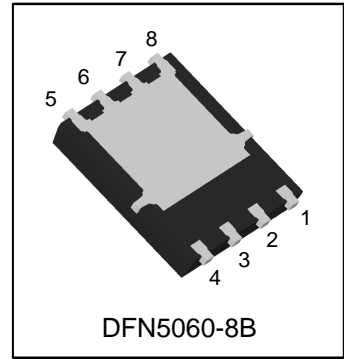


# LN7960DT1WG

## 150V N-Channel Power MOSFET



### 1. FEATURES

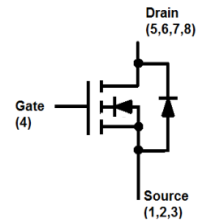
- Low thermal impedance.
- Fast switching.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

### 2. APPLICATIONS

- Power Routing
- DC/DC Conversion
- Motor Drives

### 3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
LN7960DT1WG	LN7960	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)	TA=25°C	ID	5	A
	TA=75°C		4	
	TC=25°C		28	
	TC=75°C		22	
Continuous Drain Current(Note 3)	TA=25°C	IDM	2.5	A
	TA=75°C		1.9	
Pulsed Drain Current (Note 2)		IDM	20	A
Power Dissipation(Note 1)	TA=25°C	PD	2.5	W
	TC=25°C		62.5	
Power Dissipation(Note 3)	TA=25°C		1	
Operating Junction and Storage Temperature Range		Tj/Tstg	-55~+150	°C

### 5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Thermal Resistance,Junction-to-Ambient(Note 1)	RθJA	50	°C/W
Thermal Resistance,Junction-to-Ambient(Note 3)	RθJA	120	
Thermal Resistance,Junction-to-Case	RθJC	2	

