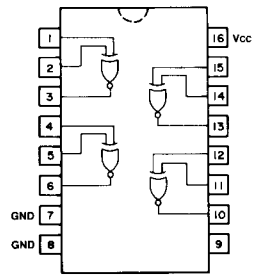
Quad 2-Input Exclusive NOR Gate

The 41BM(M) and 41CS(L) devices are bipolar, NPN, sealed junction, silicon integrated circuits. They are available in 16-pin plastic DIPs.



Electrical Characteristics

V_{CC} = 5.0 ±0.5 V, T_J = 0 to 85 °C

Parameter	Symbol	Test Conditions	MTTL Family 41BM Device Min	Typ	Max	LTTL Family 41CS Device Min	Typ	Max	Unit
Output Voltage									
High	V_{OH}	V_{CC}=4.5 V, I_{OH}=−4.0 mA	2.4	3.5	—	—	—	—	V
High	V_{OH}	V_{CC}=4.5 V, I_{OH}=−0.4 mA	—	—	—	2.4	3.5	—	V
Low	V_{OL}	V_{CC}=4.5 V, I_{OL}=9.8 mA	—	0.25	0.4	—	—	—	V
Low	V_{OL}	V_{CC}=4.5 V, I_{OL}=2.4 mA	—	—	—	—	0.25	0.4	V
Input Voltage									
High	V_{IH}	—	1.8	—	—	1.8	—	—	V
Low	V_{IL}	—	—	—	0.8	—	—	0.8	V
Clamp	V_{IK}	I_{IK}= −5 mA	—	—	−1.5	—	—	−1.5	V
Input Current									
High, V_{IH}=2.4 V	I_{IH}	V_{CC}=5.5 V	—	—	80	—	—	20	μA
High, V_{IH}=5.5	V_{IH}	V_{CC}=5.5 V	—	—	400	—	—	200	μA
Low	I_{IL}	V_{CC}=5.5 V, V_{IL}=0.4 V	—	—	−1.96	—	—	−0.48	mA
Output Current Short-Circuit	I_{OS}	V_{CC}=5.5 V, V_{OL}=0.0 V	−20	—	−75	−5	—	−30	mA
Power Supply Current	I_{CC}	V_{CC}=5.5 V	—	—	35	—	—	10	mA

Timing Characteristics

V_{CC}=5.0 V, T_J=25 °C

Parameter	MTTL Family 41BM Device Min	Typ	Max	LTTL Family 41CS Device Min	Typ	Max	Unit
Propagation Delays							
t_{PLH} (other input low)	—	—	15	—	—	65	ns
t_{PHL} (other input low)	—	—	11	—	—	45	ns
t_{PLH} (other input high)	—	—	18	—	—	85	ns
t_{PHL} (other input high)	—	—	22	—	—	70	ns
Transition Times							
t_{TLH}	—	—	27	—	—	160	ns
t_{THL}	—	—	8	—	—	30	ns

Maximum Ratings

Power supply voltage (V_{CC}) ..... 7.0 V
Input voltage (V_I) ..... 5.5 V
Operating temperature range (T_J) ..... −25 to +125 °C
Storage temperature range (Tstg) ..... −40 to +125 °C

Maximum ratings are defined as the limiting conditions that the user can apply to the device under all variations of circuit and environmental conditions. If any rating is exceeded, permanent damage to the device may result.

Bonding or soldering of the external leads of this device can be performed safely at temperatures up to 300 °C.