

N76042ND

100V N-Channel Enhancement Mode MOSFET

1. FEATURES

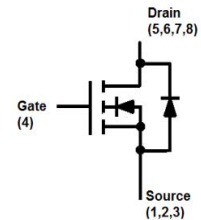
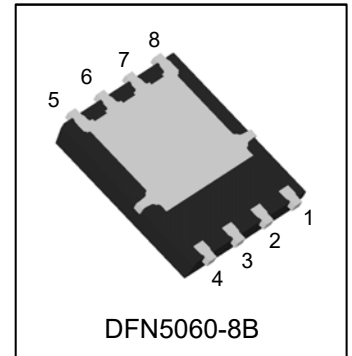
- 100V N-Channel MOSFET.
- $R_{DS(ON)} \leq 4.2m\Omega @ V_{GS}=10V$.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- DC-DC Conversion

3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
N76042ND	LN76042N	3000/Tape&Reel



4. MAXIMUM RATINGS(Ta = 25°C)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDS	100	V
Gate-to-Source Voltage		VGS	±20	V
Continuous Drain Current(Note 1)	TA=25°C	ID	21	A
	TA=100°C		16	
	TC=25°C		120	
	TC=100°C		92	
Pulsed Drain Current(Note 2)		IDM	84	A
Avalanche Current(L=0.1mH)		IAS	51	A
Avalanche Energy(L=0.1mH)		EAS	130.05	mJ
Power Dissipation(Note 1)	TA=25°C	PD	2	W
	TC=25°C		62.5	
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	60	°C/W
Thermal Resistance,Junction-to-Ambient(Note 3)	RθJA	121.5	
Thermal Resistance,Junction-to-Case	RθJC	2	

