Level Translators/Buffers

DM5407/DM7407,DM5417/DM7417
hex buffers/drivers

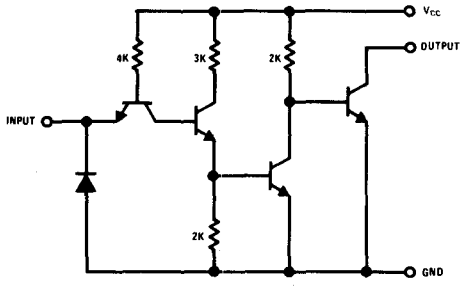
general description

These TTL hex buffers/drivers are fully compatible for use with TTL and DTL logic circuits. Each buffer features high-voltage, open-collector outputs (DM5407/DM7407 30V minimum breakdown and DM5417/DM7417 15V minimum breakdown). These buffers also feature high sink current capability (DM5407, DM5417 30 mA and DM7407, DM7417 40 mA).

features

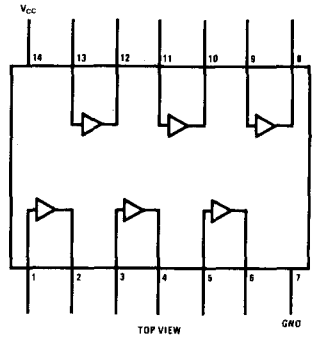
- Input clamp diodes
- High voltage open-collector outputs
  - DM5407/DM7407 30V
  - DM5417/DM7417 15V
- High sink current capability
  - DM5407,DM5417 30 mA
  - DM7407,DM7417 40 mA
- 14 ns typical propagation delay time
- 145 mW typical power dissipation

schematic and connection diagrams



Note: Component values shown are nominal.

Dual-In-Line and Flat Package



Order Number DM5407J, DM7407J, DM5417J or DM7417J
See Package 16

Order Number DM5407N, DM7407N, DM5417N or DM7417N
See Package 22

Order Number DM5407W or DM5417W
See Package 27

absolute maximum ratings (Note 1)

Supply Voltage		7.0V
Input Voltage		5.5V
Output Voltage	DM5407/DM7407	30V
	DM5417/DM7417	15V
Storage Temperature Range		−65°C to +150°C
Lead Temperature (Soldering, 10 sec)		300°C

operating conditions

	MIN	MAX	UNITS
Supply Voltage (V_{CC})			
DM5407,DM5417	4.5	5.5	V
DM7407,DM7417	4.75	5.25	V
Temperature (T_A)			
DM5407,DM5417	−55	+125	°C
DM7407,DM7417	0	70	°C
Output Sink Current			
DM5407,DM5417		30	mA
DM7407,DM7417		40	mA

electrical characteristics (Note 2)

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Logical "1" Input Voltage		2			V
Logical "0" Input Voltage				0.8	V
Output Breakdown Voltage					
DM5407/DM7407	V_{CC} = Max, I_{OFF} = 250μA, V_{IN} = 2.0V	30			V
DM5417/DM7417	V_{CC} = Max, I_{OFF} = 250μA, V_{IN} = 2.0V	15			V
Logical "0" Output Voltage	V_{CC} = Min, V_{IN} = 0.8V, I_{OUT} = Max			0.7	V
	V_{CC} = Min, V_{IN} = 0.8V, I_{OUT} = 16 mA			0.4	V
Logical "1" Input Current	V_{CC} = Max V_{IN} = 2.4V			40	μA
	V_{CC} = Max V_{IN} = 5.5V			1	mA
Logical "0" Input Current	V_{CC} = Max V_{IN} = 0.4V			−1.6	mA
Supply Current — Logical "1"	V_{CC} = Max V_{IN} = 5.0V		29	41	mA
Logical "0"	V_{CC} = Max V_{IN} = 0V		21	30	mA
Input Clamp Voltage	V_{CC} = 5.0V I_{IN} = −12 mA, T_A = 25°C			−1.5	V
Propagation Delay to a Logical "0", t_{pd0}	V_{CC} = 5.0V, T_A = 25°C, C_L = 15 pF, R_L = 110Ω		20	30	ns
Propagation Delay to a Logical "1", t_{pd1}	V_{CC} = 5.0V, T_A = 25°C, C_L = 15 pF, R_L = 110Ω		6	10	ns

Note 1: "Absolute Maximum Ratings" are those values beyond which the operation of the device cannot be guaranteed. Except for "Operating Temperature Range" they are not meant to imply that the devices should be operated at these limits. The table of "Electrical Characteristics" provides conditions for actual device operation.

Note 2: *Unless otherwise specified min/max limits apply across the −55°C to +125°C temperature range for the DM5407, DM5417 and across the 0°C to 70°C range for the DM7407, DM7417. All typicals are given for V_{CC} = 5.0V and T_A = 25°C.*

ac test circuit and switching time waveforms