MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

MC3437

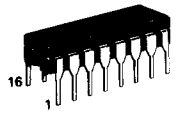
HEX BUS RECEIVER

SILICON MONOLITHIC INTEGRATED CIRCUIT

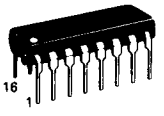
HEX BUS RECEIVER WITH INPUT HYSTERESIS

These high-speed bus receivers are useful in bus organized data transmission systems employing terminated 120 Ω lines. The receivers feature input hysteresis to obtain improved noise immunity. The receivers low input current requirement allows up to 27 driver/receiver pairs to share a common bus. A pair of Disable Inputs are provided. These Disable Inputs along with the receiver outputs are MTTL compatible.

- Built in receiver hysteresis
- Receiver input threshold is not affected by temperature
- Propagation delay time— 20 ns (Typ)
- Direct Replacement for DM8837

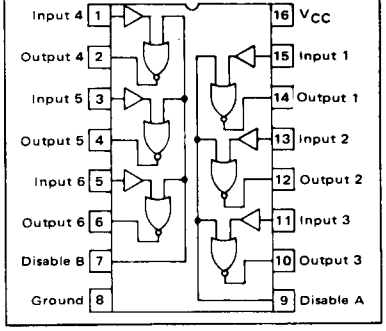


L SUFFIX
CERAMIC PACKAGE
CASE 620



P SUFFIX
PLASTIC PACKAGE
CASE 648

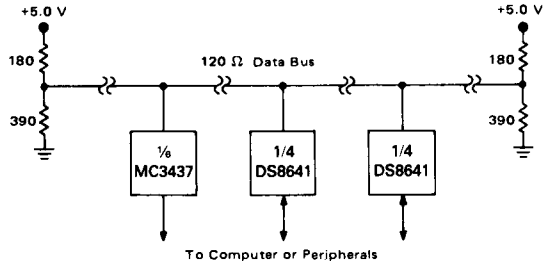
PIN CONNECTIONS



MAXIMUM RATINGS (T_A = 25°C unless otherwise noted.)

Rating	Symbol	Value	Unit
Supply Voltage	V_{CC}	7.0	Vdc
Input Voltage	V_I	5.5	Vdc
Power Dissipation Derate above 25°C	P_D	625 3.85	mW mW/°C
Operating Ambient Temperature Range	T_A	0 to 70	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C

FIGURE 1 — TYPICAL APPLICATION



TRUTH TABLE

Input	Disable	Output
O	L	H
O	H	L
I	L	L
I	H	L

O = < 1.05 V
I = > 2.5 V
H = High Logic State
L = Low Logic State

7

ELECTRICAL CHARACTERISTICS (Unless otherwise noted, specifications apply for $0 \leq T_A \leq 70^oC$ and $4.75\ V \leq V_{CC} \leq 5.25\ V$.)

Characteristic	Symbol	Min	Typ	Max	Unit
Receiver Input Threshold Voltage — High Logic State ($V_{I(DA)} = 0.8\ V$, $I_{OL} = 16\ mA$, $V_{OL} \leq 0.4\ V$)	$V_{ILH(R)}$	1.80	2.25	2.50	V
Receiver Input Threshold Voltage — Low Logic State ($V_{I(DA)} = 0.8\ V$, $I_{OH} = -400\ \mu A$, $V_{OH} \geq 2.4\ V$)	$V_{IHL(R)}$	1.05	1.30	1.55	V
Receiver Input Current ($V_{I(R)} = 4.0\ V$, $V_{CC} = 5.25\ V$) ($V_{I(R)} = 4.0\ V$, $V_{CC} = 0\ V$)	$I_{I(R)}$	 – –	 15 1.0	 50 50	μA
Disable Input Voltage — High Logic State ($V_{I(R)} = 0.5\ V$, $V_{OL} \leq 0.4\ V$, $I_{OL} = 16\ mA$)	$V_{IH(DA)}$	2.0	–	–	V
Disable Input Voltage — Low Logic State ($V_{I(R)} = 0.5\ V$, $V_{OH} \geq 2.4\ V$, $I_{OH} = -400\ \mu A$)	$V_{IL(DA)}$	–	–	0.8	V
Output Voltage — High Logic State ($V_{I(R)} = 0.5\ V$, $V_{IL(DA)} = 0.8\ V$, $I_{OH} = -400\ \mu A$)	V_{OH}	2.4	–	–	V
Output Voltage — Low Logic State ($V_{I(R)} = 4.0\ V$, $V_{IL(DA)} = 0.8\ V$, $I_{OL} = 16\ mA$)	V_{OL}	–	0.25	0.4	V
Disable Input Current — High Logic State ($V_{IH(DA)} = 2.4\ V$) ($V_{IH(DA)} = 5.5\ V$)	$I_{IH(DA)}$	 – –	 – –	 80 2.0	 μA mA
Disable Input Current — Low Logic State ($V_{I(R)} = 4.0\ V$, $V_{IL(DA)} = 0.4\ V$)	$I_{IL(DA)}$	–	–	-3.2	mA
Output Short Circuit Current ($V_{I(R)} = 0.5\ V$, $V_{IL(DA)} = 0\ V$, $V_{CC} = 5.25\ V$)	I_{OS}	-18	–	-55	mA
Power Supply Current ($V_{I(R)} = 0.5\ V$, $V_{IL(DA)} = 0\ V$)	I_{CC}	–	45	65	mA
Input Clamp Diode Voltage ($I_{I(R)} = -12\ mA$, $I_{I(DA)} = -12\ mA$,	V_I	–	-1.0	-1.5	V