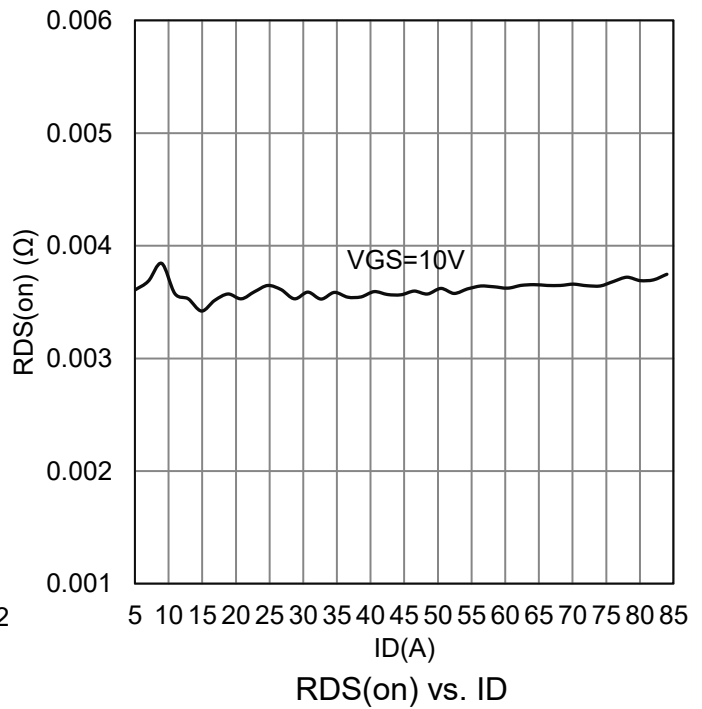
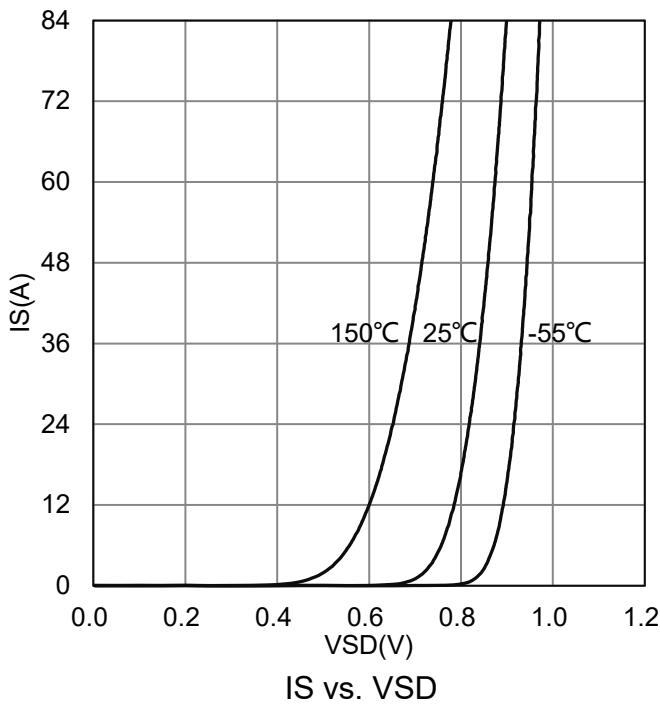
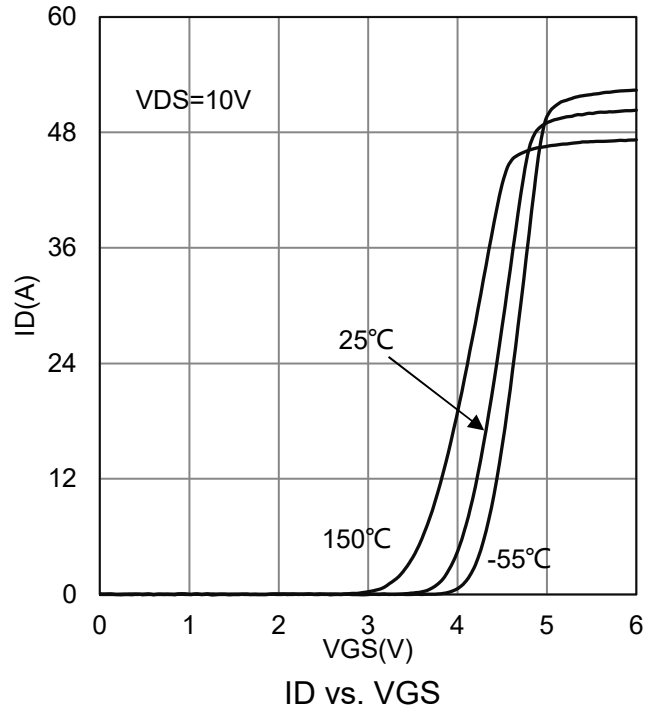
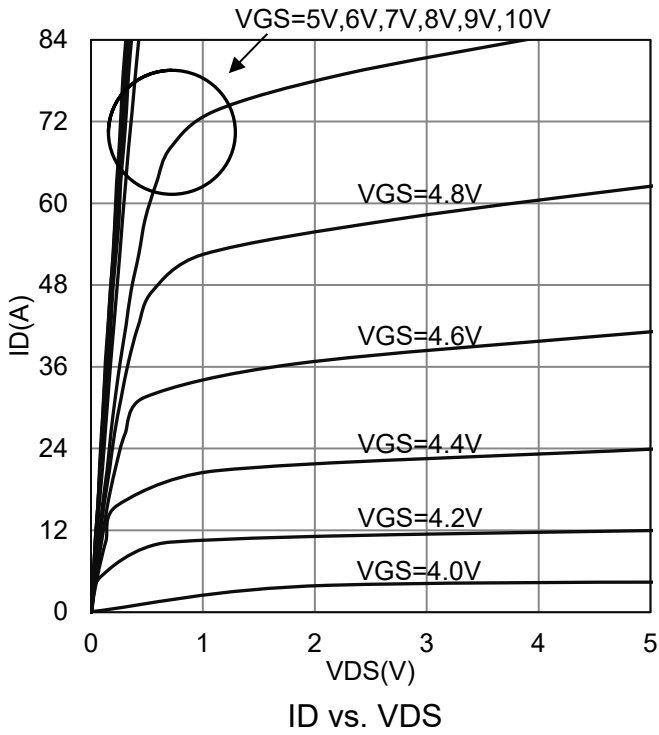
- 1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.
- 2.Pulse width limited by maximum junction temperature.
- 3.Surface mounted on FR4 board using the minimum recommended pad size.

