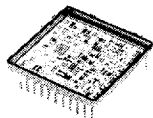
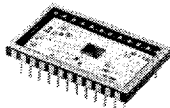


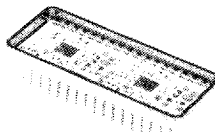
## MIL-STD-1553 DATA BUS SINGLE AND DUAL TRANSCEIVERS



BUS-63102 II



BUS-63105 II



BUS-63125 II

### DESCRIPTION

The BUS-63100 II transceivers are complete transmitter and receiver pairs conforming fully to MIL-STD-1553A and 1553B. Features available with selected models of this high reliability series include: Smiths and Harris interface type choices,  $\pm 12V/\pm 15V$  power supply voltage range, variable threshold levels, and single (24 pin DDIP or square) and completely independent dual redundant (36 pin DDIP) packaging configurations. All models are also available in flatpacks.

The receiver section of the BUS-63100 II series accepts phase-modulated bipolar data from a MIL-STD-1553 Data Bus and produces TTL signal data at its outputs: RX Data Out and RX Data In. These outputs represent positive and negative variations of the input data sig-

nals beyond an internally fixed or externally set threshold level. An external STROBE input enables or disables the receiver outputs.

The transmitter section accepts bipolar TTL signal data at its TX Data and TX Data input lines and produces phase-modulated bipolar data at the TX Data and TX Data outputs. The transmitters' output voltage level is typically 28Vpp to 30Vpp. An external input, INHIBIT, takes priority over the transmitter inputs and disables the transmitter when activated with a logic "1".

The small size and different model capabilities available with the BUS-63100 II series simplify engineering design, making it an excellent choice for interfacing with any MIL-STD-1553 system.

### FEATURES

- CONFORMS FULLY TO MIL-STD-1553A AND 1553B
- SOME MODELS AVAILABLE TO MILITARY (DESC) DRAWINGS
- MODEL CAPABILITIES: SINGLE OR DUAL REDUNDANT PACKAGING  
 - 12V/-15V POWER SUPPLY VOLTAGE RANGE AVAILABLE  
 HARRIS OR SMITHS I/O COMPATIBILITY
- SMALL SIZE:  
 SINGLE - 24 DDIP OR SQUARE  
 DUAL - 36 DDIP FLATPACKS
- LOW POWER
- HIGH RELIABILITY - LSI

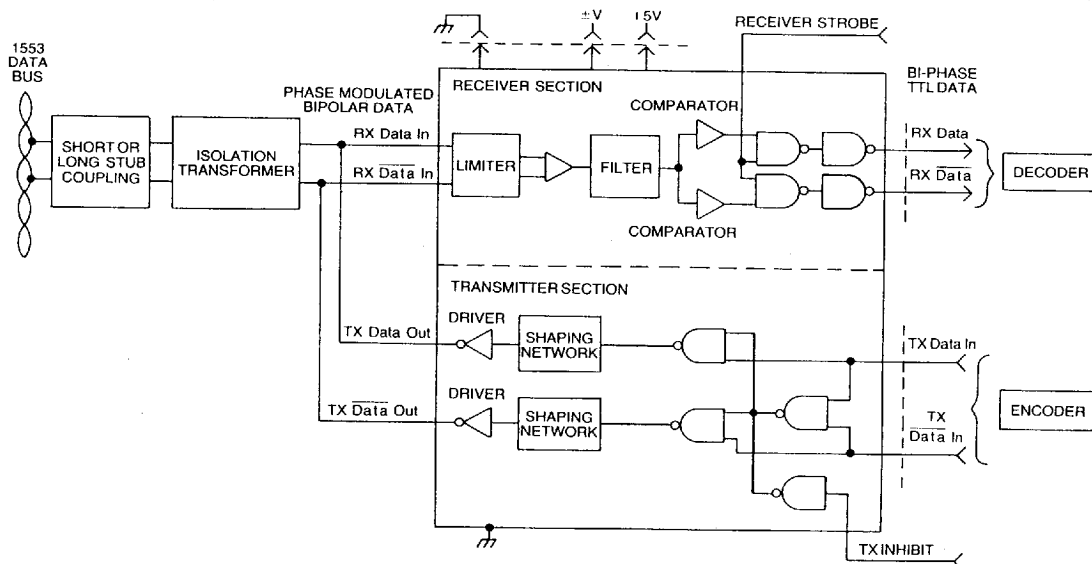


FIGURE 1. BUS-63100 II SERIES BLOCK DIAGRAM

## GENERAL

The BUS-63100 II series offers complete transmitter and receiver pairs packaged in either single or dual redundant form which are designed for use in any MIL-STD-1553 application.

Figure 1 illustrates a BUS-63100 II series transceiver with connections to a MIL-STD-1553 Data Bus. Once transformer isolated, coupling to a MIL-STD-1553 Data Bus can be either short stub (direct) or long stub (transformer). Figure 2 illustrates the different configurations and lists the recommended DDC transformer bus product for use with each model.

## TRANSCIEVER CAPABILITIES

DDC's BUS-63100 II series of transceivers offer a wide range of capabilities (on selected models) which include: power supply voltage levels, packaging configurations, Smiths or Harris type Encoder/Decoder direct compatibility, and internal (pre-set) and/or external (adjustable) threshold levels. The capabilities of the different models are described in the following paragraphs and summarized in table 1.