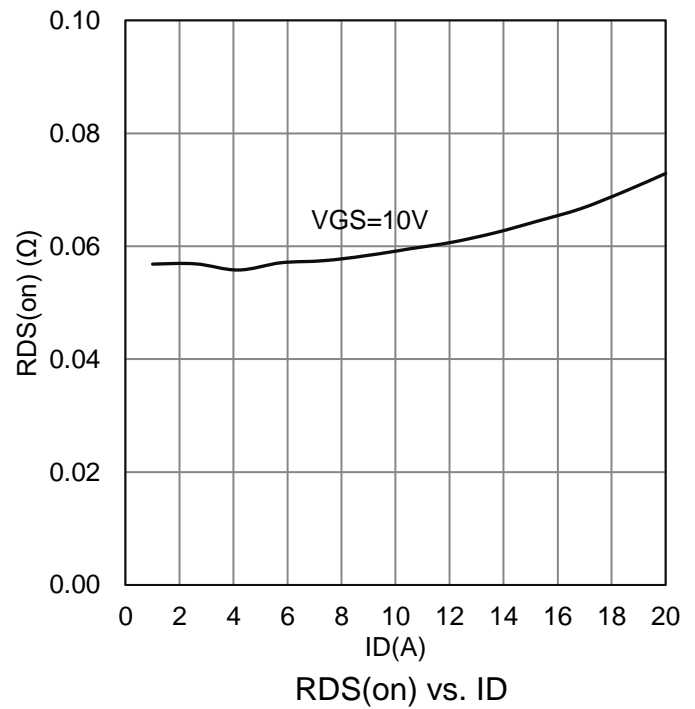
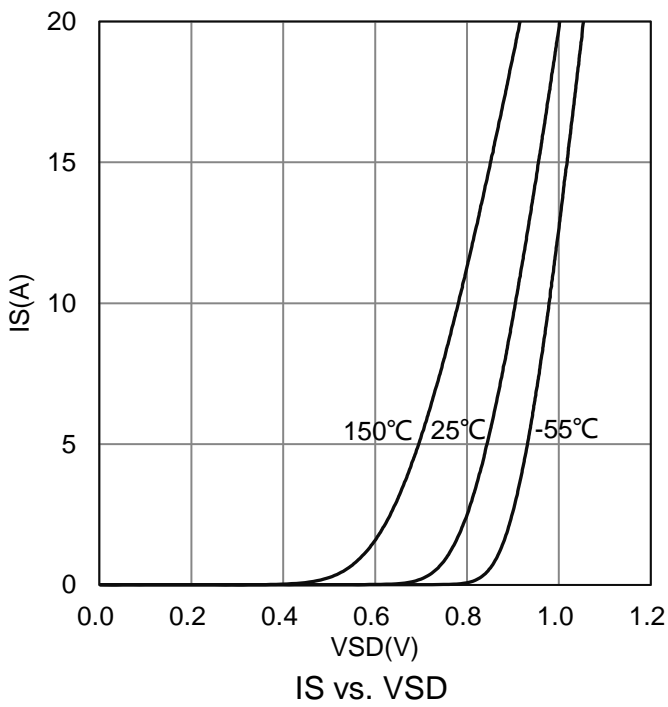
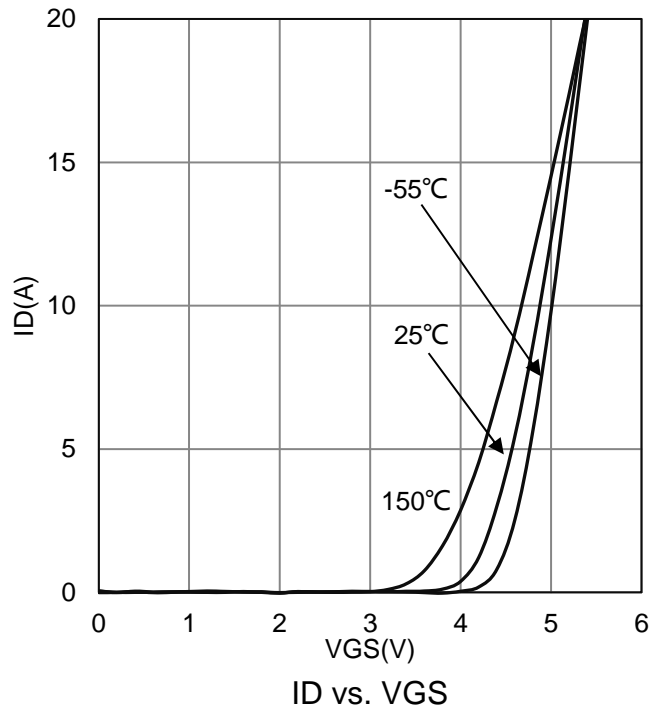
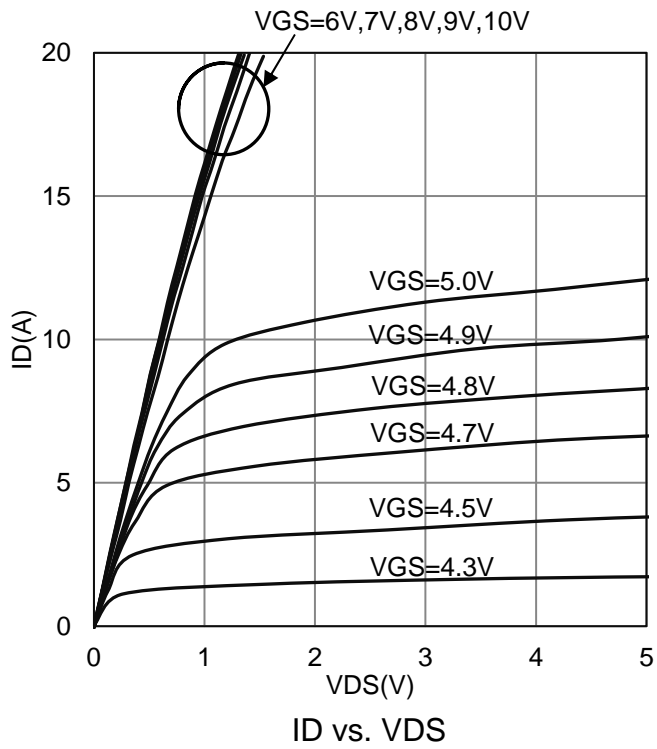
- 1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.
- 2.Pulse width limited by maximum junction temperature.
- 3.Surface mounted on FR4 board using the minimum recommended pad size.