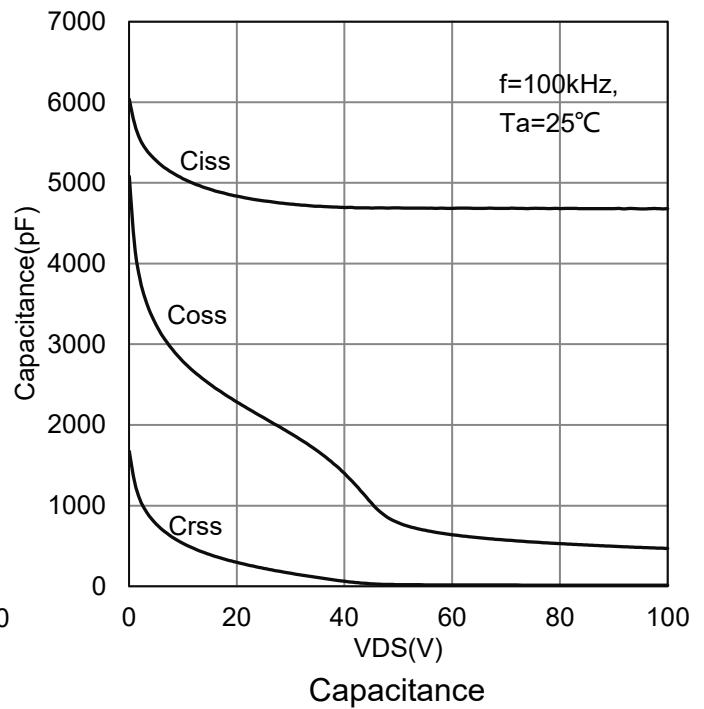
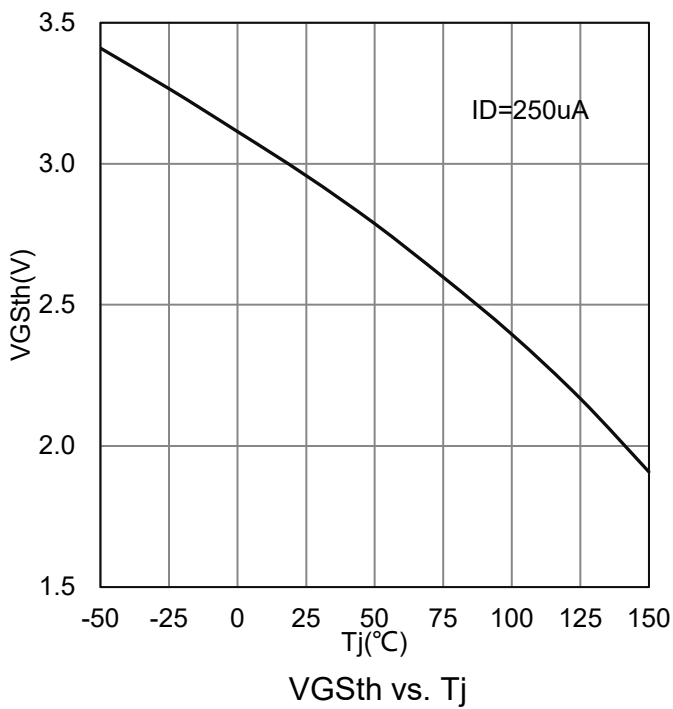
