NHi-1565E SOIC (5V or 3.3V)

Dual 1553 Data Bus Transceiver

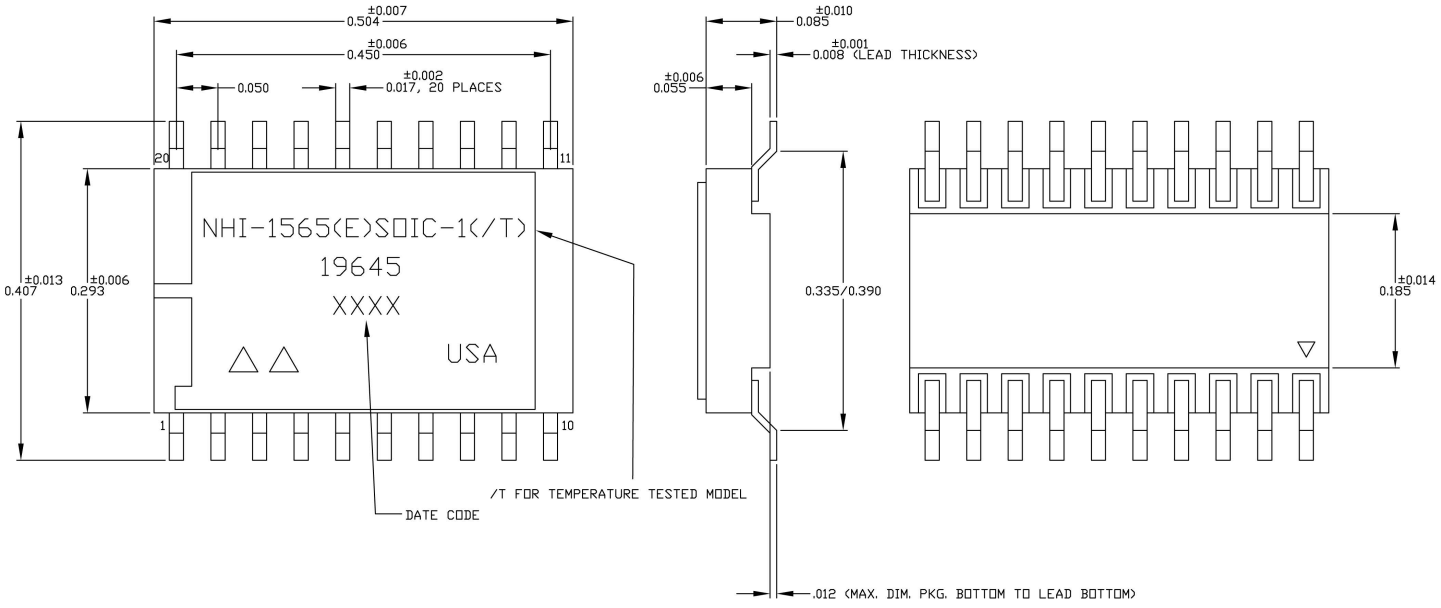
Dual Transceiver in a Plastic
SOIC Encapsulated Package

- **+3.3V or +5V Versions**
- **Single Supply 5V or 3.3V**
- **Output Driver Withstands Short Circuit Fault**
- **Proprietary Monolithic Design Provides Outstanding Thermal Impedance Characteristics**
- **Superior Noise Performance**

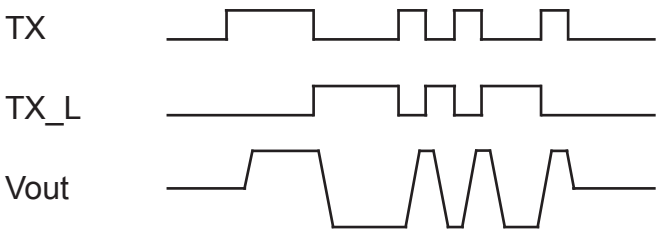
The NHi-1565E SOIC and the NHi-15LV65E SOIC dual transceivers are the only fully compliant 1553/1760 data-bus transceivers in a plastic encapsulated SOIC package.