**6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)**

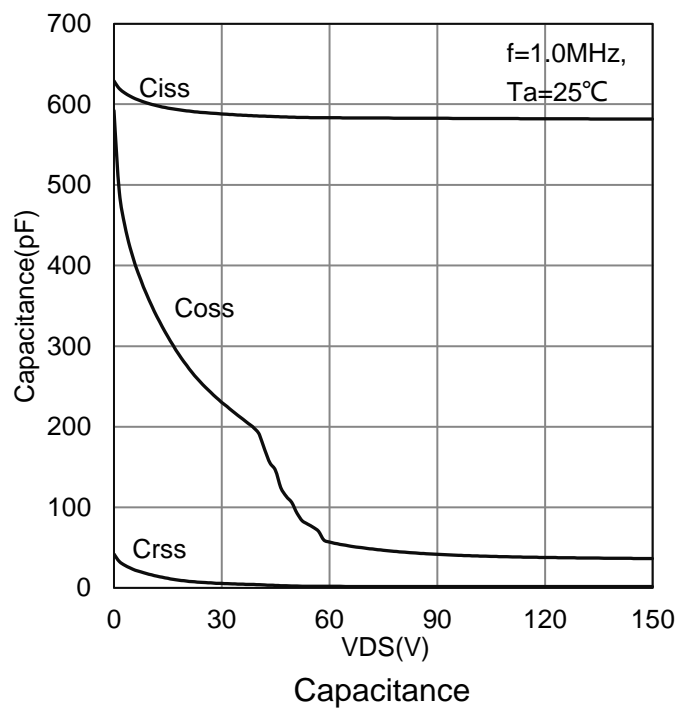
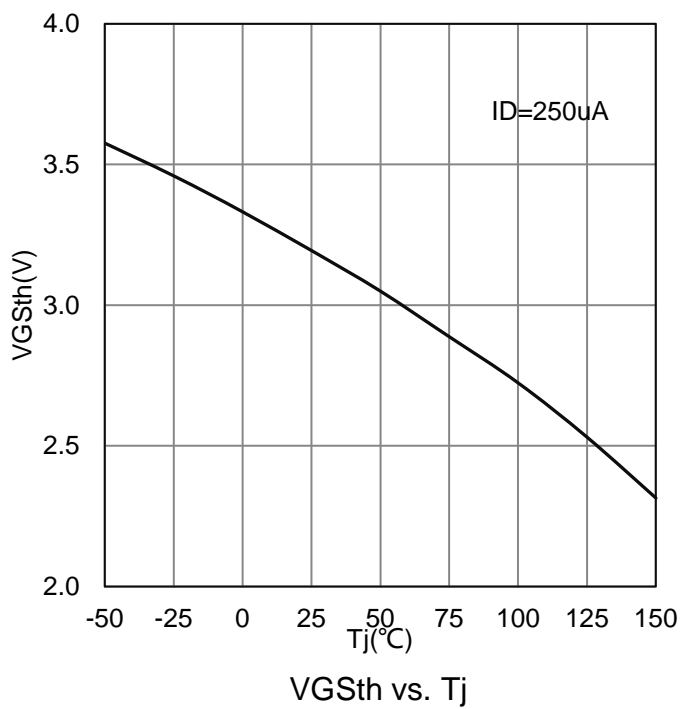
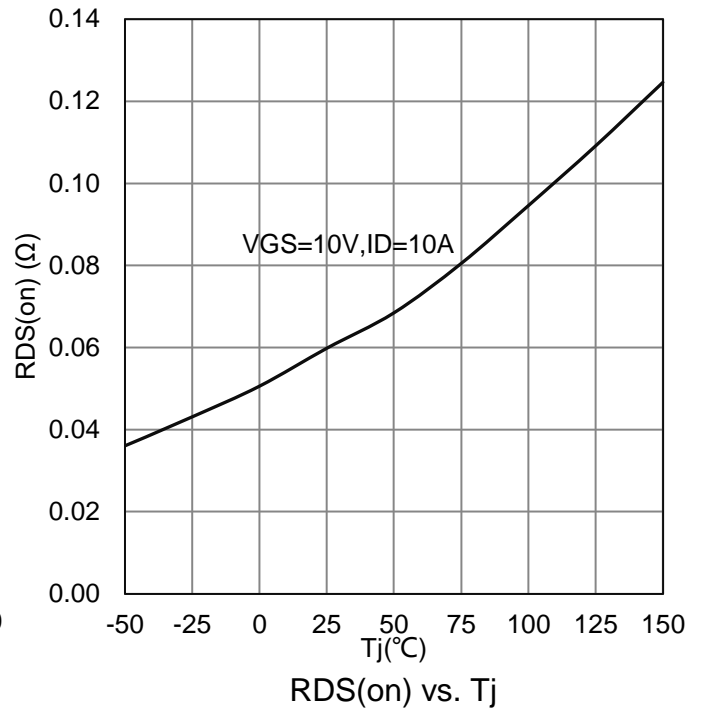
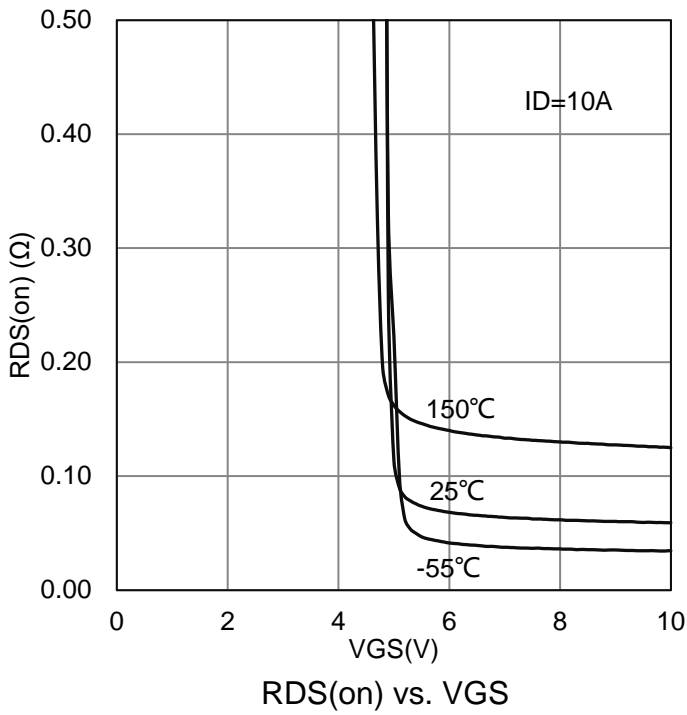
Characteristic	Symbol	Min.	Typ.	Max.	Unit
<b>STATIC</b>					
Drain-Source Breakdown Voltage (VGS = 0 V, ID = 250 $\mu$ A)	V(BR)DSS	150	-	-	V
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 $\mu$ A)	VGS(th)	2	3	4	V
Gate-Body Leakage (VDS = 0 V, VGS = $\pm$ 20 V)	IGSS	-	-	$\pm$ 100	nA
Zero Gate Voltage Drain Current (VDS = 150 V, VGS = 0 V)	IDSS	-	-	1	$\mu$ A
Drain-Source On-Resistance(Note 4) (VGS = 10 V, ID = 10 A)	RDS(on)	-	60	75	m $\Omega$
Forward Voltage (IS= 18 A, VGS = 0 V)	VSD	-	-	1.2	V
<b>DYNAMIC</b>					
Input Capacitance	VDS = 75 V, VGS = 0V, f = 1MHz)	Ciss	-	583	pF
Output Capacitance		Coss	-	47	
Reverse Transfer Capacitance		Crss	-	1.8	
Total Gate Charge	VDS = 75 V, VGS = 10 V, ID = 10 A)	Qg	-	10	nC
Gate-Source Charge		Qgs	-	4.5	
Gate-Drain Charge		Qgd	-	3.4	
Turn-On Delay Time	(VDS = 75 V, RL = 7.5 $\Omega$ , VGS = 10 V, ID = 10 A, RG = 10 $\Omega$ )	td(on)	-	10	ns
Rise Time		tr	-	5.5	
Turn-Off Delay Time		td(off)	-	17	
Fall Time		tf	-	5.5	

