



Line Drivers/Receivers

DM7836/DM8836

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DM7836/DM8836 quad NOR unified bus receiver

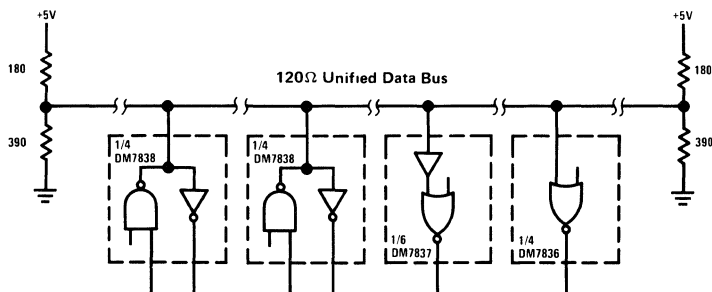
general description

The DM7836/DM8836 are quad 2-input receivers designed for use in bus organized data transmission systems interconnected by terminated 120 Ω impedance lines. The external termination is intended to be 180 Ω resistor from the bus to the +5V logic supply together with a 390 Ω 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 $\leq 10\mu\text{s}$.

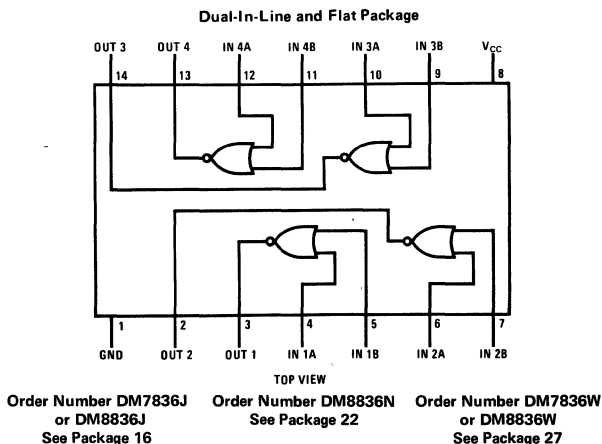
features

- 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



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 μ A	Output > 2.4V	0.97	1.30	1.63	V
DM8836	V_{TH}	-400 μ A	Output > 2.4V	1.05	1.30	1.55	V
Maximum Input Current	4V		$V_{CC} = V_H$		15	50	μ A
Maximum Input Current	4V		$V_{CC} = 0V$		1	50	μ A
Logic "1" Output Voltage	0.5V	-400 μ A		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		$T_A = 25^\circ\text{C}$		-1	-1.5	V
The following apply for $V_{CC} = 5V$, $T_A = 25^\circ\text{C}$ 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: $V_L = 4.5V$, $V_H = 5.5V$, $T_L = -55^\circ\text{C}$, $T_H = +125^\circ\text{C}$.

For DM8836: $V_L = 4.75V$, $V_H = 5.25V$, $T_L = 0^\circ\text{C}$, $T_H = +70^\circ\text{C}$.

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.