

**MOTOROLA**  
**SEMICONDUCTOR**  
**TECHNICAL DATA**

**MC3437**

**HEX BUS  
RECEIVER**  
**SILICON MONOLITHIC  
INTEGRATED CIRCUIT**

**HEX BUS RECEIVER WITH INPUT HYSTERESIS**

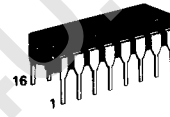
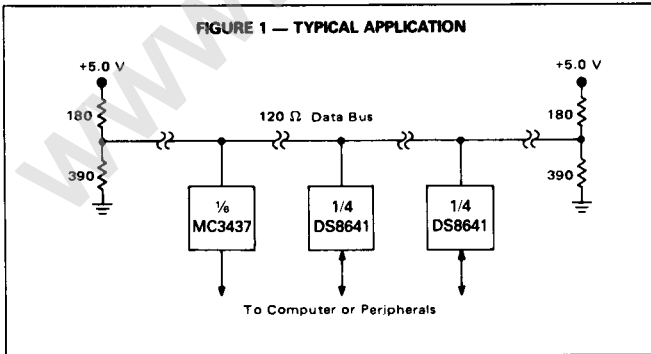
These high-speed bus receivers are useful in bus organized data transmission systems employing terminated 120 Ω lines. The receivers feature input hysteresis to obtain improved noise immunity. The receivers low input current requirement allows up to 27 driver/receiver pairs to share a common bus. A pair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

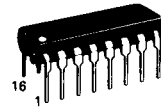
**MAXIMUM RATINGS** (T<sub>A</sub> = 25°C unless otherwise noted.)

Rating	Symbol	Value	Unit
Supply Voltage	V <sub>CC</sub>	7.0	Vdc
Input Voltage	V <sub>I</sub>	5.5	Vdc
Power Dissipation Derate above 25°C	P <sub>D</sub>	625 3.85	mW mW/°C
Operating Ambient Temperature Range	T <sub>A</sub>	0 to 70	°C
Storage Temperature Range	T <sub>stg</sub>	-65 to +150	°C

**FIGURE 1 — TYPICAL APPLICATION**

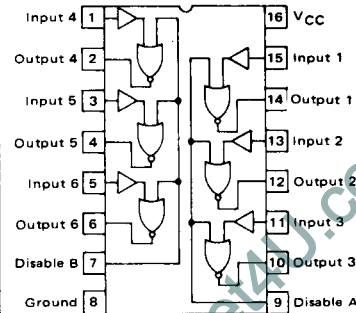


**L SUFFIX  
CERAMIC PACKAGE  
CASE 620**



**P SUFFIX  
PLASTIC PACKAGE  
CASE 648**

**PIN CONNECTIONS**



**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

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

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

**SWITCHING CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$ ,  $V_{CC} = 5.0 \text{ V}$  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

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FIGURE 2 — SWITCHING TIMES TEST CIRCUIT AND WAVEFORMS

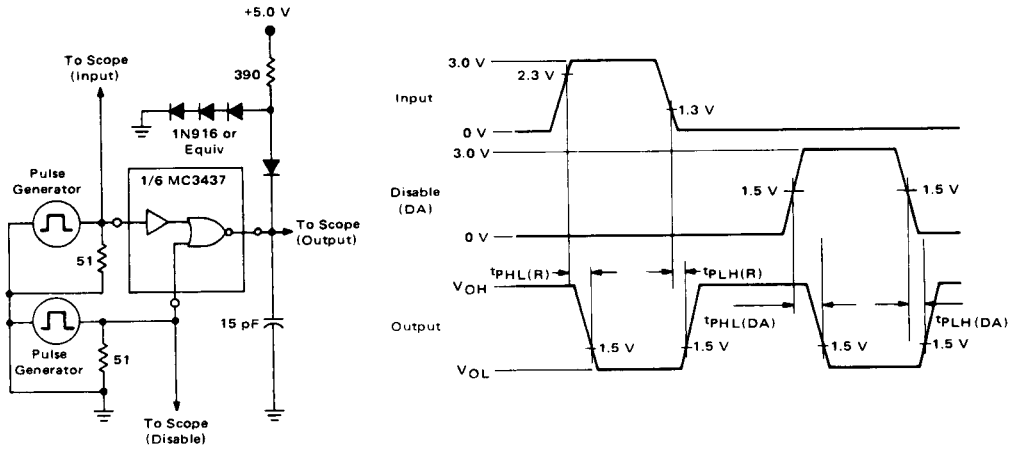


FIGURE 3 — TYPICAL HYSTERESIS

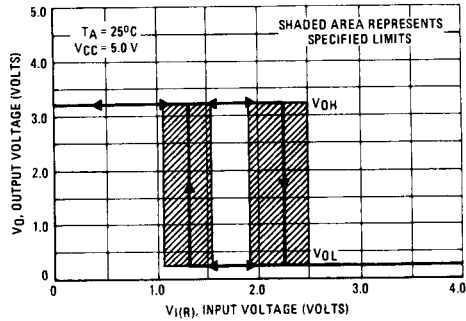


FIGURE 4 — REPRESENTATIVE CIRCUIT SCHEMATIC (1/6 Shown)

