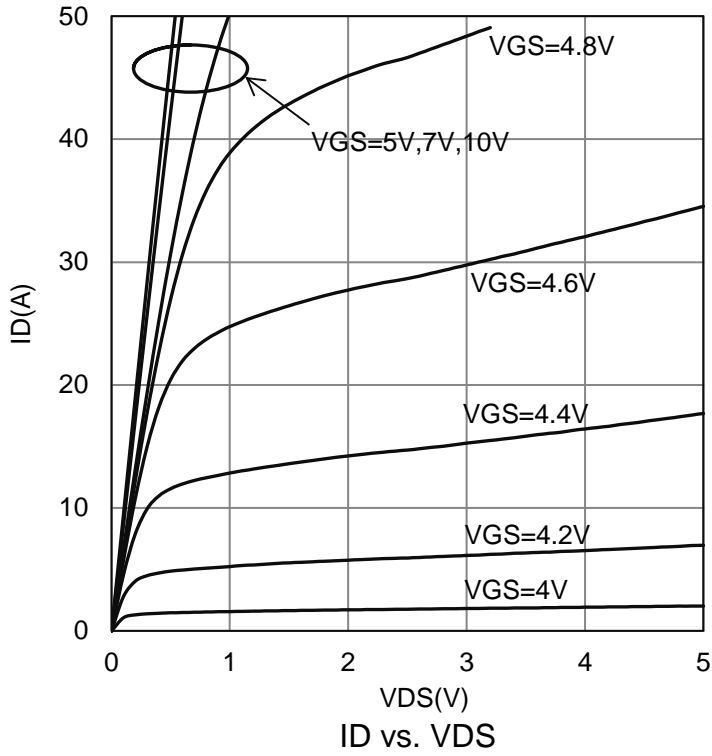


6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

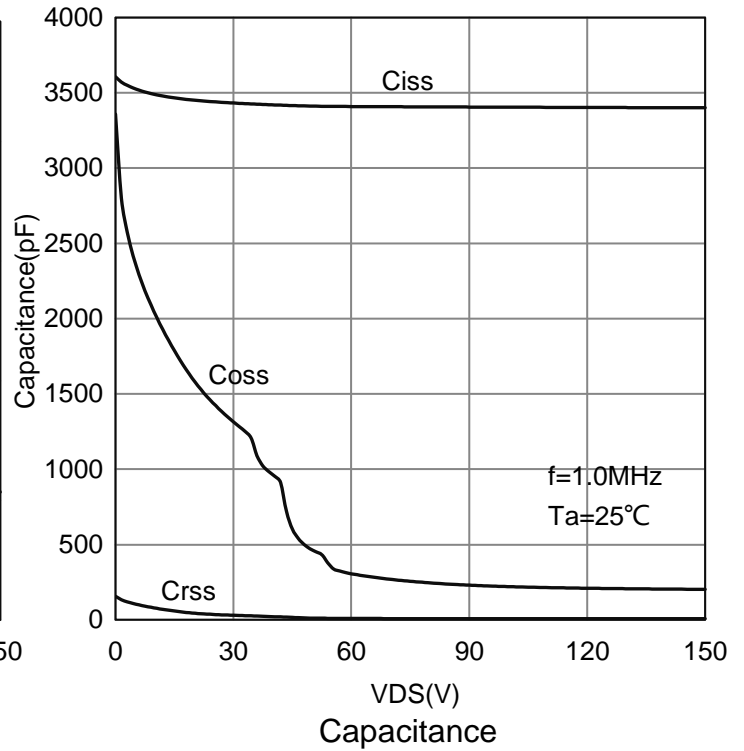
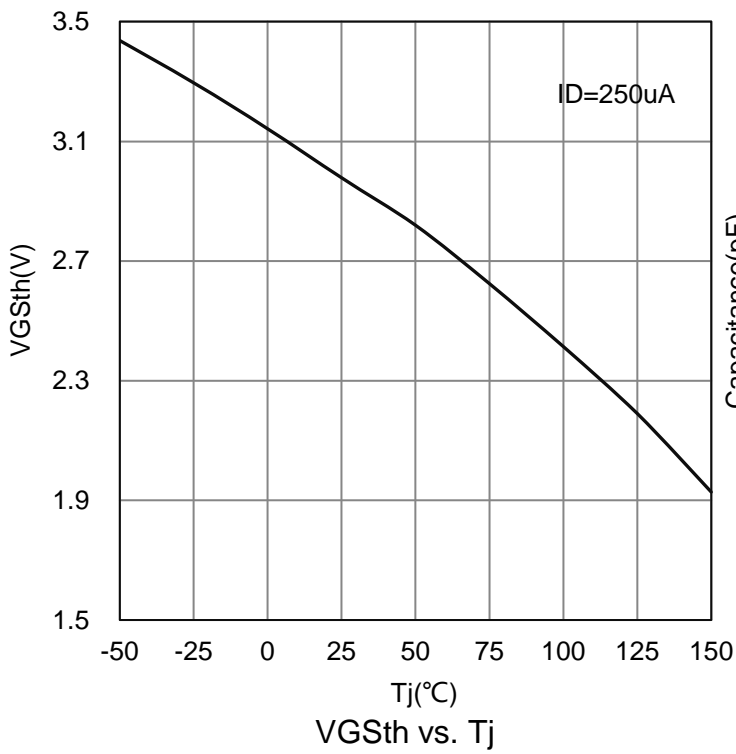
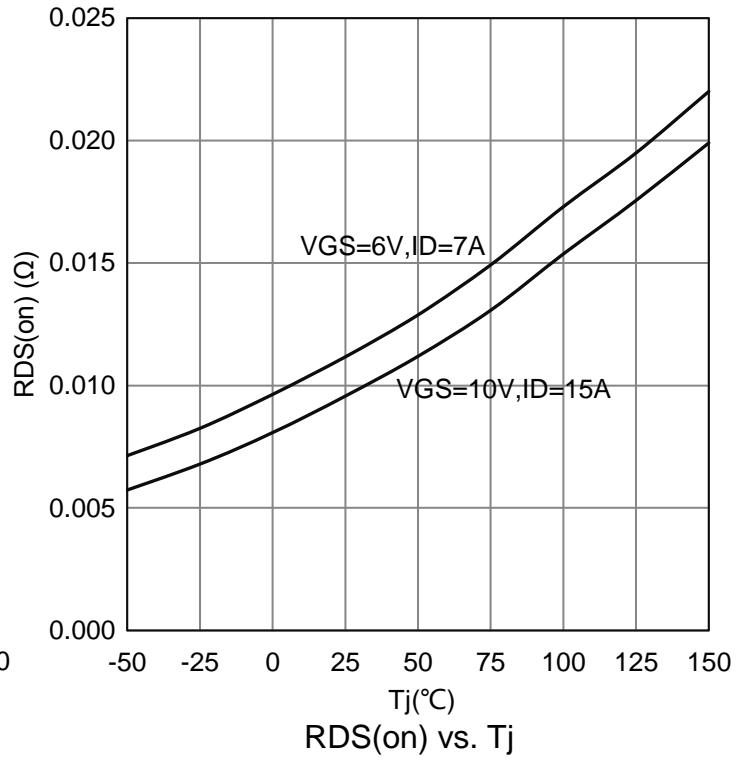
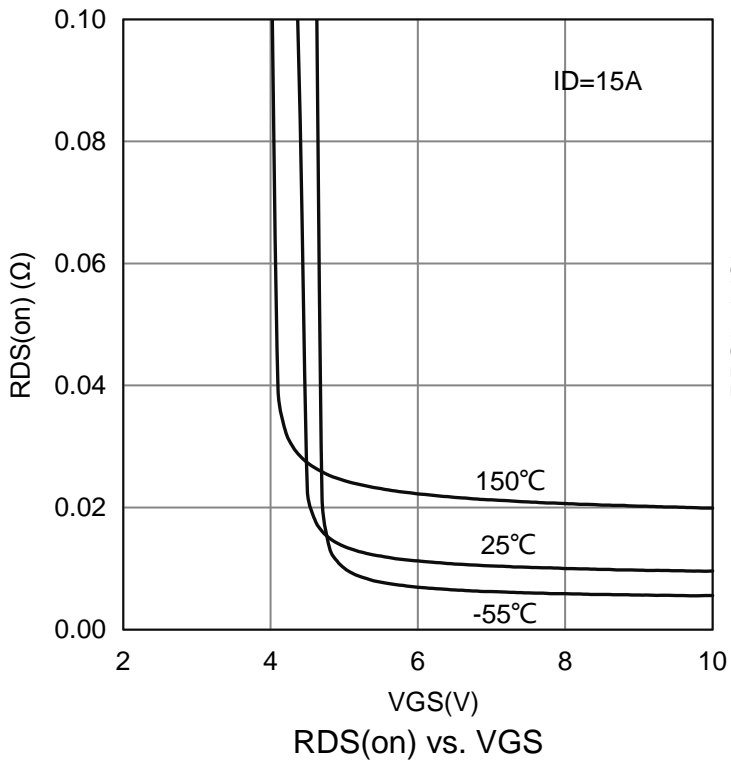
Characteristic	Symbol	Min.	Typ.	Max.	Unit
STATIC					
Drain to Source Breakdown Voltage (VGS = 0V, ID = 250μA)	BVDSS	150	-	-	V
Drain-to-Source Leakage Current (VDS = 120V, VGS = 0V)	IDSS	-	-	1	uA
Gate-Body leakage current (VDS = 0V, VGS = ±20V)	IGSS	-	-	±100	nA
Gate Threshold Voltage (VDS = VGS, ID = 250μA)	VGS(th)	2	3	4	V
Drain-to-Source On-Resistance(Note 4) (VGS = 10 V, ID = 15 A) (VGS = 6 V, ID = 7 A)	RDS(ON)	- -	9.5 11.5	11.5 15	mΩ
DYNAMIC					
Total Gate Charge	Qg	-	42	-	nC
Gate to Source Charge	Qgs	-	13.7	-	
Gate to Drain Charge	Qgd	-	5.7	-	
Turn-on Delay Time	td(on)	-	30	-	nS
Rise Time	tr	-	30	-	
Turn-Off Delay Time	td(off)	-	72	-	
Fall Time	tf	-	37	-	
Input Capacitance	Ciss	-	3407	-	pF
Output Capacitance	Coss	-	256	-	
Reverse Transfer Capacitance	Crss	-	8	-	
Diode Forward Voltage (VGS = 0 V, IS = 20 A)	VSD	-	0.8	1.2	V