SWITCHING CHARACTERISTICS ($T_A = 25^oC$, $V_{CC} = 5.0\ V$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Propagation Delay Time from Receiver Input to High Logic State Output	$t_{PLH(R)}$	–	20	30	ns
Propagation Delay Time from Receiver Input to Low Logic State Output	$t_{PHL(R)}$	–	18	30	ns
Propagation Delay Time from Disable Input to High Logic State Output	$t_{PLH(DA)}$	–	9.0	15	ns
Propagation Delay Time from Disable Input to Low Logic State Output	$t_{PHL(DA)}$	–	4.0	15	ns

7

FIGURE 2 — SWITCHING TIMES TEST CIRCUIT AND WAVEFORMS

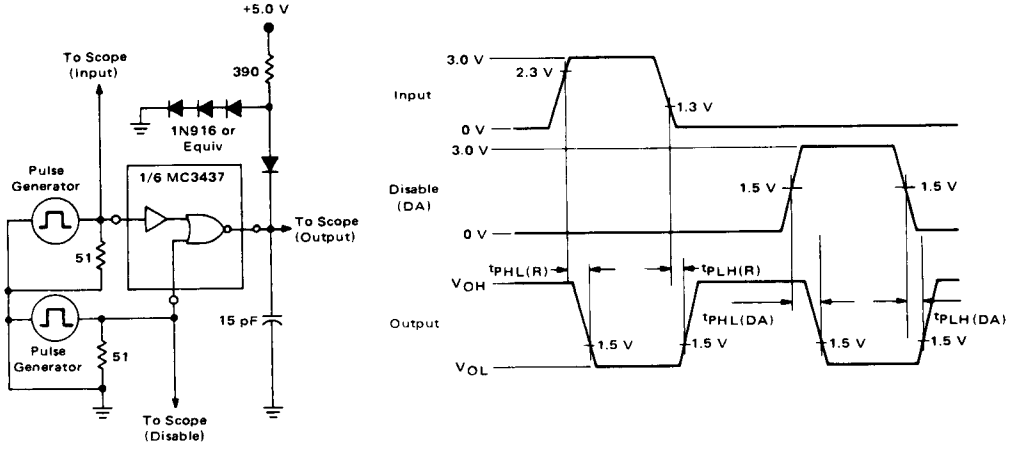


FIGURE 3 — TYPICAL HYSTERESIS

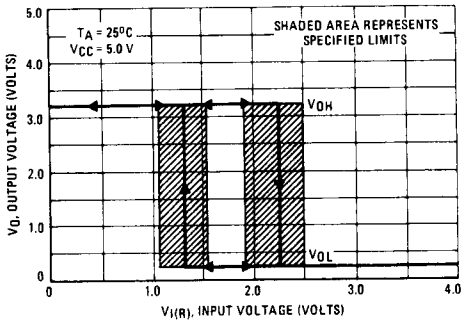


FIGURE 4 — REPRESENTATIVE CIRCUIT SCHEMATIC
(1/6 Shown)