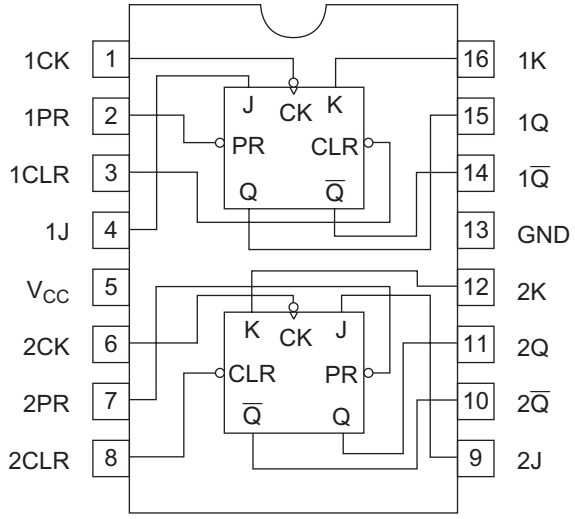
XINLUDA®
WWW.XINLUDA.COM 信路达

XD74LS76 DIP16

Pin Arrangement



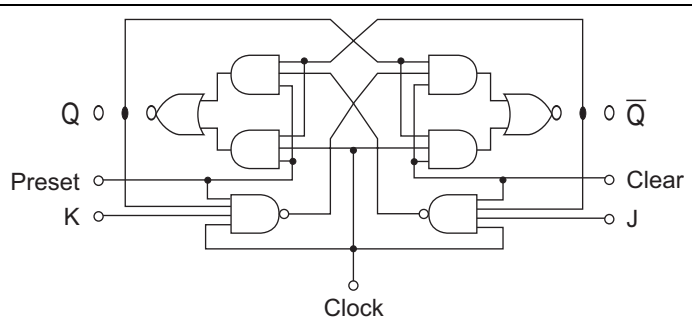
(Top view)

Function Table

Inputs					Outputs	
Preset	**Clear**	**Clock**	**J**	**K**	**Q**	**$\overline{Q}$**
L	H	X	X	X	H	L
H	L	X	X	X	L	H
L	L	X	X	X	H*	H*
H	H	↓	L	L	Q_0	$\overline{Q}_0$
H	H	↓	H	L	H	L
H	H	↓	L	H	L	H
H	H	↓	H	H	Toggle	
H	H	H	X	X	Q_0	$\overline{Q}_0$

H; high level, L; low level, X; irrelevant, ↓; transition from high to low level,
Q_0; level of Q before the indicated steady-state input conditions were established.
$\overline{Q}_0$; complement of $\overline{Q}_0$ or level of Q before the indicated steady-state input conditions were established.
Toggle; each output changes to the complement of its previous level on each active transition indicated by ↓.
* This configuration is nonstable; that is, it will not persist when preset and clear inputs return to their inactive (high) level.

Block Diagram (1/2)



Absolute Maximum Ratings

Item	Symbol	Ratings	Unit
Supply voltage	V_{CC}	7	V
Input voltage	V_{IN}	7	V
Power dissipation	P_T	400	mW
Storage temperature	Tstg	–65 to +150	°C

Note: Voltage value, unless otherwise noted, are with respect to network ground terminal.

Recommended Operating Conditions

Item		Symbol	Min	Typ	Max	Unit
Supply voltage		V_{CC}	4.75	5.00	5.25	V
Output current		I_{OH}	—	—	–400	μA
		I_{OL}	—	—	8	mA
Operating temperature		Topr	–20	25	75	°C
Clock frequency		f_{clock}	0	—	30	MHz
Pulse width	Clock High	t_w	20	—	—	ns
	Clear Preset Low	t_w	25	—	—	
Setup time	"H" Data	t_{su}	20↓	—	—	ns
	"L" Data	t_{su}	20↓	—	—	
Hold time		t_h	0↓	—	—	ns

Electrical Characteristics

(Ta = –20 to +75 °C)

