XINLUDA®
WWW.XINLUDA.COM 信路达

XL4514 SOP24/XD4514 DIP-24
XD74HC4514Z DIP窄24/XD14514 DIP-24

High-Voltage Types (20-Volt Rating)
XL4514 Output "High" on Select
XD4514 Output "Low' on Select

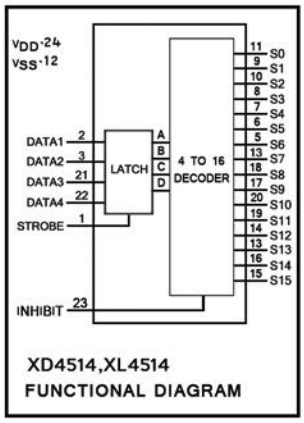
■ XL4514 and -XD4514 consist of a 4-bit :strobed latch and a 4-t0- 16-ine decoder. The latches hold the last input datapresented prior to the strobe tr ansition from1 to 0. Inhibit control allows all outputs tobe placed at 0(XL4514) or 1(XD4514) regardless of the state of the data or strobe inputs.
The decode truth table indicates all combinations of data inputs and appropriate selected outputs.
These devices are similar to industry types XL4514 and XD4514.

Features:

- Steobed input latch
- Inhibit control
- 100% tested for quiescent current at 20V
- Maximum input current of 1 μA at 18V over full package-temperature range; 100 nA at 18V and 25°C
- Noise margin(over full package temperature range):
  1V at V_{DD} = 5V
  1V at V_{DD} = 10V
  2.5V at V_{DD} = 15V
- 5-V,10-V,and 15-V parametric ratings
- Standardized,symmetrical output characteristics
- Meets all requirements of JEDEC tentative Standard No. 13B;"Standard Specifications fot Description of `B'Series CMOS Devives"

Applications:

- Digital multiplexing
- Address decoding
- Hexadecimal/BCD decoding
- Program-counter decoding
- Control decoder



XD4514,XL4514
FUNCTIONAL DIAGRAM

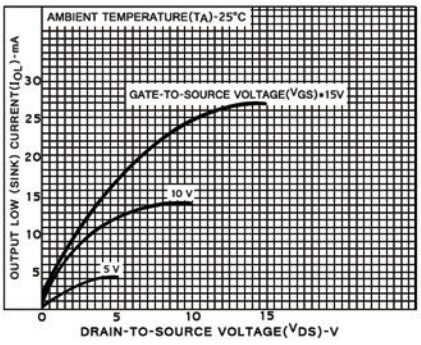


Fig.1-Typical output low (sink) current characteristics.

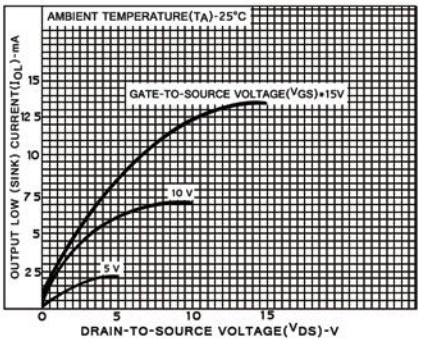


Fig. 2-Minimum output low (sink) current characteristics

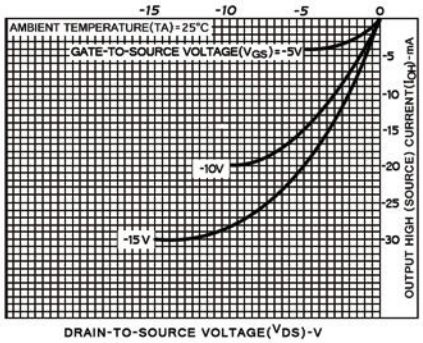


Fig.3-Typical output high (source) current characteristics.