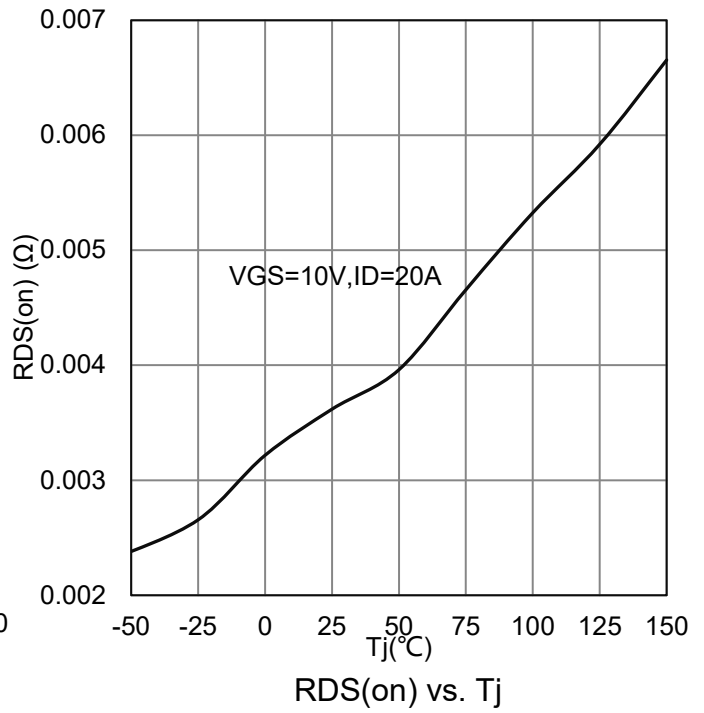
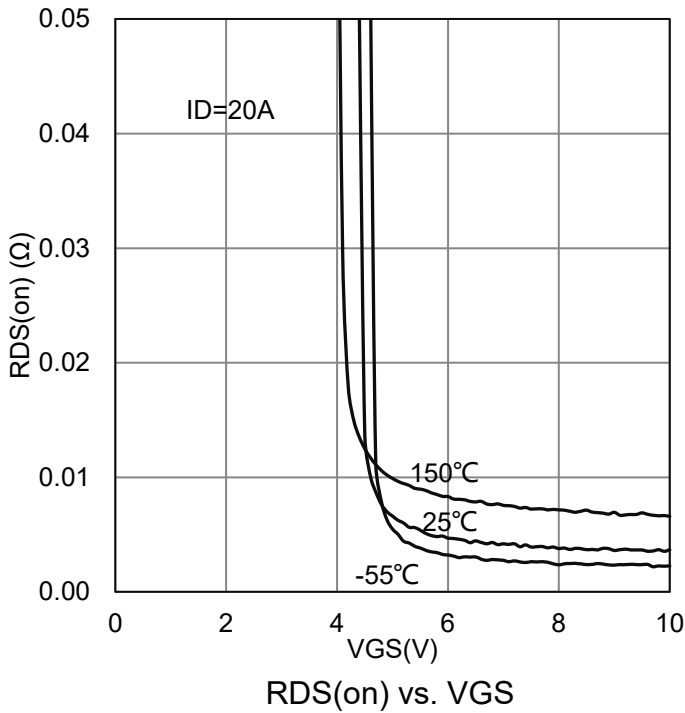


