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Jameco Part Number 49728FSC

DM7417

Hex Buffers with High Voltage Open-Collector Outputs

General Description

This device contains six independent gates each of which performs a buffer function. The open-collector outputs require external pull-up resistors for proper logical operation.

Pull-Up Resistor Equations

$$R_{MAX} = \frac{V_O (\text{Min}) - V_{OH}}{N_1 (I_{OH}) + N_2 (I_{IH})}$$

$$R_{MIN} = \frac{V_O (\text{Max}) - V_{OL}}{I_{OL} - N_3 (I_{IL})}$$

Where: $N_1 (I_{OH})$ = total maximum output high current for all outputs tied to pull-up resistor

$N_2 (I_{IH})$ = total maximum input high current for all inputs tied to pull-up resistor

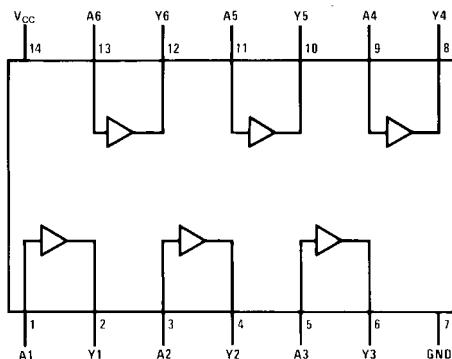
$N_3 (I_{IL})$ = total maximum input low current for all inputs tied to pull-up resistor

Ordering Code:

Order Number	Package Number	Package Description
DM7417M	M14A	14-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150" Narrow
DM7417N	N14A	14-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300" Wide

Devices also available in Tape and Reel. Specify by appending the suffix letter "X" to the ordering code.

Connection Diagram



Function Table

Y = A	
Input	Output
A	Y
L	L
H	H

H = HIGH Logic Level
L = LOW Logic Level

Absolute Maximum Ratings^(Note 1)

Supply Voltage	7V
Input Voltage	5.5V
Output Voltage	15V
Operating Free Air Temperature Range	0°C to +70°C
Storage Temperature Range	-65°C to +150°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
V_{OH}	HIGH Level Output Voltage			15	V
I_{OL}	LOW Level Output Current			40	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
V_I	Input Clamp Voltage	$V_{CC} = \text{Min}$, $I_I = -12 \text{ mA}$			-1.5	V
I_{CEX}	HIGH Level Output Current	$V_{CC} = \text{Min}$, $V_O = 15V$ $V_{IH} = \text{Min}$			250	μA
V_{OL}	LOW Level Output Voltage	$V_{CC} = \text{Min}$, $I_{OL} = \text{Max}$			0.7	V
		$V_{IL} = \text{Max}$			0.4	
I_I	Input Current @ Max Input Voltage	$V_{CC} = \text{Max}$, $V_I = 5.5V$			1	mA
I_{IH}	HIGH Level Input Current	$V_{CC} = \text{Max}$, $V_I = 2.4V$			40	μA
I_{IL}	LOW Level Input Current	$V_{CC} = \text{Max}$, $V_I = 0.4V$			-1.6	mA
I_{CCH}	Supply Current with Outputs HIGH	$V_{CC} = \text{Max}$		29	41	mA
I_{CCL}	Supply Current with Outputs LOW	$V_{CC} = \text{Max}$		21	30	mA