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

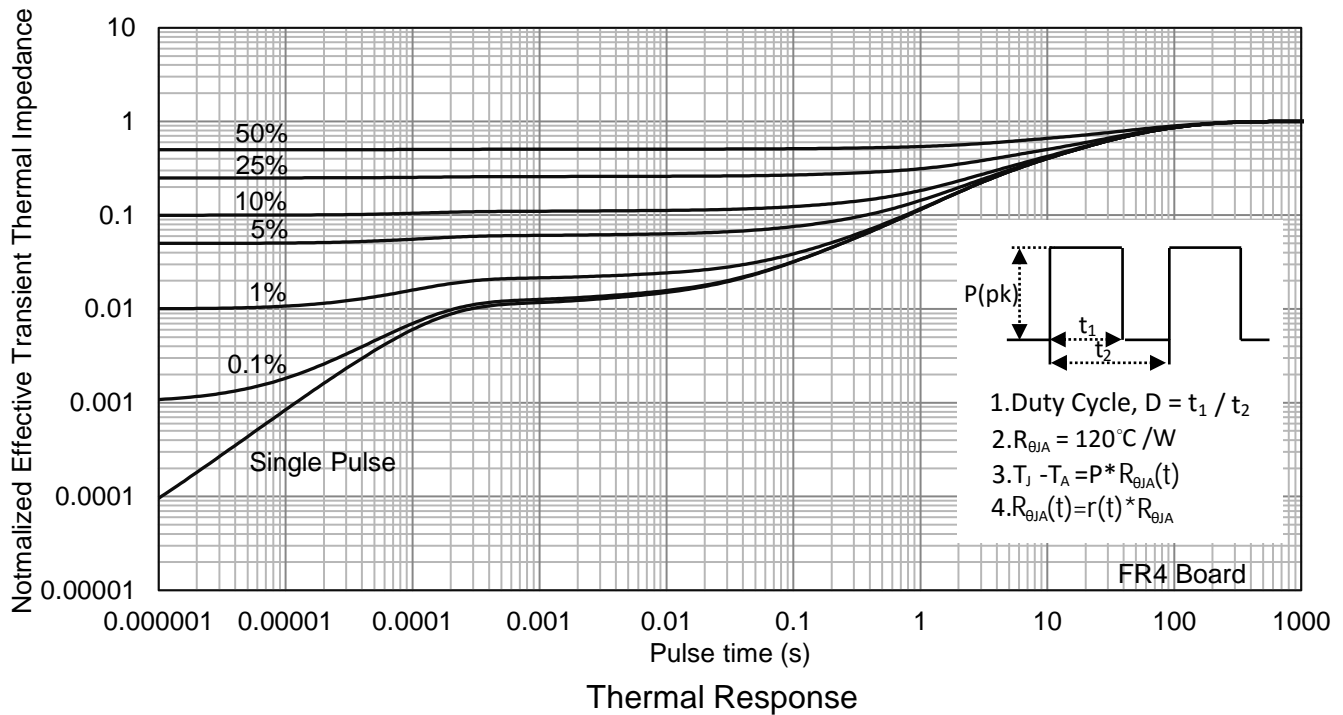
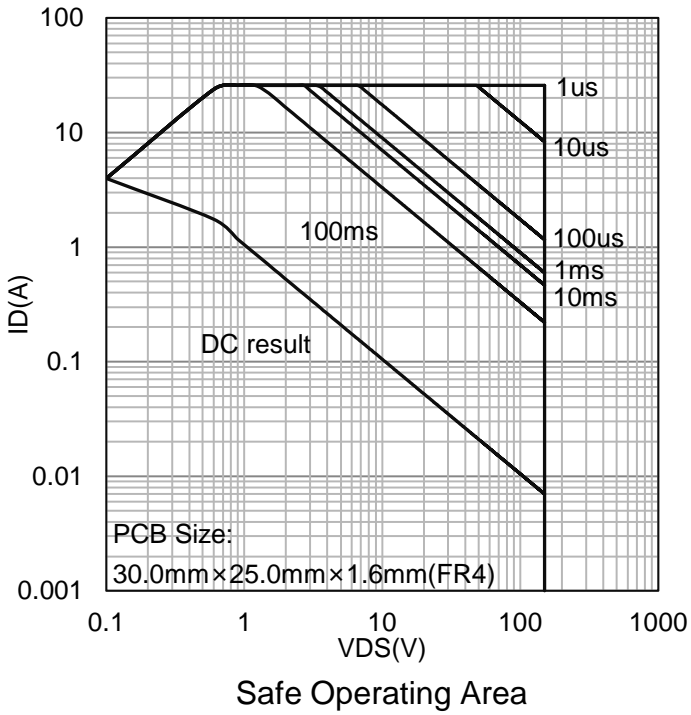
7. ELECTRICAL CHARACTERISTICS CURVES