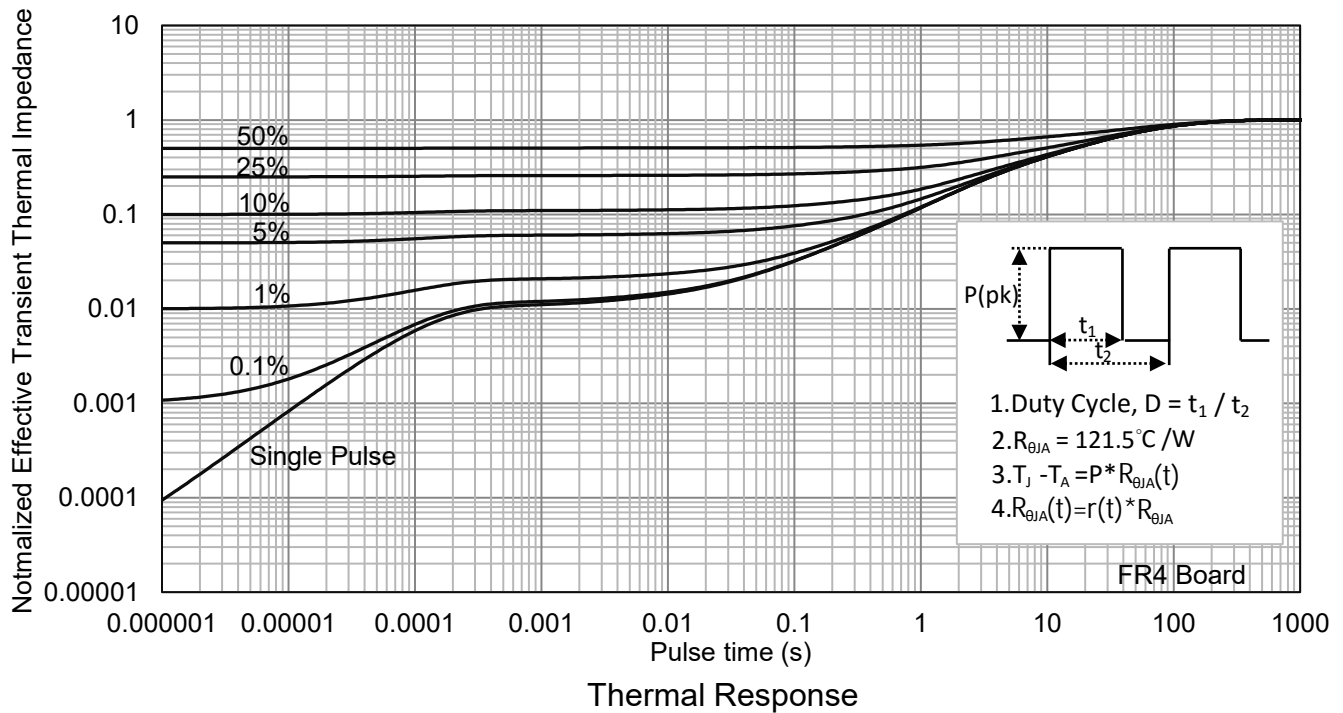
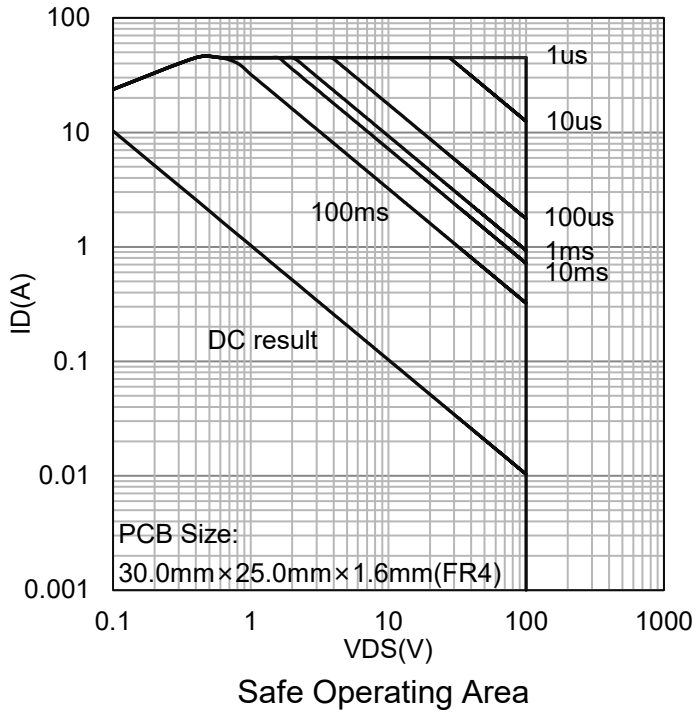
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