MAXIMUM RATINGS,Absolute-Maximum Values:

DC SUPPLY-VOLTAGE RANGE,(V_{DD})
Voltages referenced to V_{SS} Terminal ..... -0.5Vto+20V
INPUT VOLTAGE RANGE,ALL INPUTS ..... -0.5VtoV_{DD}+0.5V
DC INPUT CURRENT,ANY ONE INPUT ..... ±10mA
POWER DISSIPATION PER PACKAGE(P_D):
ForT_A=-55°C to+100°C 500mW
ForT_A=+100°C to+125°C ..... Derate Linearity at 12mW/°C to 200mW
DEVICE DISSIPATION PER OUTOUT TRANSISTOR
ForT_A=FULL PACKAGE-TEMPERATURE RANGE(All Package Types)..... 100mW
OPERATING-TEMP-TEMPERATURE RANGE(T_A) ..... -55°C to+125°C
STORAGE TEMPERATURE RANGE(T_{stg}) ..... -65°C to+150°C
LEAD TEMPERATURE(DURING SOLDERING):
At distance 1/16 ± 1-32 inch(1.59 ± 0.79mm)from casefor 10s max ..... +265°C

RECOMMENDED OPERATING CONDITIONS at T_A=25°C,Except as Noted.
For maximum reliability,nominal operating conditions should be selected to that operation is always within the fpllowing ranges:

CHARACTERISTIC	VDD (V)	LIMITS		UNITS
		Min.	Max.	
Supply-Voltage Range(ForT_A=Full Pack age-Temperature Range)		3	18	V
Data Setup Time,t_S	5 10 15	150 70 40	- - -	ns
Strobe Pulse Width,t_W	5 10 15	250 100 25	- - -	ns

STATIC ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	CONDITIONS			LIMITS AT INDICATED TEMPERATURES (°C)							UNITS
								+25			
	VO (V)	VN (V)	VDD (V)	-55	-40	+85	+125	Min	Typ	Max	
Quiescent Device Current, I_{DD} Max	-	0,5	5	5	5	150	150	-	0.04	5	μA
	-	0,10	10	10	10	300	300	-	0.04	10	
	-	0,15	15	20	20	600	600	-	0.04	20	
	-	0,20	20	100	100	2000	3000	-	0.08	100	
Qutput Low (Sink)Current I_{OL} Min	0.4	0,5	5	0.64	0.61	0.42	0.36	0.51	1	-	mA
	0.5	0,10	10	1.6	1.5	1.1	0.9	1.3	2.6	-	
	1.5	0,15	15	4.6	4	2.8	2.4	3.4	6.8	-	
Output High (Source) Current I_{OL} Min	4.6	0,5	5	-0.64	-0.61	-0.42	-0.36	-0.51	-1	-	
	2.5	0,5	5	-2	-1.8	-1.3	-1.15	-1.6	-3.2	-	
	9.5	0,10	10	-1.6	-1.5	-1.1	-0.9	-1.3	-2.6	-	
	13.5	0,15	15	-4.2	-4	-2.8	-2.4	-3.4	-6.8	-	
Output Voltage: Low-level, V_{OI} Max	-	0,5	5	0.05				-	0	0.05	V
	-	0,10	10	0.05				-	0	0.05	
	-	0,15	15	0.05				-	0	0.05	
Qutout Voltage: High-Level, V_{OH} Min	-	0,5	5	4.95				4.95	5	-	
	-	0,10	10	9.95				9.95	5	-	
	-	0,15	15	14.95				14.95	15	-	
Input Low Voltage, V_{IL} Max	0.5,4.5	-	5	1.5				-	-	1.5	V
	1,5	-	10	3				-	-	3	
	1.5,13.5	-	15	4				-	-	4	
Input High Voltage, V_{IH} Min	0.5,4.5	-	5	3.5				3.5	-	-	
	1,9	-	10	7				7	-	-	
	1.5,13.5	-	15	11				11	-	-	
Input Current I_{IN} Max	-	0,18	18	±0.1	±0.1	±1	±1	-	$+10^{-5}$	±0.1	μA

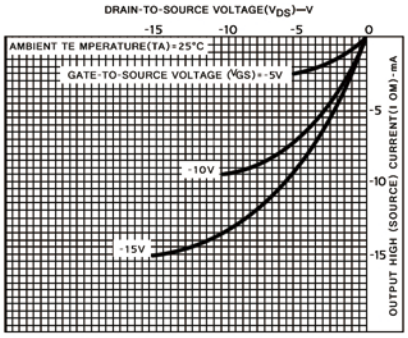


Fig.4-Minimum output high (source) current characteristics.

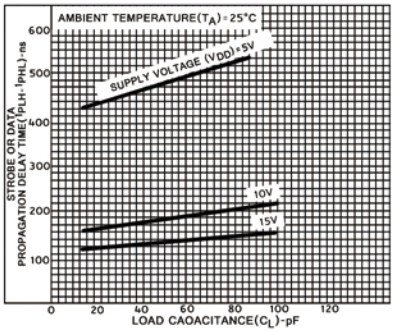


Fig.5-Typical strobe or data propagation delay time vs.load capacitance.