Item		Symbol	min.	typ.*	max.	Unit	Condition
Input voltage		V_{IH}	2.0	—	—	V	
		V_{IL}	—	—	0.8	V	
Output voltage		V_{OH}	2.7	—	—	V	V_{CC} = 4.75 V, V_{IH} = 2 V, V_{IL} = 0.8 V, I_{OH} = –400 μA
		V_{OL}	—	—	0.5	V	I_{OL} = 8 mA; V_{CC} = 4.75 V, V_{IH} = 2 V, V_{IL} = 0.8 V
			—	—	0.4		I_{OL} = 4 mA
Input current	J, K	I_{IH}	—	—	20	μA	V_{CC} = 5.25 V, V_I = 2.7 V
	Clear		—	—	60		
	Preset		—	—	60		
	Clock		—	—	80		
	J, K	I_{IL}**	—	—	–0.4	mA	V_{CC} = 5.25 V, V_I = 0.4 V
	Clear		—	—	–0.8		
	Preset		—	—	–0.8		
	Clock		—	—	–0.8		
	J, K	I_I	—	—	0.1	mA	V_{CC} = 5.25 V, V_I = 7 V
	Clear		—	—	0.3		
	Preset		—	—	0.3		
	Clock		—	—	0.4		
Short-circuit output current		I_{OS}	–20	—	–100	mA	V_{CC} = 5.25 V
Supply current***		I_{CC}	—	4	6	mA	V_{CC} = 5.25 V
Input clamp voltage		V_{IK}	—	—	–1.5	V	V_{CC} = 4.75 V, I_{IN} = –18 mA

Notes: * V_{CC} = 5 V, Ta = 25°C

** I_{IL} should not be measured when preset and clear inputs are low at same time.

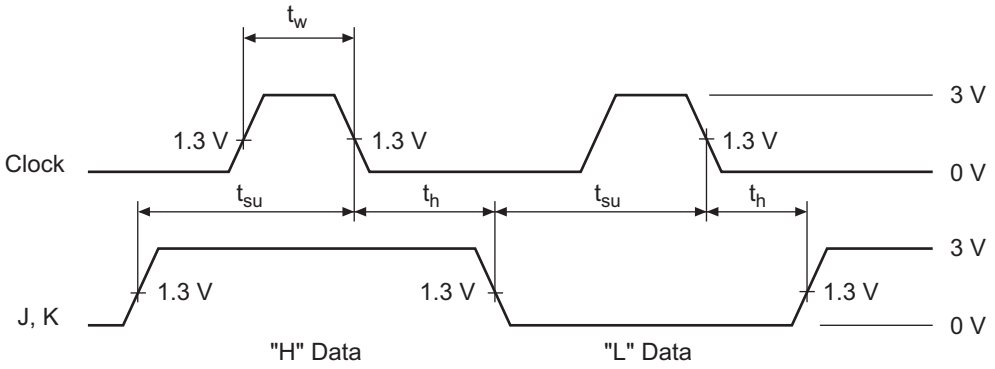
*** With all outputs open, I_{CC} is measured with the Q and $\overline{Q}$ outputs high in turn.
At the time of measurement, the clock input is grounded.

Switching Characteristics

(V_{CC} = 5 V, Ta = 25°C)

Item	Symbol	Inputs	Outputs	min.	typ.	max.	Unit	Condition
Maximum clock frequency	f_{max}			30	45		MHz	C_L = 15 pF, R_L = 2 kΩ
Propagation delay time	t_{PLH}	Clear Preset Clock	Q, $\overline{Q}$	—	15	20	ns	
	t_{PHL}			—	15	20	ns	