7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

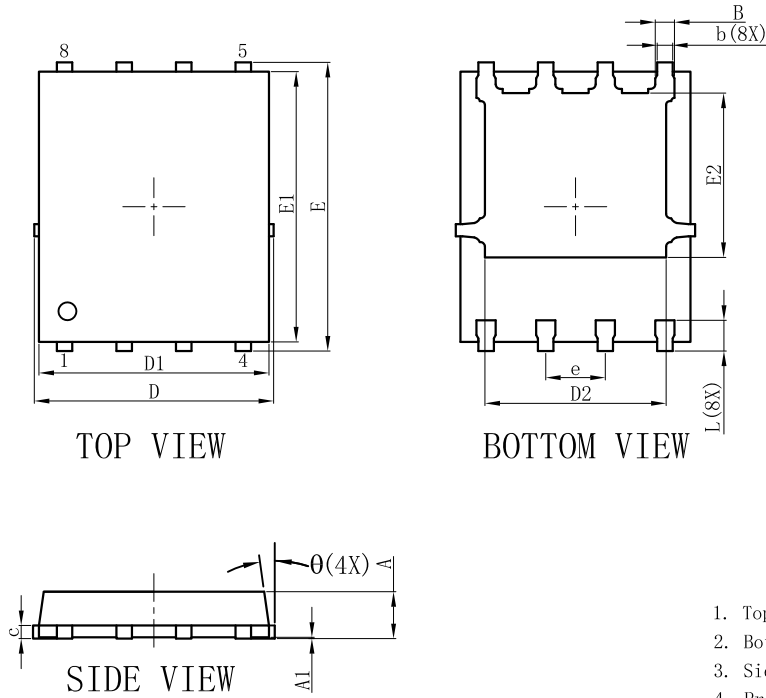


7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



8. OUTLINE AND DIMENSIONS

DFN5060-8B

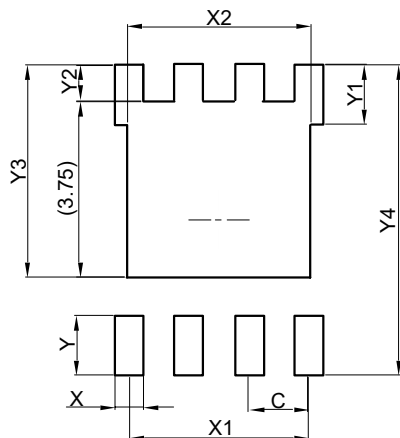


DFN5060-8B			
DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.00	0.02	0.05
E	6.00	6.15	6.30
E1	5.66	5.76	5.86
E2	3.40	3.50	3.60
D	4.95	5.10	5.25
D1	4.80	4.90	5.00
D2	3.76	3.86	3.96
b	0.30	0.35	0.40
B	0.36	0.41	0.46
L	0.56	0.66	0.76
e	1.27BSC		
c	0.254REF.		
θ	0°	-	12°
All Dimensions in mm			

GENERAL NOTES

1. Top package surface finish $Ra0.4 \pm 0.2\mu m$
2. Bottom package surface finish $Ra0.7 \pm 0.2\mu m$
3. Side package surface finish $Ra0.4 \pm 0.2\mu m$
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

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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