

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

Parameter	Conditions	DM54/74			DM54/74			DM54/74			DM54/74			Units
		37, 40			H40			LS37, LS40			S40, S140			
		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			2			V
V_{IL}	Low Level Input Voltage			0.8			0.8			0.8			0.8	V
V_i	Input Clamp Voltage	DM54		0.8			0.8			0.8			0.8	V
		DM74		0.8			0.8			0.8			0.8	V
			$I_i = -8$ mA			-1.5								
I_{OH}	High Level Output Current		$V_{CC} = \text{Min}$											V
			$I_i = -12$ mA											V
			$I_i = -18$ mA											V
V_{OH}	High Level Output Voltage	Others												V
		S140			-1.2			-1.5			-1.2			mA
		DM54	$I_{OH} = \text{Max}$	2.4	3.3	2.4	3.4	2.4	3.4	2.5	3.4	2.5	3.4	V
I_{OL}	Low Level Output Current	DM54	$V_{CC} = \text{Min}$	2.4	3.3	2.4	3.4	2.4	3.4	2.7	3.4	2.7	3.4	V
		DM74		2.4	3.3	2.4	3.4	2.4	3.4	2.7	3.4	2.7	3.4	V
			$V_{IL} = 0.5$ V, $R_O = 50 \Omega$ to GND, S140 Only									2		V
V_{OL}	Low Level Output Voltage	DM54			48			60			12			mA
		DM74			48			60			24			mA
			$V_{CC} = \text{Min}$	0.2	0.4	0.2	0.4	0.2	0.4	0.25	0.4	0.25	0.4	V
I_i	Input Current at Maximum Input Voltage	DM54	$V_{IH} = 2$ V	0.2	0.4	0.2	0.4	0.2	0.4	0.25	0.4	0.25	0.4	V
		DM74		0.2	0.4	0.2	0.4	0.2	0.4	0.35	0.5	0.35	0.5	V
			$I_{OL} = 12$ mA									0.25	0.4	V
I_{IH}	High Level Input Current		$V_{CC} = \text{Max}$			1		1					1	mA
			$V_i = 5.5$ V											mA
			$V_i = 7$ V								0.1			mA
I_{IL}	Low Level Input Current		$V_{CC} = \text{Max}$			40		100			20		100	μ A
			$V_i = 2.4$ V											μ A
			$V_i = 2.7$ V											μ A
I_{IOS}	Short Circuit Output Current		$V_{CC} = \text{Max}$			-1.6		-4			-0.36		-4	mA
			$V_{CC} = 0.4$ V											mA
			$V_i = 0.5$ V											mA
I_{CC}	Supply Current		$V_{CC} = \text{Max}$			-20		-40			-125		-20	mA
			$V_{CC} = \text{Max}$ (2)			-18		-40			-125		-20	mA
			$V_{CC} = \text{Max}$											mA

See Table

Note 1: All typical values are at $V_{CC} = 5$ V, $T_A = 25^\circ\text{C}$.
 Note 2: Not more than one output should be shorted at a time, and duration of the short circuit should not exceed one second for 37, LS37, 40, H40 or LS40; or 100 milliseconds for S40 and S140.



Supply Currents

Device	ICCH (mA) Total With Outputs High		ICCL (mA) Total With Outputs Low	
	Typ	Max	Typ	Max
37	9	15.5	34	54
40	4	8	17	27
H40	10.4	16	25	40
LS37	0.9	2	6	12
LS40	0.45	1	3	6
S40	10	18	25	44
S140	10	18	25	44

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

Device	Conditions	t _{PLH} (ns) Propagation Delay Time, Low-To-High Level Output			t _{PHL} (ns) Propagation Delay Time, High-To-Low Level Output		
		Min	Typ	Max	Min	Typ	Max
37	$C_L = 45\text{ pF}$, $R_L = 133\ \Omega$		13	22		8	15
40	$C_L = 15\text{ pF}$, $R_L = 133\ \Omega$		13	22		8	15
H40	$C_L = 25\text{ pF}$, $R_L = 93\ \Omega$		8.5	12		6.5	12
LS37, LS40	$C_L = 45\text{ pF}$, $R_L = 667\ \Omega$	3	10	15	3	10	15
	$C_L = 150\text{ pF}$, $R_L = 667\ \Omega$	4	13	18	4	16	21
S40, S140	$C_L = 50\text{ pF}$, $R_L = 93\ \Omega$	2	4	6.5	2	4	6.5
	$C_L = 150\text{ pF}$, $R_L = 93\ \Omega$	3	6	9	3	6	9