Each receiver coverts the 1553 Manchester encoded bi-phase data to complementary Rx and RX_L TTL digital outputs. The dual 1553 databus transceiver also provides a “receiver enable” for each channel.

Each transmitter converts TTL Data to analog bi-phase Manchester data. A coupling transformer is used to provide the proper analog signals levels to the 1553 bus or stub. The device provides an independent transmitter inhibit for each channel.

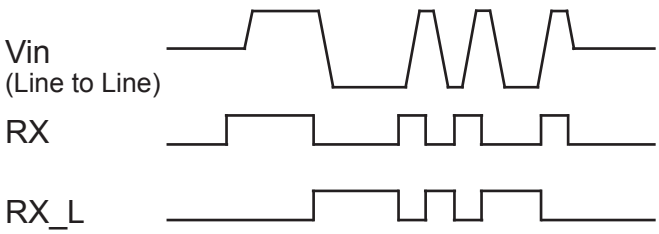


Transmit Waveforms



Transmitter Operation:
A high level input on TXINH will inhibit the transmitter outputs. If the TX & TX_L transmitter inputs are both high or both low, the transmitter is also inhibited.The output drivers are short circuit protected and the device will “fold back” to decrease power dissipation under this condition until the fault is removed.

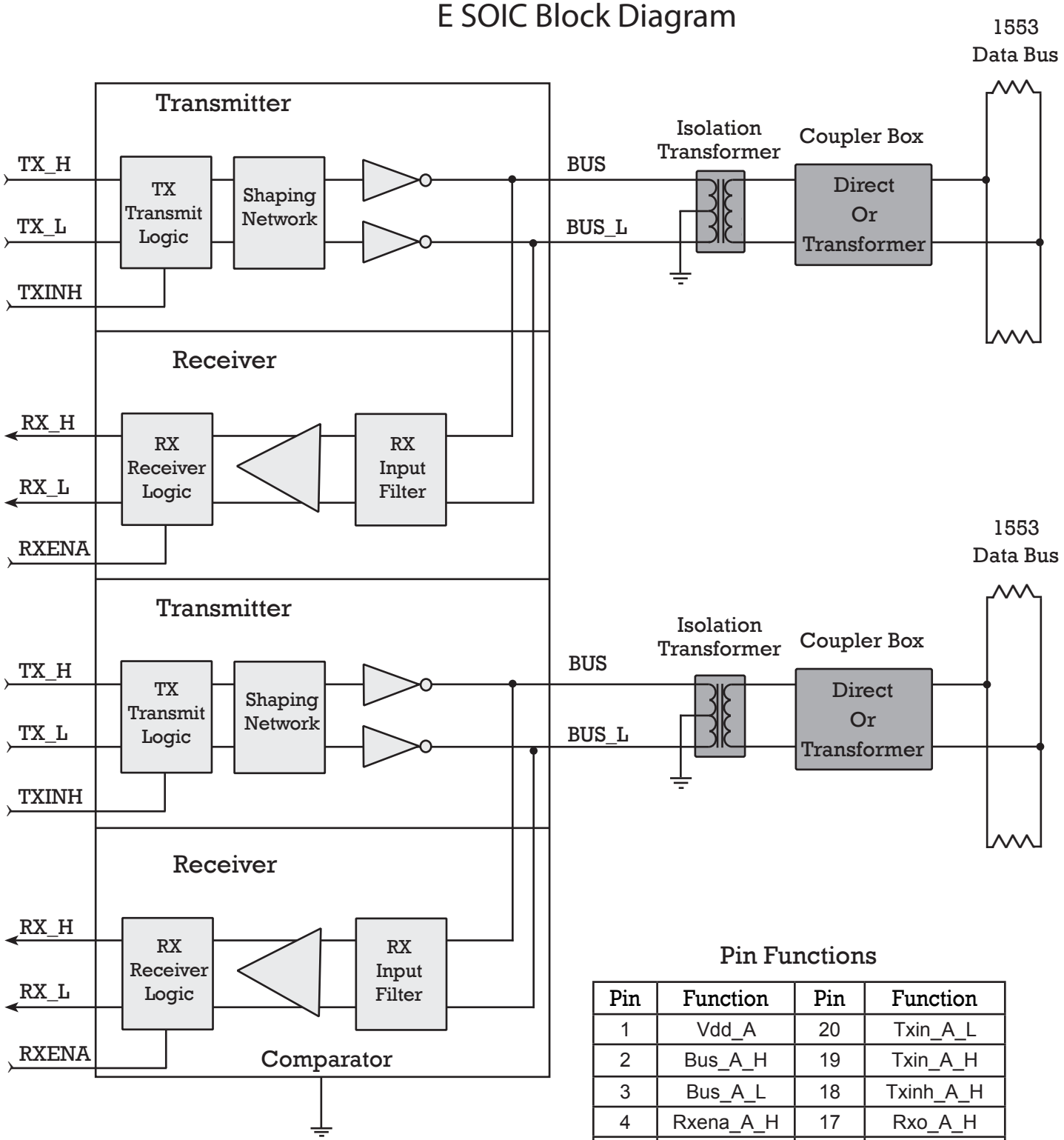
Receive Waveforms



Receive Waveforms:
A low level input on RXENA will disable the receiver outputs RX Y RX_L regardless of bus activity. The receiver output compatibility may be specified as logic 0 or logic 1 when in standby mode.

**See Ordering Information

E SOIC Block Diagram



Pin Functions

Pin	Function	Pin	Function
1	Vdd_A	20	Txin_A_L
2	Bus_A_H	19	Txin_A_H
3	Bus_A_L	18	Txinh_A_H
4	Rxena_A_H	17	Rxo_A_H