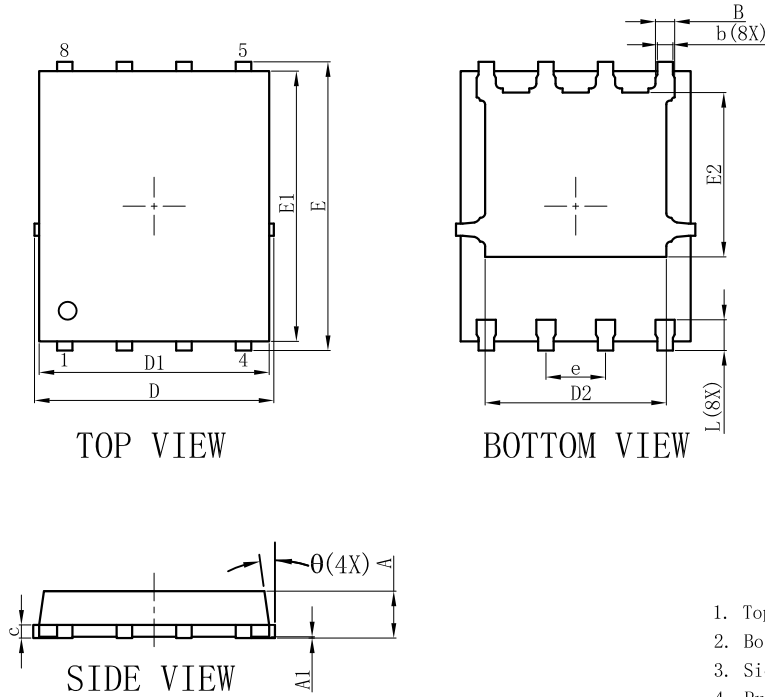
Characteristic	Symbol	Min.	Typ.	Max.	Unit
STATIC					
Drain-Source Breakdown Voltage (VGS = 0 V, ID = 250 μA)	BVDSS	100	-	-	V
Gate-Source Threshold Voltage (VDS = VGS, ID = 250 μA)	VGS(th)	2	3	4	V
Gate-Body leakage current (VDS = 0 V, VGS = ±20 V)	IGSS	-	-	±100	nA
Drain-Source Leakage Current (VGS = 0 V, VDS = 100 V)	IDSS	-	-	1	μA
Drain-to-Source On-Resistance (VGS = 10 V, ID = 20 A)	RDS(ON)	-	3.4	4.2	mΩ
DYNAMIC					
Total Gate Charge	(VDD = 50 V, ID= 20 A, VGS = 10 V)	Qg	-	80.5	nC
Gate to Source Charge		Qgs	-	18	
Gate to Drain Charge		Qgd	-	25	
Input Capacitance	(VGS = 0 V, VDS = 50 V, f= 100kHz)	Ciss	-	4690	pF
Output Capacitance		Coss	-	786	
Reverse Transfer Capacitance		Crss	-	19	
Turn-on Delay Time	(VDD = 50 V, ID = 20 A, VGS = 10 V, RGEN = 6Ω)	td(on)	-	26	nS
Rise Time		tr	-	76	
Turn-Off Delay Time		td(off)	-	76	
Fall Time		tf	-	102	
Diode Forward Voltage (IS =20A, VGS =0V)	VSD	-	-	1.2	V



7. ELECTRICAL CHARACTERISTICS CURVES


7. ELECTRICAL CHARACTERISTICS CURVES(Con.)


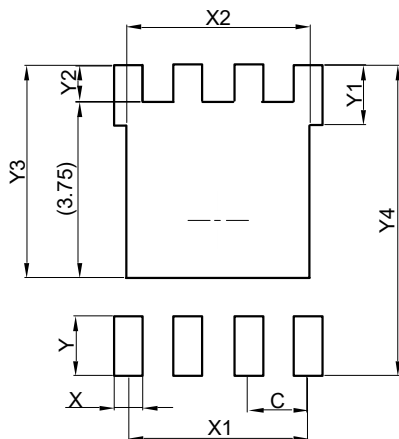
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)


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