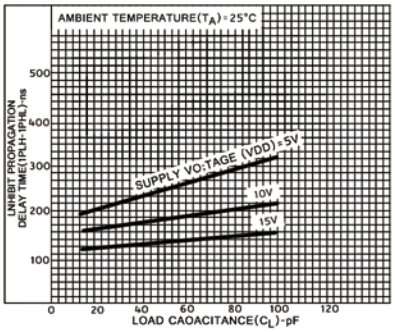


Fig.6-Typical inhibit propagation delay time vs.load capacitance.

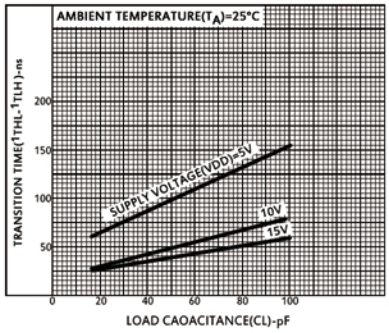


Fig.7-Typical Typical low-to-high transition time vs. loda capacitance.

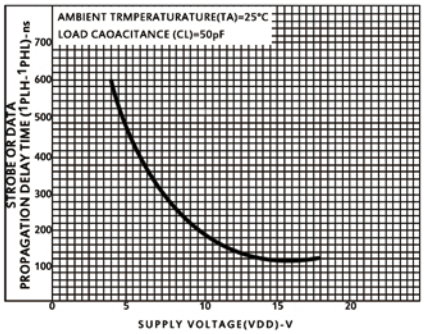


Fig.8-Typical strobe or data propagation delay time vs. supply voltage.

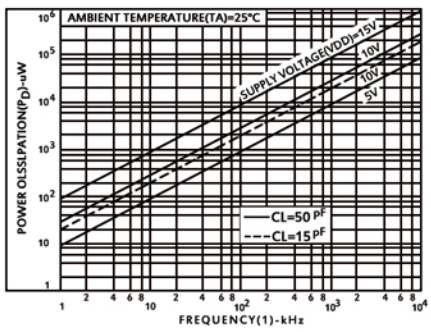


Fig.9-Typical power dissipation vs.frequency.

DYNAMIC ELECTRICAL CHARACTERISTICS at TA = 25°C; Inputt$_r$,t$_f$- 20 ns, C_L = 50 pF,R_L = 200 KΩ

CHARACTERISTIC	TEST CONDITIONS	LIMITS			UNITS
		V_{DD} V	Typ.	Max.	
Propagation Delay Time: t_{pHL},t_{PLH} Strobe or Data		5 10 15	485 185 135	970 370 270	ns
Inhibit		5 10 15	250 110 85	500 220 170	
Transition Time,t_{TLH},t_{THL}		5 10 15	100 50 40	200 100 80	
Minimum Strobe Pulse Width,t_W		5 10 15	125 50 40	250 100 75	ns
Minimum Data Setup Time,t_S		5 10 15	75 35 20	150 70 40	ns
Input Capacitance,C_{IN}	Any Input	-	5	7.5	pF

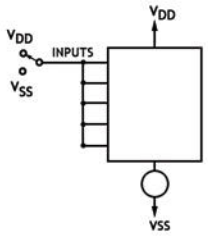


Fig.10-Quiescent device current test circuit.

