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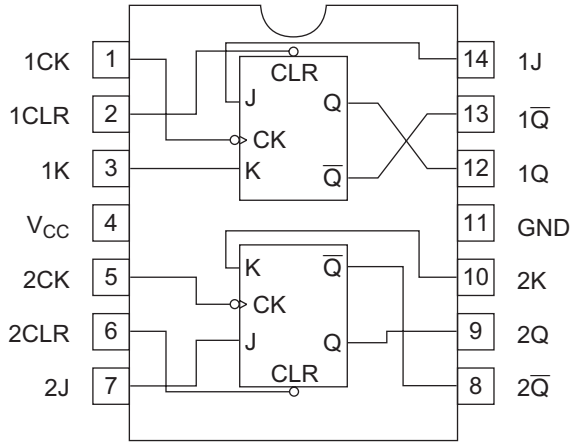
XD74LS73 DIP-14

Pin Arrangement



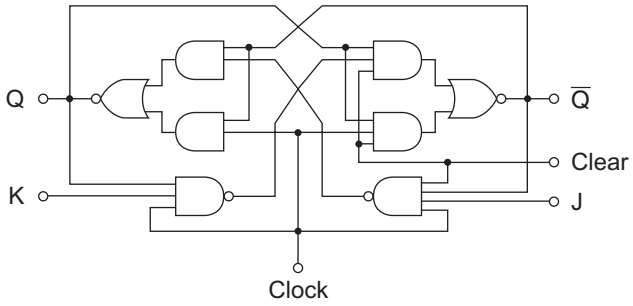
(Top view)

Function Table

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

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 ↓.

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	$t_{w\ (Clock\ High)}$	20	—	—	ns
	$t_{w\ (Clear\ Low)}$	25	—	—	
Setup time	$t_{su\ (“H”\ Data)}$	20↓	—	—	ns
	$t_{su\ (“L”\ Data)}$	20↓	—	—	
Hold time	t_h	0↓	—	—	ns

Note: ↓; The arrow indicates the falling edge.

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		
	Clock		—	—	80		
	J, K	I_{IL}	—	—	–0.4	mA	V_{CC} = 5.25 V, V_I = 0.4 V
	Clear		—	—	–0.8		
	Clock		—	—	–0.8		
	J, K	I_I	—	—	0.1	mA	V_{CC} = 5.25 V, V_I = 7 V
	Clear		—	—	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

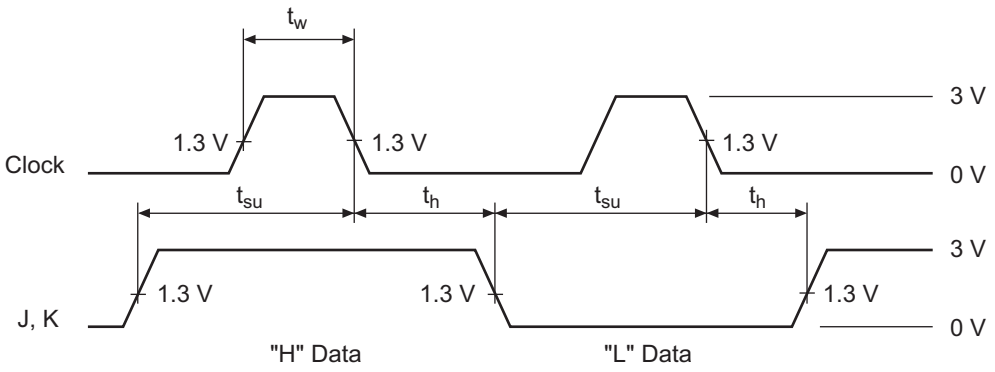
** With all outputs open, I_{CC} is measured with the Q and $\overline{Q}$ outputs high in turn. At time of measurement, the clock input is founded.

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 Clock	Q, $\overline{Q}$	—	15	20	ns	
	t_{PHL}			—	15	20	ns	

