



Electrical Characteristics

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

Parameter	Conditions	DM54/74												Units	
		H103			H106			H108							
		Min	Typ (1)	Max	Min	Typ (1)	Max	Min	Typ (1)	Max	Min	Typ (1)	Max		
V _{IH}	High Level Input Voltage	2			2			2							V
V _{IL}	Low Level Input Voltage			0.8						0.8					V
V _I	Input Clamp Voltage			-1.5						-1.5					V
I _{OH}	High Level Output Current			-500						-500					μA
V _{OH}	High Level Output Voltage	2.4	3.4		2.4	3.4		2.4	3.4		2.4	3.4			V
I _{OL}	Low Level Output Current			20						20					mA
V _{OL}	Low Level Output Voltage		0.2	0.4		0.2	0.4		0.2	0.4		0.2	0.4		V
I _I	Input Current at Maximum Input Voltage			1						1					mA
I _{IH}	High Level Input Current			50						50					μA
	Clear			100						100					μA
	Preset			N/A						100					μA
	Clock	0		-1	0			0		-1	0				mA
I _{IL}	Low Level Input Current		-1	-2		-1	-2		-1	-2		-1	-2		mA
	Clear		-1	-2		-1	-2		-1	-2		-1	-2		mA
	Preset			N/A			N/A			-2			-2		mA
	Clock		-3	-4.8		-3	-4.8		-3	-4.8		-3	-4.8		mA
I _{OS}	Short Circuit Output Current	-40		-100	-40		-100	-40		-100	-40		-100		mA
I _{CC}	Supply Current		40	76		40	76		40	76		40	76		mA

Note 1: All typical values are at V_{CC} = 5 V, T_A = 25°C.

Note 2: Not more than one output should be shorted at a time, and duration of short circuit should not exceed one second.

Note 3: With all outputs open, I_{CC} is measured with the Q and Q outputs high in turn. At the time of measurement, the clock input is grounded.

Switching Characteristics at $V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$

Parameter		From (Input)	To (Output)	Conditions	Min	Typ	Max	Units	
f_{MAX}	Maximum Clock Frequency			$C_L = 25\text{ pF}$ $R_L = 280\ \Omega$	40	50		MHz	
t_{PLH}	Propagation Delay Time, Low-to-High Level Output	Preset or Clear			Q or \bar{Q}		8	12	ns
t_{PHL}	Propagation Delay Time, High-to-Low Level Output	Preset or Clear	Clock High		\bar{Q} or Q		15	20	ns
			Clock Low				23	35	
t_{PLH}	Propagation Delay Time, Low-to-High Level Output	Clock			Q or \bar{Q}		10	15	ns
t_{PHL}	Propagation Delay Time, High-to-Low Level Output						16	20	
t_W	Pulse Width	Clock High				10			ns
		Clock Low				15			
		Clear or Preset Low				16			
t_{SETUP}	Setup Time (4)	High Level Data				10 ↓			ns
		Low Level Data			13 ↓				
t_{HOLD}	Hold Time (4)				0 ↓			ns	

Note 4: ↓ The arrow indicates that the falling edge of the clock pulse is used for reference.