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

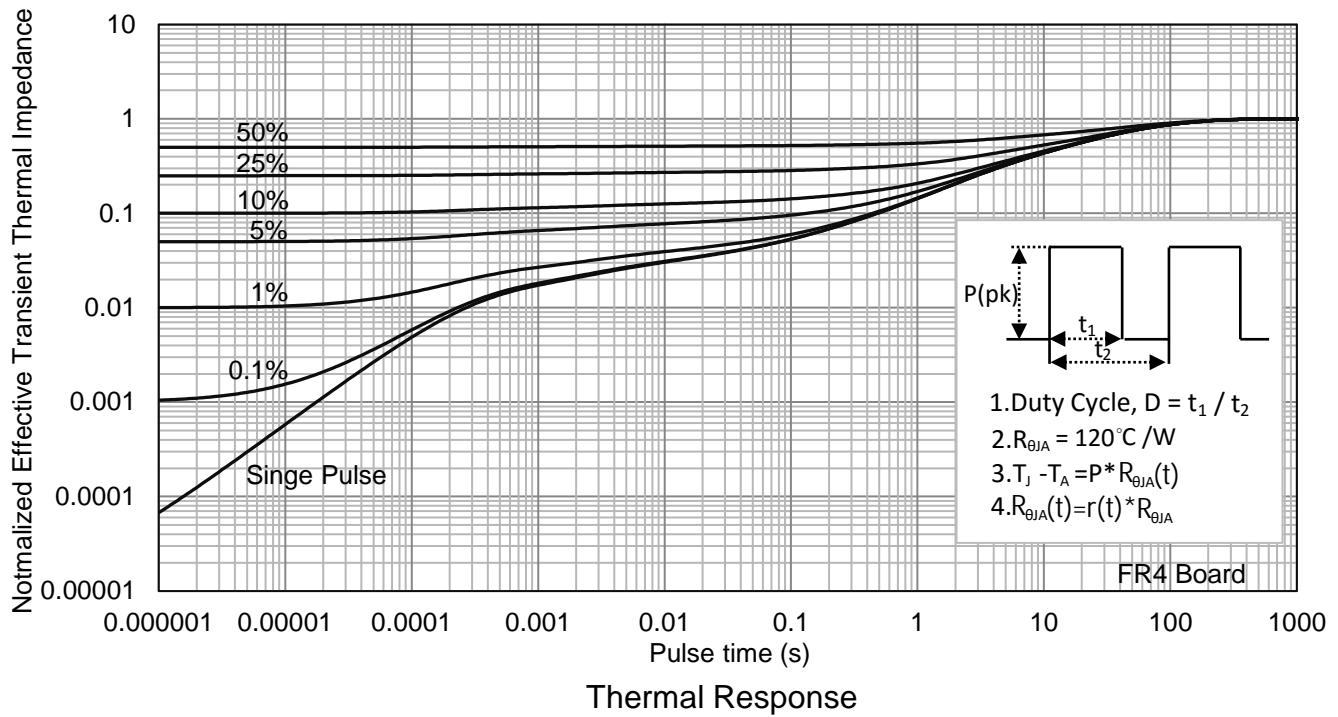
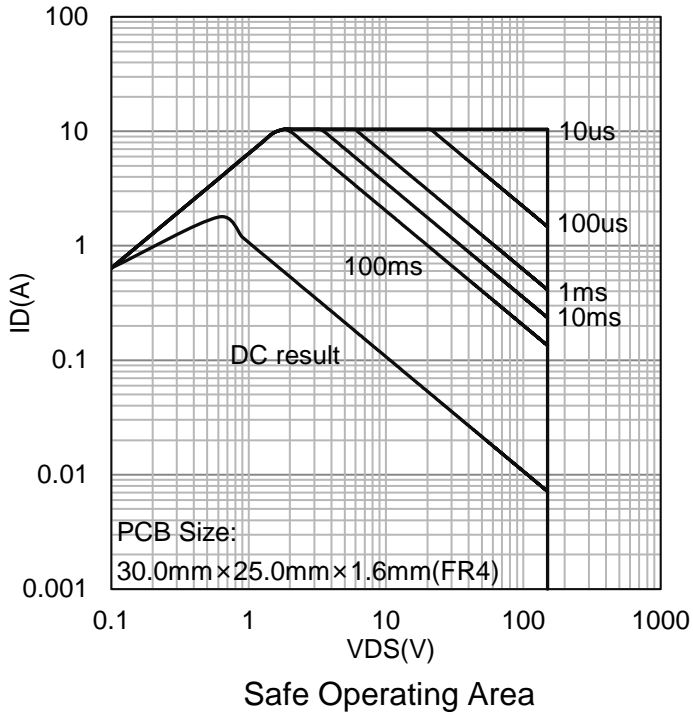
### 7. ELECTRICAL CHARACTERISTICS CURVES



