

PC Board Layout Considerations (continued)

T-51-00

SN54376, SN74376 QUADRUPLE J-K FLIP-FLOPS

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltage, V_{CC} (see Note 1)	7 V
Input voltage	5.5 V
Operating free-air temperature range: SN54376	-55°C to 125°C
SN74376	0°C to 70°C
Storage temperature range	-65°C to 150°C

NOTE 1: Voltage values are with respect to network ground terminals.

recommended operating conditions

		SN54376			SN74376			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
Supply voltage, V_{CC}		4.5	5	5.5	4.75	5	5.25	V
High-level output current, I_{OH}				-800			-800	μ A
Low-level output current, I_{OL}				16			16	mA
Clock frequency		0		30	0		30	MHz
Pulse width, t_w	Clock high			22			22	ns
	Clock low			12			12	
	Preset or clear low			12			12	
Setup time, t_{SU}	J, K inputs			0†			0†	ns
	Clear inactive state			10†			10†	
Input hold time, t_H				20†			20†	ns
Operating free-air temperature, T_A		-55		125	0		70	°C

† The arrow indicates the edge of the clock pulse used for reference: † for the rising edge, ‡ for the falling edge.

electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER		TEST CONDITIONS†	MIN	TYP‡	MAX	UNIT
V_{IH}	High-level input voltage		2			V
V_{IL}	Low-level input voltage				0.8	V
V_{IK}	Input clamp voltage	$V_{CC} = \text{MIN}, I_I = -12 \text{ mA}$			-1.5	V
V_{OH}	High-level output voltage	$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, V_{IL} = 0.8 \text{ V}, I_{OH} = -800 \mu\text{A}$	2.4	3.4		V
V_{OL}	Low-level output voltage	$V_{CC} = \text{MIN}, V_{IH} = 2 \text{ V}, V_{IL} = 0.8 \text{ V}, I_{OL} = 16 \text{ mA}$		0.2	0.4	V
I_I	Input current at maximum input voltage	$V_{CC} = \text{MAX}, V_I = 5.5 \text{ V}$			1	mA
I_{IH}	High-level input current	$V_{CC} = \text{MAX}, V_I = 2.4 \text{ V}$			40	μ A
I_{IL}	Low-level input current	$V_{CC} = \text{MAX}, V_I = 0.4 \text{ V}$			-1.6	mA
I_{OS}	Short-circuit output current§	$V_{CC} = \text{MAX}$	-30		-85	mA
I_{CC}	Supply current	$V_{CC} = \text{MAX}$		52	74	mA

† For conditions shown as MIN or MAX use the appropriate value specified under recommended operating conditions.

2

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