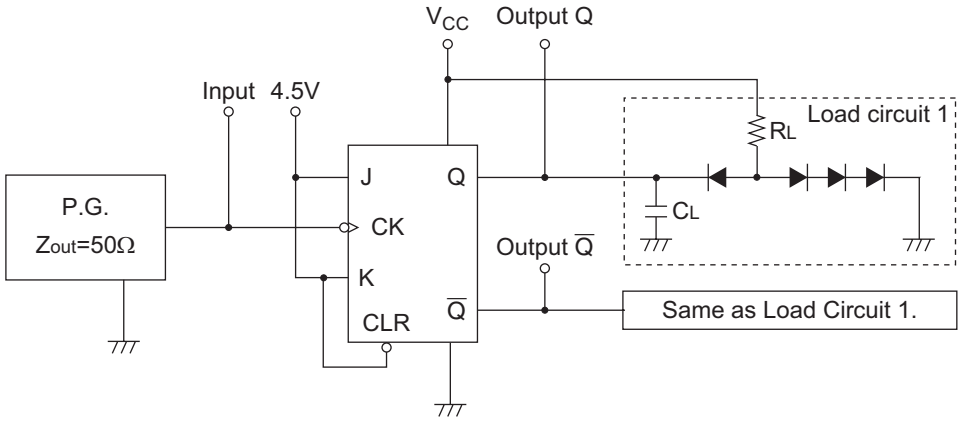
Timing Definition



Testing Method

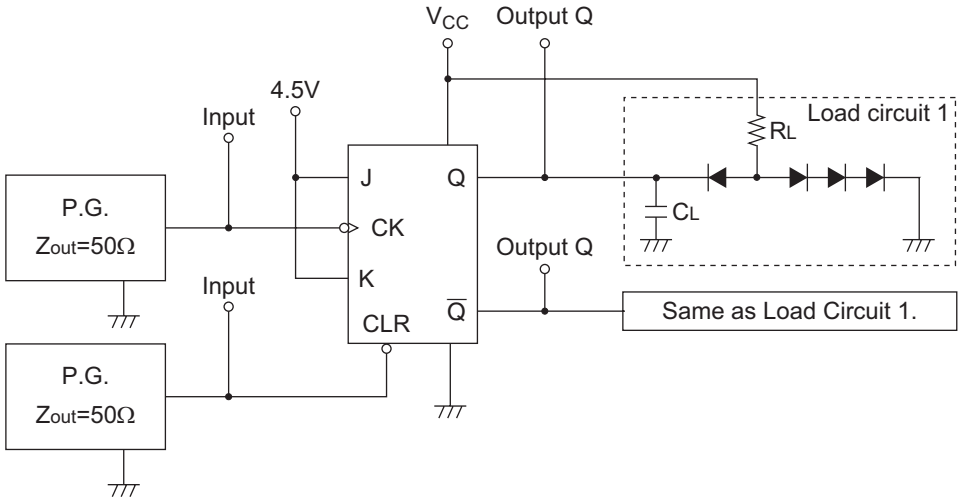
Test Circuit

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} (Clear→Q), t_{PLH} (Clear→$\overline{Q}$)



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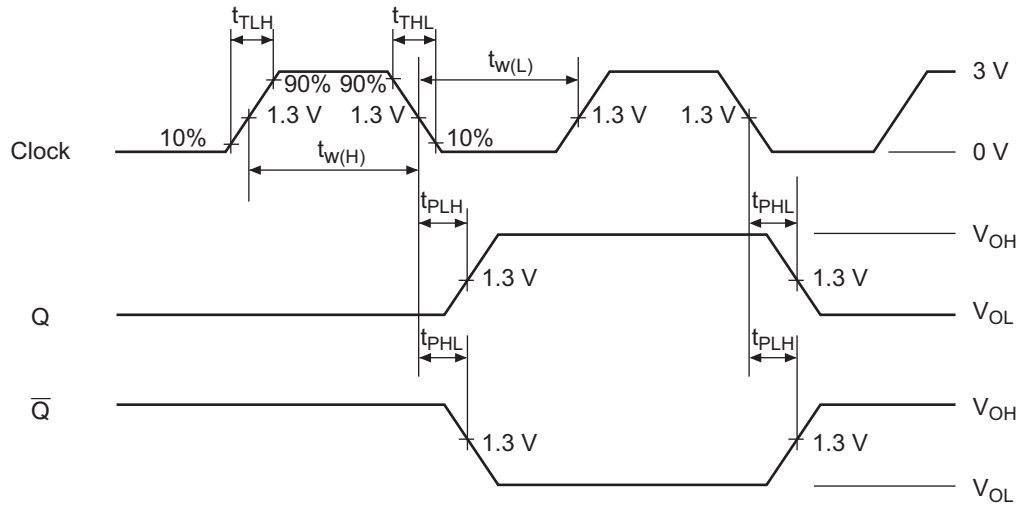
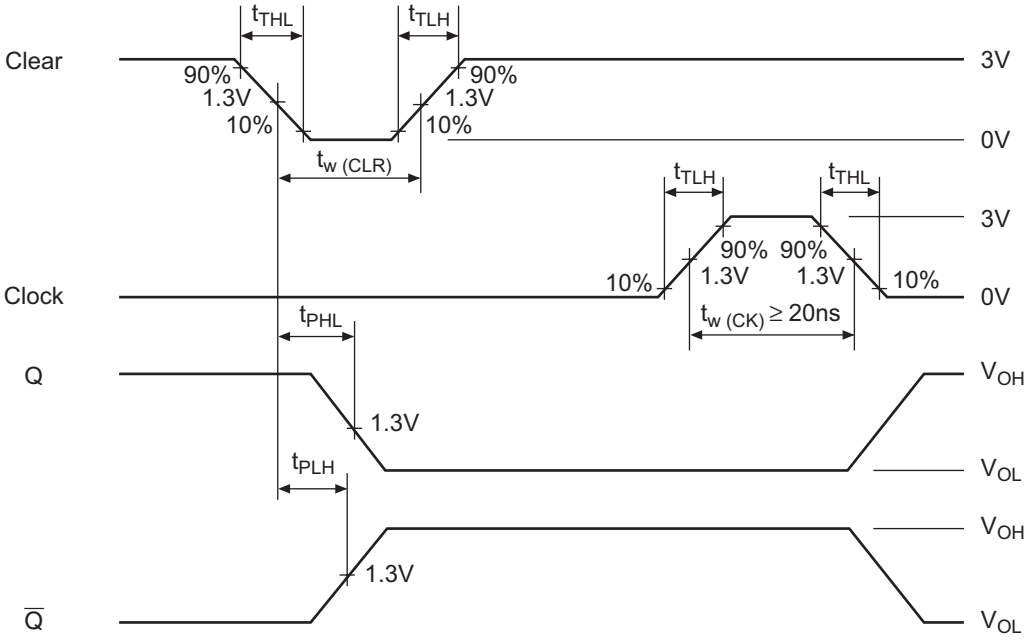
Waveforms 1



