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DM7486

Quad 2-Input Exclusive-OR Gate

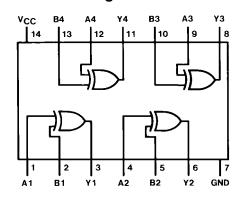
General Description

This device contains four independent gates each of which performs the logic exclusive-OR function.

Ordering Code:

Order Number	Package Number	Package Description
DM7486N	N14A	14-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide

Connection Diagram



Function Table

 $\mathbf{Y} = \mathbf{A} \oplus \mathbf{B}$

Inp	Output	
Α	В	Y
L	L	L
L	Н	Н
Н	L	Н
Н	Н	L

H = HIGH Logic Level L = LOW Logic Level

Absolute Maximum Ratings(Note 1)

Supply Voltage 7V Input Voltage 5.5V Operating Free Air Temperature Range $0^{\circ}\text{C to } +70^{\circ}\text{C}$ Storage Temperature Range $-65^{\circ}\text{C to } +150^{\circ}\text{C}$

Note 1: The "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed. The device should not be operated at these limits. The parametric values defined in the Electrical Characteristics tables are not guaranteed at the absolute maximum ratings. The "Recommended Operating Conditions" table will define the conditions for actual device operation.

Recommended Operating Conditions

Symbol	Parameter	Min	Nom	Max	Units
V _{CC}	Supply Voltage	4.75	5	5.25	V
V _{IH}	HIGH Level Input Voltage	2			V
V _{IL}	LOW Level Input Voltage			0.8	V
I _{OH}	HIGH Level Output Current			-0.8	mA
I _{OL}	LOW Level Output Current			16	mA
T _A	Free Air Operating Temperature	0		70	°C

Electrical Characteristics

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

Symbol	Parameter	Conditions	Min	Typ (Note 2)	Max	Units
VI	Input Clamp Voltage	V _{CC} = Min, I _I = -12 mA			-1.5	V
V _{OH}	HIGH Level Output Voltage	$V_{CC} = Min, I_{OH} = Max$ $V_{IL} = Max, V_{IH} = Min$	2.4	3.4		٧
V _{OL}	LOW Level Output Voltage	$V_{CC} = Min, I_{OL} = Max$ $V_{IH} = Min, V_{IL} = Max$		0.2	0.4	٧
II	Input Current @ Max Input Voltage	$V_{CC} = Max, V_I = 5.5V$			1	mA
I _{IH}	HIGH Level Input Current	$V_{CC} = Max, V_I = 2.4V$			40	μΑ
I _{IL}	LOW Level Input Current	$V_{CC} = Max, V_I = 0.4V$			-1.6	mA
Ios	Short Circuit Output Current	V _{CC} = Max (Note 3)	-18		-55	mA
I _{CCH}	Supply Current with Outputs HIGH	V _{CC} = Max (Note 4)		30	50	mA
I _{CCL}	Supply Current with Outputs LOW	V _{CC} = Max (Note 3)(Note 5)		36	57	mA

Note 2: All typicals are at $V_{CC} = 5V$, $T_A = 25$ °C.

Switching Characteristics

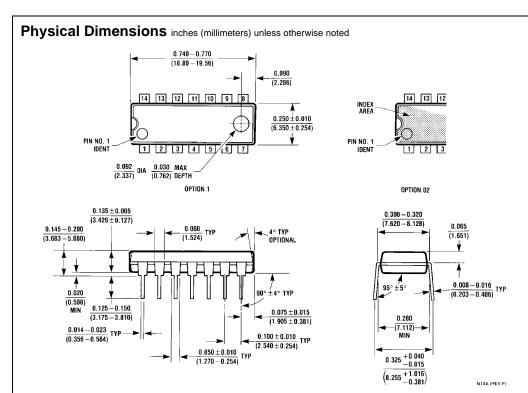
at $V_{CC}=5V$ and $T_A=25^{\circ}C$

Symbol	Parameter	Conditions	$C_L = 15 \text{ pF, } R_L = 400\Omega$		Units
Cymbol			Min	Max	Onno
t _{PLH}	Propagation Delay Time LOW-to-HIGH Level Output	Other Input LOW		23	ns
t _{PHL}	Propagation Delay Time HIGH-to-LOW Level Output	Other Input LOW		17	ns
t _{PLH}	Propagation Delay Time LOW-to-HIGH Level Output	Other Input HIGH		30	ns
t _{PHL}	Propagation Delay Time HIGH-to-LOW Level Output	Sais. ii.patrii Sii		22	ns

Note 3: Not more than one output should be shorted at a time.

Note 4: I_{CCH} is measured with all outputs open, one input of each gate at 4.5V, and the other inputs grounded.

Note 5: I_{CCL} is measured with all outputs open, and all inputs at ground.



14-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide Package Number N14A

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