5	Gnd_A	16	Rxo_A_L
6	Vdd_B	15	Txin_B_L
7	Bus_B_H	14	Txin_B_L
8	Bus_B_L	13	Txinh_B_H
9	Rxena_B_H	12	Rxo_B_H
10	Gnd_B	11	Rxo_B_L

Specifications

Parameter		MIN	MAX	Units
Power Supply Requirements				
5V Transceiver		4.75	5.5	V
3.3V Transceiver		3.15	3.45	V
Transmitter Current				
5V Transceiver	Idle	13	17	mA
	100%	-	550	mA
3.3V Transceiver	Idle	13	17	mA
	100%	-	766	mA
Logic I/O				
V_{IL}		-0.3	0.8	V
V_{IH}		2.0	3.6	V
V_{OL}			0.4	V
V_{OH}		2.4		V
Power Dissipation				
Vcc = 5.0V	100% Duty Cycle One Transmitter	-	1.2	W
Vcc =3.3V	100% Duty Cycle One Transmitter	-	0.92	W
Transmitter				
Output Voltage	(Stub Voltage)	20	24	V
Offset Voltage		-250	+250	mV
Package				
20 Pin Plastic Encapsulated Package	.275 x .504 x .095			inches

Ordering Information

NHi-15 M LV 65 E SOIC-1/T

Reliability Grade
- T = Full-Temp, -55 to +125° C
- Blank = Industrial, -40 to +85° C

Package Style
- E SOIC = Plastic Encapsulated

Transceiver Type and Decoder Compatability
- 65 = Mil-Std-1553, RX & RX_L, Standby = Logic 0
- 66 = Mil-Std-1553, RX & RX_L, Standby = Logic 1

Version
- LV = 3.3V
- Blank = 5.0V

Device Type
- M = MacAir
- Blank = Standard 1553

Product Information
1-800-DDC-5757
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National Hybrid Incorporated

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