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

Waveforms 2



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

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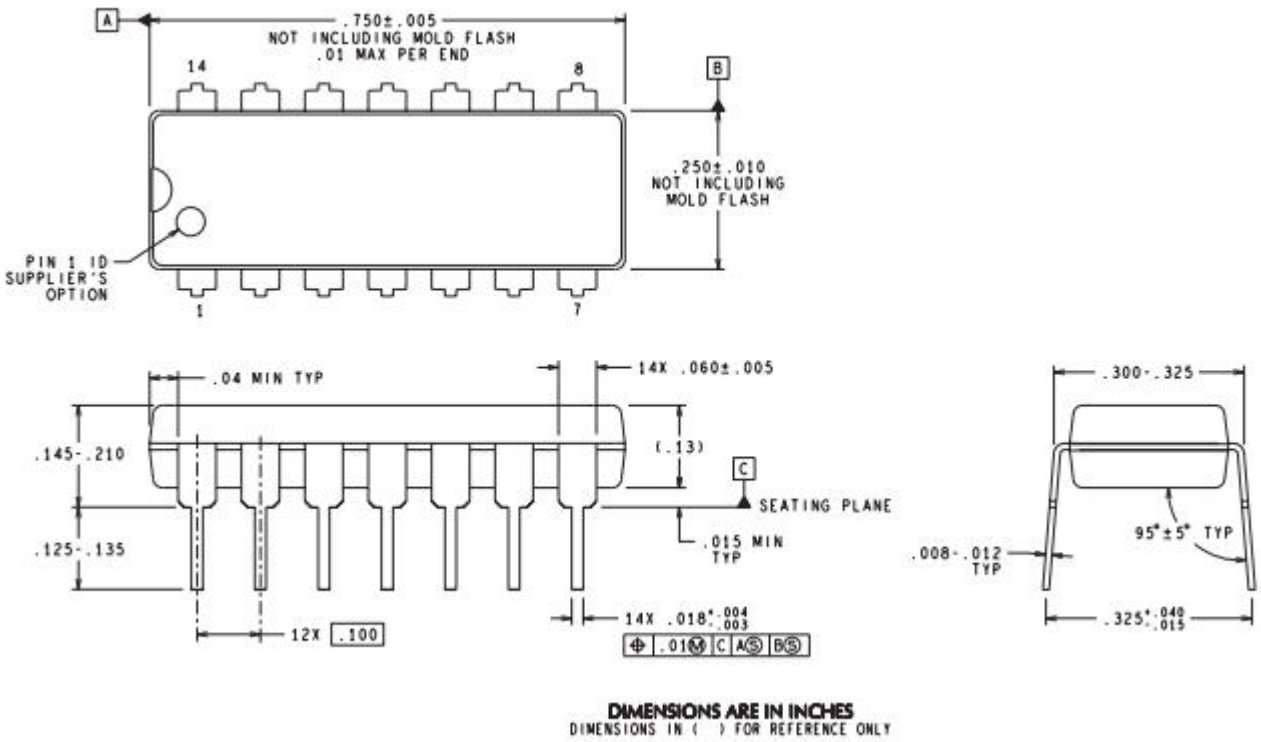

以上信息仅供参考.如需帮助联系客服人员。谢谢 XINLUDA