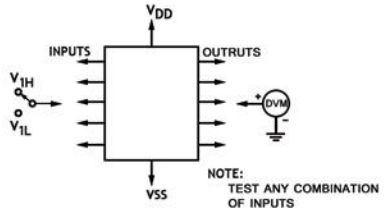


Fig.11-Input voltage test circuit

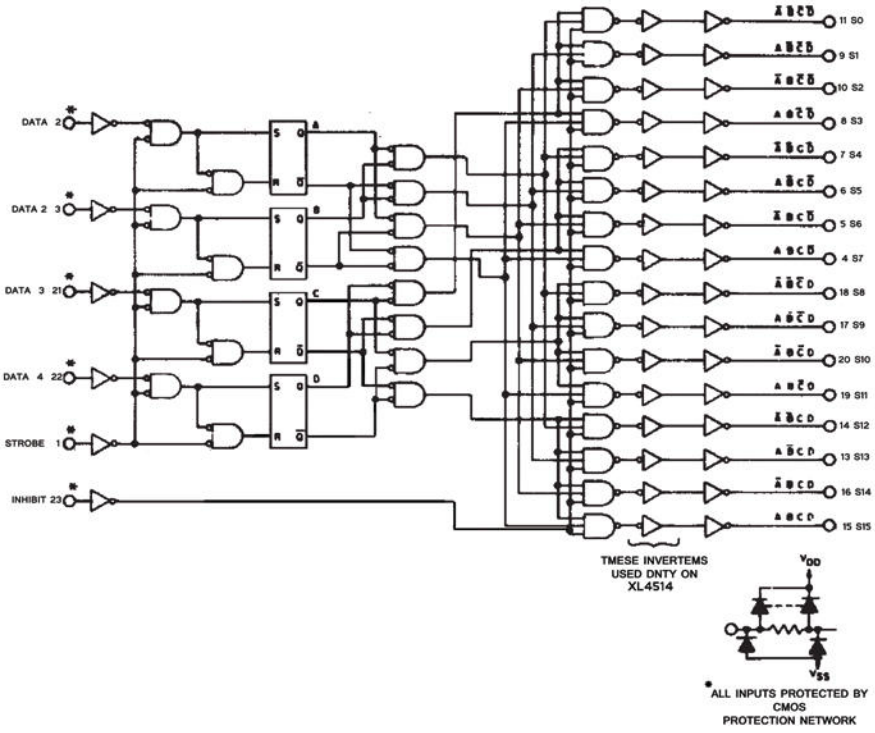


Fig.13-Logic diagram for XL4514 *and* XD4514

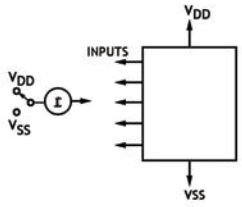


Fig. 12- Input current test circuit

DECODER TRUTH TABLE(Strobr=1)

INHIBIT	DECODER INPUTS				SELECTED OUTPUT XL4514 = Logic 1(High) XD4514 = Logic 0(Low)
	B	C	B	A	
0	0	0	0	0	S0
	0	0	0	1	S1
	0	0	0	0	S2
	0	0	0	1	S3
0	0	1	0	0	S4
	0	1	0	1	S5
	0	1	1	0	S6
	0	1	1	1	S7
0	1	0	0	0	S8
	1	0	0	1	S9
	1	0	1	0	S10
	1	0	1	1	S11
0	1	1	0	0	S12
	1	1	0	1	S13
	1	1	1	0	S14
	1	1	1	1	S15
1	X	X	X	X	All Outpust= 0, XL4514 All Outpust= 1, XD4514

X = Don't Care Logic 1 = high Logic 0 = Low

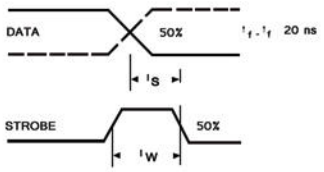
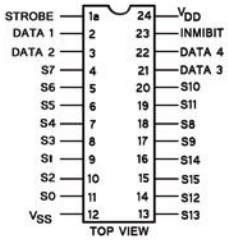
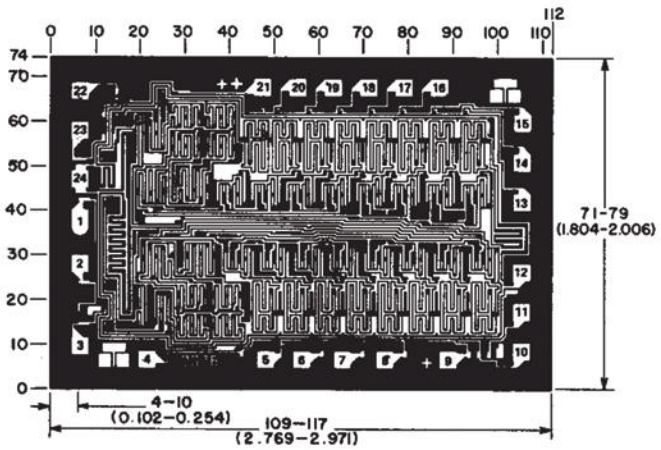