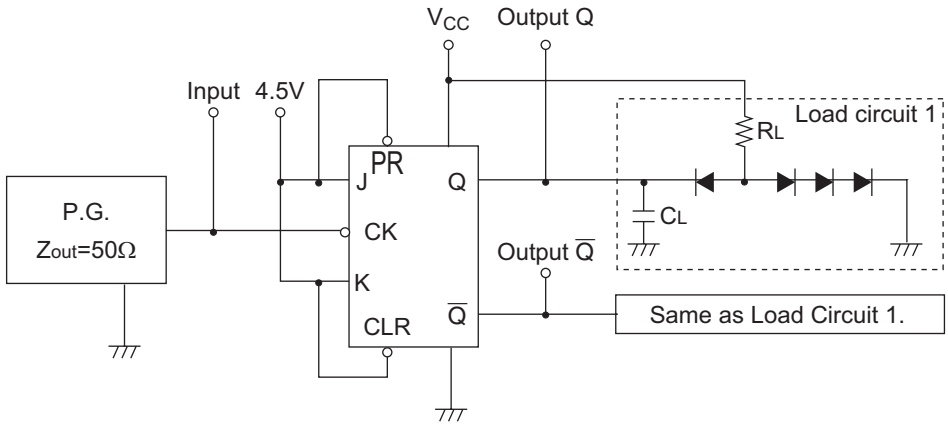
Timing Definition



Testing Method

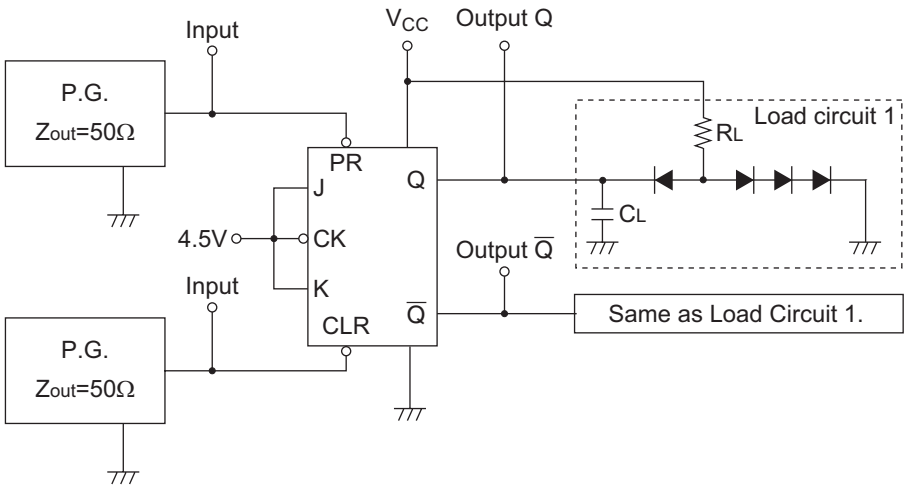
Test Circuit

1. f_{max}, t_{PLH}, t_{PHL}, (Clock→Q, $\overline{Q}$)



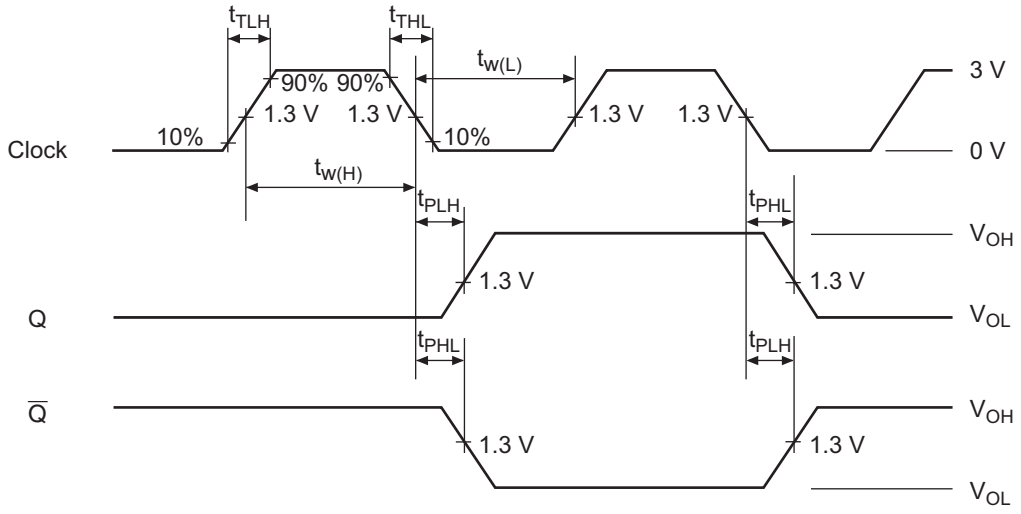
Notes:
1. Test is put into the each flip-flop.
2. C_L includes probe and jig capacitance.
3. All diodes are 1S2074(H).