### 7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

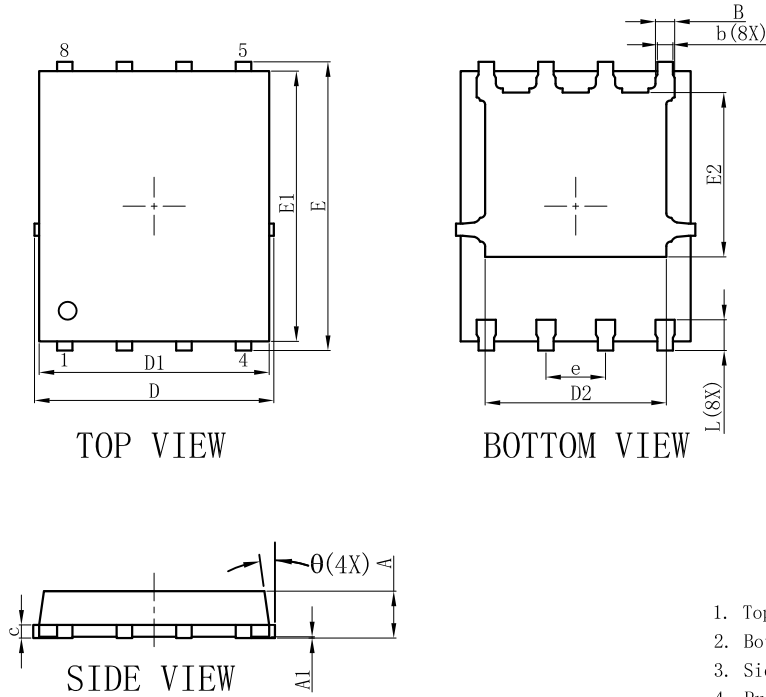


**7. ELECTRICAL CHARACTERISTICS CURVES(Con.)**



### 8. OUTLINE AND DIMENSIONS

DFN5060-8B

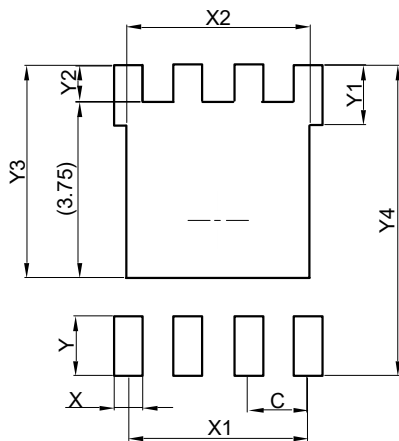


DFN5060-8B			
DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.00	0.02	0.05
E	6.00	6.15	6.30
E1	5.66	5.76	5.86
E2	3.40	3.50	3.60
D	4.95	5.10	5.25
D1	4.80	4.90	5.00
D2	3.76	3.86	3.96
b	0.30	0.35	0.40
B	0.36	0.41	0.46
L	0.56	0.66	0.76
e	1.27BSC		
c	0.254REF.		
θ	0°	-	12°
All Dimensions in mm			

GENERAL NOTES

1. Top package surface finish Ra0.4±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

## **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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