Fig.14-Waveforms for setup time and strobe pulse width



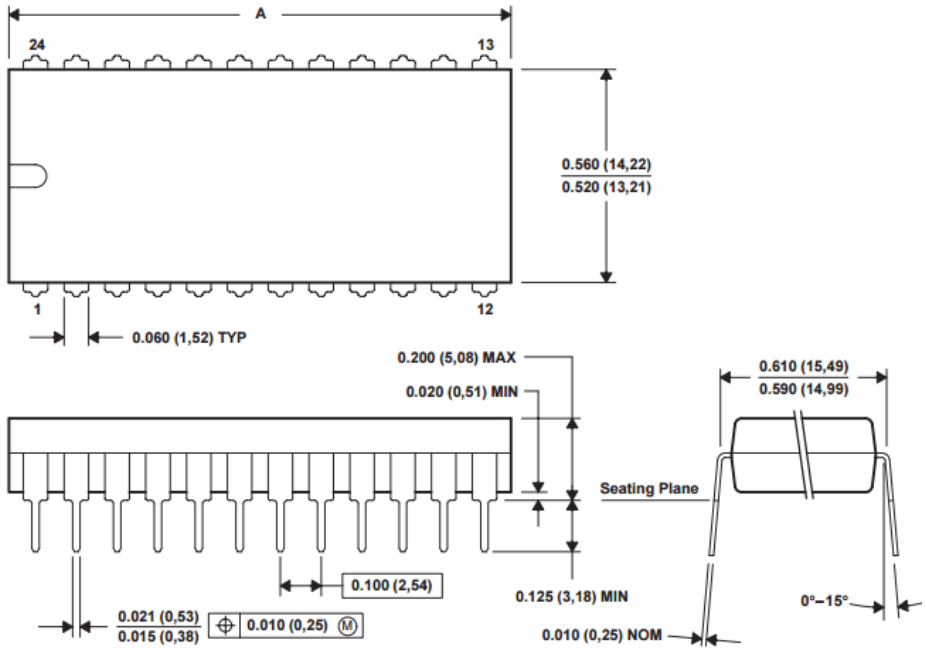
XL4514
XD4514

TERMINAL ASSIGNMENT

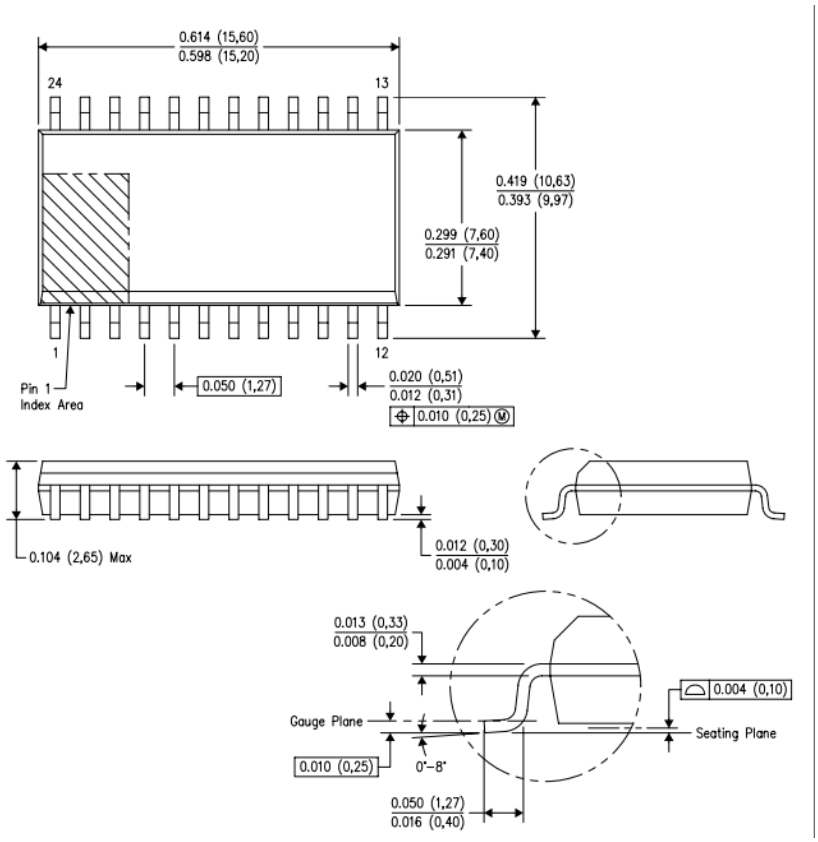


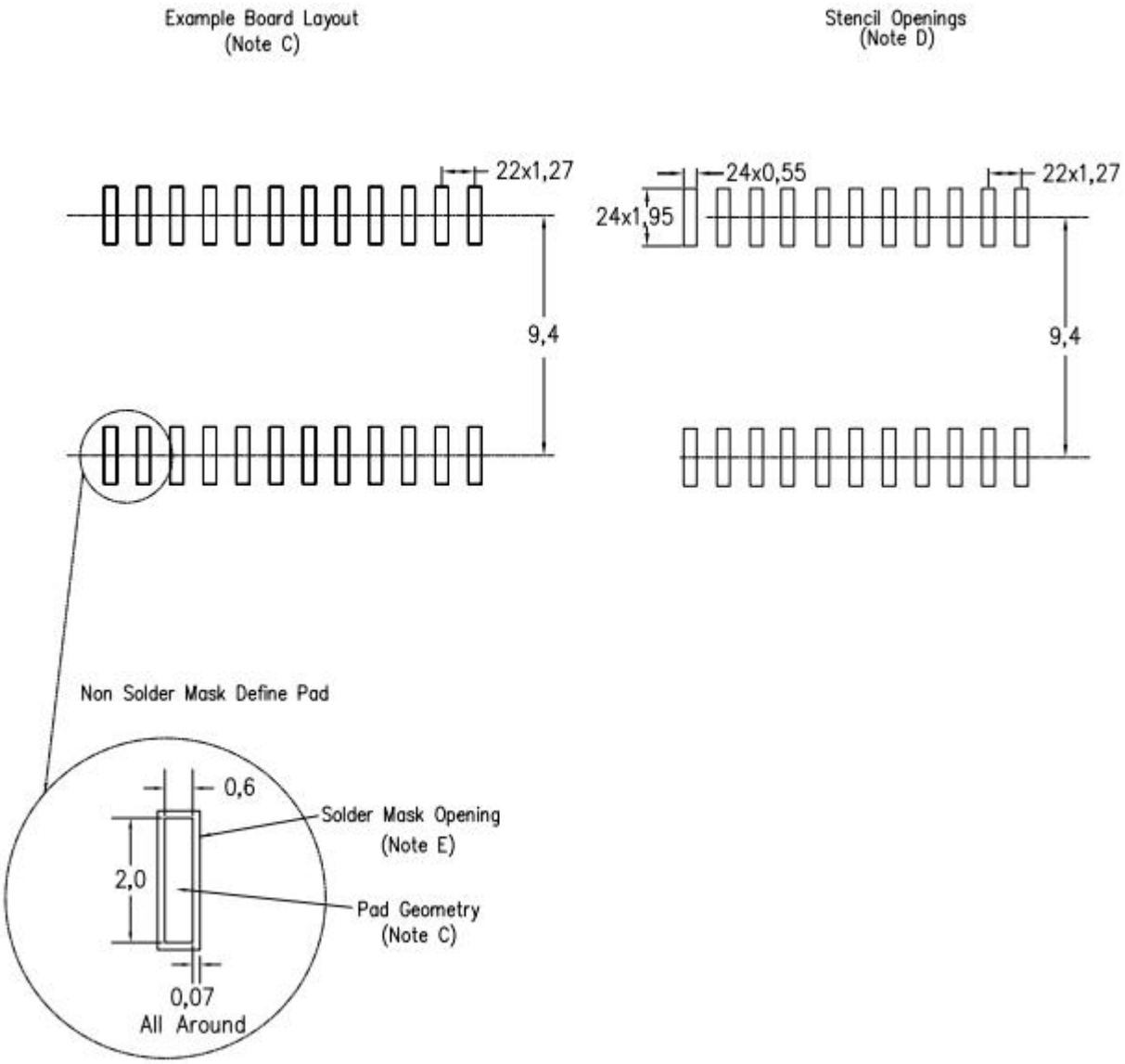
Dimensions and Pad Layout for XL4514 Chip
(Dimensions and pad layout for the XD4514 are identical)

Dimensions in paren theses are in millime ters and are derived from the basic inch dimensions as indicated. Grid graduations are in mils (10¯3 inch)



DIM \ PINS **	24	28	32	40	48	52
A MAX	1.270 (32,26)	1.450 (36,83)	1.650 (41,91)	2.090 (53,09)	2.450 (62,23)	2.650 (67,31)
A MIN	1.230 (31,24)	1.410 (35,81)	1.610 (40,89)	2.040 (51,82)	2.390 (60,71)	2.590 (65,79)





以上信息仅供参考.如需帮助联系客服人员。谢谢 XINLUDA