2. t_{PHL}, t_{PLH} (Clear, Preset→ Q, $\overline{Q}$)



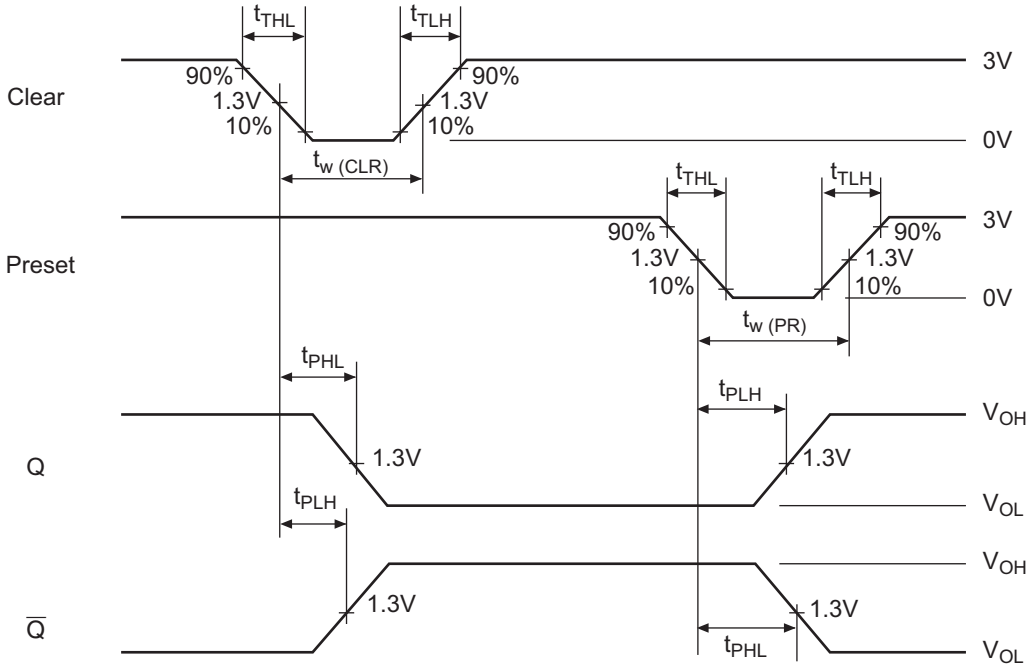
Notes:
1. Test is put into the each flip-flop.
2. C_L includes probe and jig capacitance.
3. All diodes are 1S2074(H).