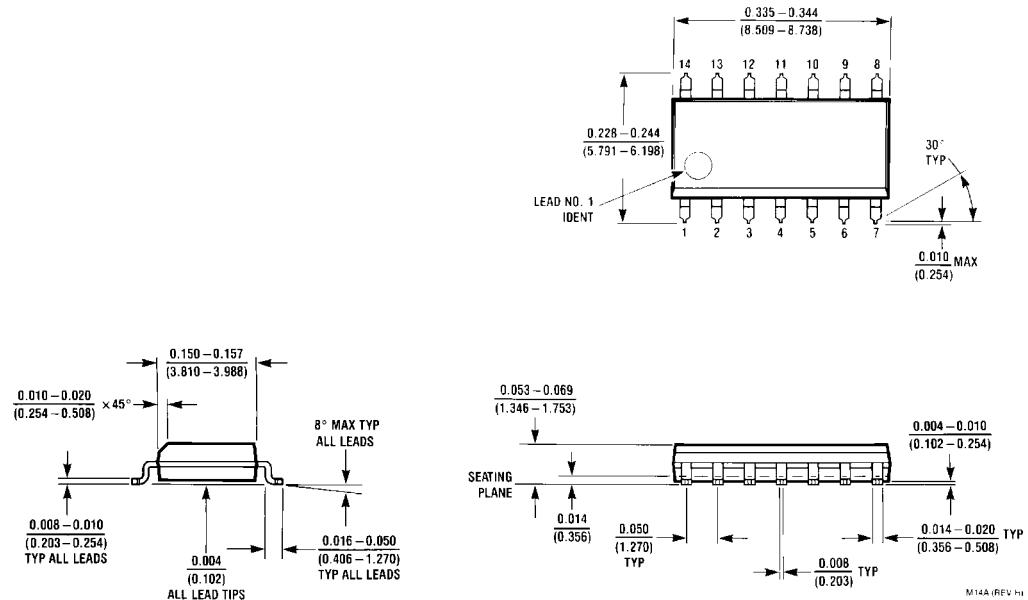
Note 2: All typicals are at $V_{CC} = 5V$, $T_A = 25^\circ\text{C}$.

Switching Characteristics

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

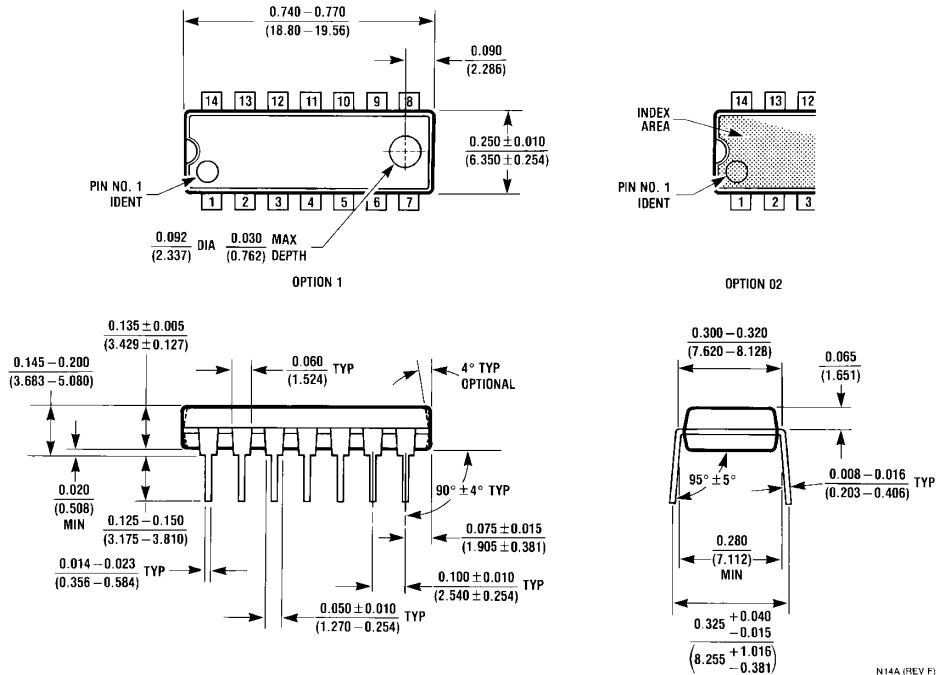
Symbol	Parameter	Conditions	Min	Max	Units
t_{PLH}	Propagation Delay Time LOW-to-HIGH Level Output	$C_L = 15 \text{ pF}$ $R_L = 110\Omega$		10	ns
t_{PHL}	Propagation Delay Time HIGH-to-LOW Level Output			30	ns

Physical Dimensions inches (millimeters) unless otherwise noted



14-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150" Narrow
Package Number M14A

Physical Dimensions inches (millimeters) unless otherwise noted (Continued)



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

N14A (REV F)

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