Line Drivers/Receivers

DM7836/DM8836 quad NOR unified bus receiver

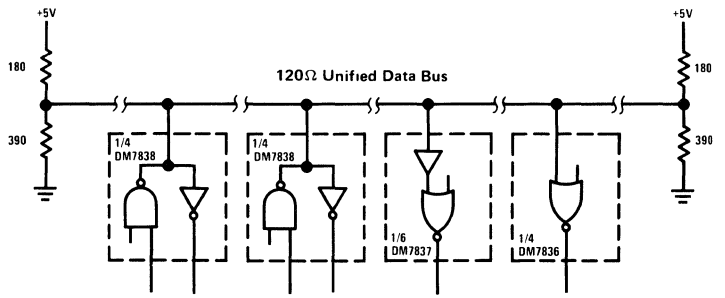
general description

The DM7836/DM8836 are quad 2-input receivers designed for use in bus organized data transmission systems interconnected by terminated 120Ω impedance lines. The external termination is intended to be 180Ω resistor from the bus to the +5V logic supply together with a 390Ω resistor from the bus to ground. The design employs a built-in input hysteresis providing substantial noise immunity. Low input current allows up to 27 driver/receiver pairs to utilize a common bus. This receiver has been specifically configured to replace the SP380 gate pin-for-pin to provide the distinct advantages of the DM7837 receiver design in existing systems. Performance is optimized for systems with bus rise and fall times $\leq 10\mu s$.

features

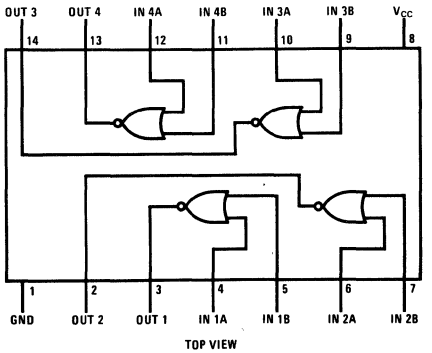
- Plug-in replacement for SP380 gate
- Low input current with normal V_{CC} or $V_{CC} = 0V$ (15 μA typ)
- Built-in input hysteresis (1V typ)
- High noise immunity (2V typ)
- Temperature-insensitive input thresholds track bus logic levels
- DTL/TTL compatible output
- Matched, optimized noise immunity for "1" and "0" levels
- High speed (18 ns typ)

typical application



connection diagram

Dual-In-Line and Flat Package



TOP VIEW

Order Number DM7836J or DM8836J
See Package 16

Order Number DM8836N
See Package 22

Order Number DM7836W or DM8836W
See Package 27

absolute maximum ratings (Note 1)

Supply Voltage	7.0V
Input Voltage	5.5V
Power Dissipation	600 mW
Operating temperature range:	
DM7836	−55°C to +125°C
DM8836	0°C to +70°C
Storage Temperature Range	−65°C to +150°C
Lead Temperature (Soldering, 10 sec)	300°C

electrical characteristics

The following apply for $V_L \leq V_{CC} \leq V_H$, $T_L \leq T_A \leq T_H$, unless otherwise specified (Note 2)

PARAMETER	INPUT	OUTPUT	COMMENTS	MIN	TYP	MAX	UNIT
High Level Input Threshold							
DM7836	V_{TH}	16 mA	Output < 0 4V	1.65	2 25	2 65	V
DM8836	V_{TH}	16 mA	Output < 0 4V	1.80	2.25	2 50	V
Low Level Input Threshold							
DM7836	V_{TH}	−400 μA	Output > 2 4V	0.97	1 30	1 63	V
DM8836	V_{TH}	−400 μA	Output > 2 4V	1.05	1.30	1.55	V
Maximum Input Current	4V		$V_{CC} = V_H$		15	50	μA
Maximum Input Current	4V		$V_{CC} = 0V$		1	50	μA
Logic "1" Output Voltage	0 5V	−400 μA		2 4			V
Logic "0" Output Voltage	4V	16 mA			0 25	0 4	V
Output Short Circuit Current	0 5V	0V	$V_{CC} = V_H$	−18		−55	mA
Power Supply Current	4V		Per Package		25	40	mA
Input Clamp Diode Voltage	−12 mA		$T_A = 25°C$		−1	−1.5	V
The following apply for $V_{CC} = 5V$, $T_A = 25°C$ unless otherwise specified							
Propagation Delays							
Input to Logic "1" Output			Note 3		20	30	ns
Input to Logic "0" Output			Note 4		18	30	ns

Note 1: Voltage values are with respect to network ground terminal. Positive current is defined as current into the reference pin.
Note 2: For DM7836: $V_L = 4.5V$, $V_H = 5.5V$, $T_L = -55°C$, $T_H = +125°C$.
For DM8836: $V_L = 4.75V$, $V_H = 5.25V$, $T_L = 0°C$, $T_H = +70°C$.
Note 3: Fan-out of 10 load, $C_{LOAD} = 15$ pF total, measured from $V_{IN} = 1.3V$ to $V_{OUT} = 1.5V$, $V_{IN} = 0V$ to 3V pulse.
Note 4: Fan-out of 10 load, $C_{LOAD} = 15$ pF total, measured from $V_{IN} = 2.3V$ to $V_{OUT} = 1.5V$, $V_{IN} = 0V$ to 3V pulse.