Waveforms 1



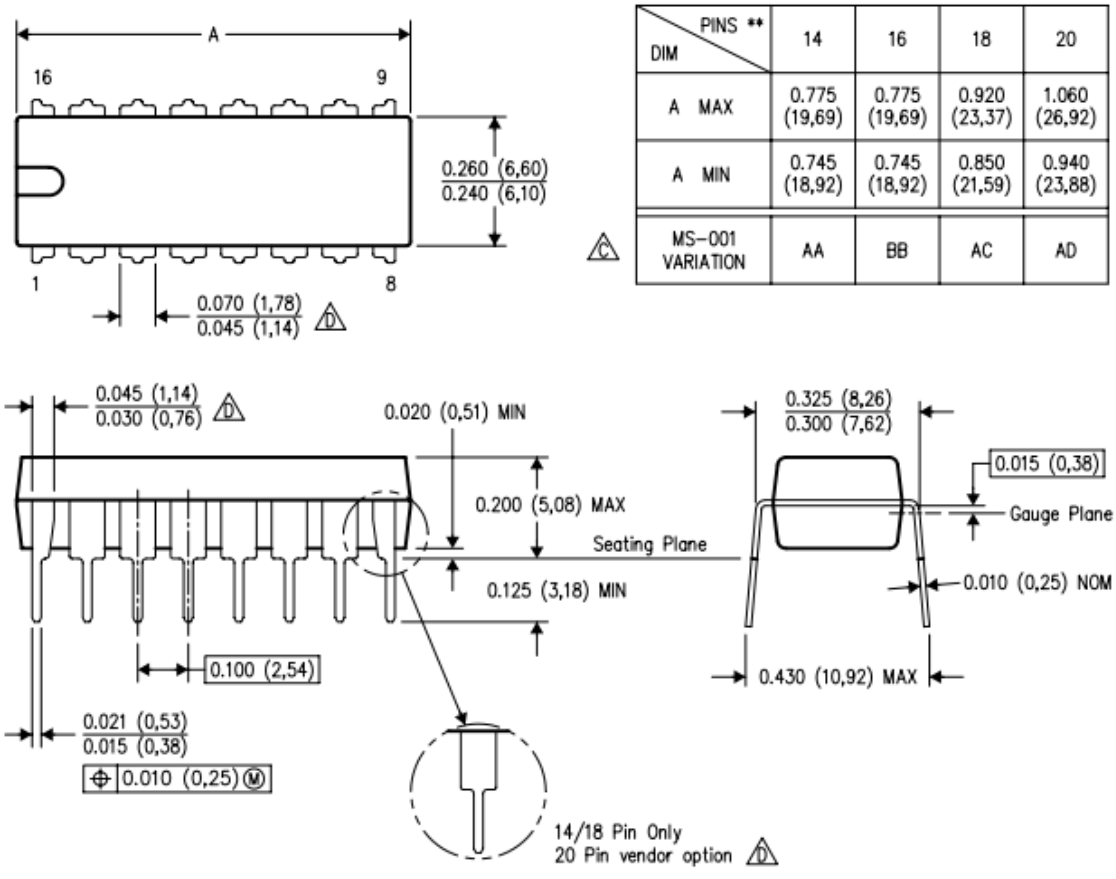
Note: Clock input pulse; $t_{TLH} \leq 15$ ns, $t_{THL} \leq 6$ ns, PRR = 1 MHz, duty cycle = 50% and for fmax., $t_{TLH} = t_{THL} \leq 2.5$ ns

Waveforms 2



Note: Crear and preset input pulse; $t_{TLH} \leq 15$ ns, $t_{THL} \leq 6$ ns, PRR = 1 MHz,

DIP



DIM \ PINS **	14	16	18	20
A MAX	0.775 (19,69)	0.775 (19,69)	0.920 (23,37)	1.060 (26,92)
A MIN	0.745 (18,92)	0.745 (18,92)	0.850 (21,59)	0.940 (23,88)
MS-001 VARIATION	AA	BB	AC	AD

以上信息仅供参考.如需帮助联系客服人员。谢谢 XINLUDA

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Flip-Flops ***category:***

Click to view products by XINLUDA ***manufacturer:***

Other Similar products are found below :

NLV74HC74ADTR2G NLV74HC11ADR2G NTE74LS76A 74LCX16374MTDX MM74HC74AMX 74LVX74MTCX SN74HC273DWR SN74LVC74ADR SN74HC574PWR SN74HC273NSR 74AHC74D.112 74AUP1G74DC.125 74HC112D.652 74HC574D.652 74HCT173D.652 74HCT174D.652 74HCT374D.652 74AHC574D.118 74HC174D.652 74HC273D.652 74HC374D.652 74HC74D.653 74HC74PW.112 74HC107D.652 74HC574D.653 HEF4013BT.653 HEF4027BT.652 74HC107PW.112 74HC73PW.112 74HCT74PW.112 74LV74PW.112 74HC173PW.112 74HC174PW.112 74HC175PW.112 74HC377DB.118 74HC574PW.112 74HC73D.652 74HCT175D.652 74LVC1G74DP.125 74LVC74APW.112 74VHC174FT(BJ) 74VHC273FT(BJ) 74VHCT574AFT(BJ) 74HCT273DB.118 74HC107DB.112 74HC112PW.112 74HCT74DB.112 74LVC1G80GV.125 74LVC1G175GV.125 74LVC1G79GV.125