### Power Supply Voltages

Power supply voltage requirements on BUS-63102 II and BUS-63104 II are met over a range from  $\pm 12V$  to  $\pm 15V$ . All models operate with either  $-12V$  or  $-15V$  supplies. All models require  $+5V$  supply. See table 1.

### Packaging Configurations

Single transceivers, BUS-63102 II and BUS-63104 II are packaged in 24 pin square packages, all other single transceivers are packaged in 24 pin DDIPs. Dual transceivers are packaged in 36 pin DDIPs.

### Encoder/Decoder Compatibility

BUS-63105II, BUS-63107II, BUS-63125 II, and BUS-63127 II are directly compatible to Harris 15530 type of Encoder/Decoders. All other transceivers are directly compatible to Smiths type. Transceivers which are directly compatible with one type can be converted for use with the other by simply switching the output lines, RX Data and RX Data, and inverting their signals by means of external inverting gates.

## Waveforms

All transceivers conform fully to MIL-STD-1553 requirements. BUS-63102 II additionally conforms to MACAIR standards, producing sinusoidal waveforms at 1MHz.

## Threshold Levels

All models offer internal (factory preset) threshold levels. BUS-63102 II and BUS-63104 II additionally offer externally set threshold levels. These external threshold levels are adjustable from 0V to 2V, with the use of two external 10K Ohm potentiometers (see figure 5).

## TRANSMIT OPERATING MODE

The transmitter section accepts encoded TTL data and converts this data to phase-modulated bipolar form by means of a wave-shaping network and driver circuitry. These driver outputs are coupled to a MIL-STD-1553 Data Bus via a transformer which is driven from the TX Data Out and TX Data Out terminals. These output terminals can be put into a high impedance state when transmitting by enabling INHIBIT (logic '1'), or by placing both inputs at the same logic level. Table 2, Transmit Operating Mode, lists the functions for the output data and input data in reference to the state of INHIBIT.

The transceivers are able to operate in a "wraparound" mode. This allows output data to be monitored by the receiver section and returned to the decoder where it can be checked for errors.

TX Data In	TX Data In	TX INHIBIT	DRIVER OUTPUT <sup>(2)</sup>
X <sup>(1)</sup>	X	H	OFF <sup>(3)</sup>
0	0	X	OFF
0	1	L	ON
1	0	L	ON
1	1	X	OFF

Notes:

(1) X = Don't care.

(2) DRIVER OUT = TX Data Out and TX Data Out.

(3) DRIVER OUTPUT terminals are in the high impedance mode during OFF time, independent of INHIBIT status.

## BUS-63100 II SERIES SPECIFICATIONS

Specifications for all transceivers are listed in table 3.

	$\pm 12VDC$ to $\pm 15VDC$	- 12VDC	- 15VDC	24 PIN DDIP	24 PIN SQUARE	36 PIN DDIP	I/O COMPATIBILITY		THRESHOLD		MACAIR	MIL-STD- 1553	FLATPACK MODEL NO.
							SMITHS	HARRIS	INT	EXT			
<b>Single</b>													
BUS-63102II	●				●		●		●	●	●		BUS-63112 II
BUS-63104 II	●				●		●		●	●		●	BUS-63114 II
BUS-63105 II			●	●			●		●			●	BUS-63106 II
BUS-63107 II		●		●			●		●			●	BUS-63108 II
BUS-63115 II			●	●			●		●			●	BUS-63116 II
BUS-63117 II		●		●			●		●			●	BUS-63118 II
<b>Dual</b>													
BUS-63125 II			●			●	●		●			●	BUS-63126 II
BUS-63127 II		●				●	●		●			●	BUS-63128 II
BUS-63135 II			●			●	●		●			●	BUS-63136 II
BUS-63137 II		●				●	●		●			●	BUS-63138 II

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TABLE 3. BUS-63100 II SPECIFICATIONS

TRANSCEIVER NUMBER	BUS-63102 II <sup>(1)</sup>	BUS-63104 II	BUS-63105 II †	BUS-63115 II	BUS-63107 II	BUS-63117 II
CHANNELS	BUS-63112 II	BUS-63114 II	BUS-63106 II	BUS-63116 II	BUS-63108 II	BUS-63118 II
POWER SUPPLIES	Single ±12V to ±15V	Single ±12V to ±15V	Single -15V	Single -15V	Single -12V	Single -12V
ENCODER/DECODER INTERFACE TYPE	Smiths	Smiths	Harris	Smiths	Harris	Smiths
MATCHING TRANSFORMER MODEL	BUS-27765	BUS-27765	BUS-25679	BUS-25679	BUS-29854	BUS-29854
<b>RECEIVER</b>						
Strobe	1 LS Load	*	1TTL	*	*	*
Input Level	40Vpp, Diff, max	*	*	*	*	*
Threshold Level (Internal) <sup>(2)(3)</sup>	0.5Vpp min, 1.0Vpp max	*	0.56Vpp min, 1.0Vpp max	*	*	*
CMRR	40 db, min	*	*	*	*	*
Input Resistance-Diff	7K Ohm, min	*	*	*	*	*
Input Capacitance-Diff	5pf, max	*	*	*	*	*
Output Fan Out	10 TTL Loads	*	*	*	*	*
<b>TRANSMITTER</b>						
TX Inhibit	1 LS Load	*	1TTL	*	*	*
Input Level	1 LS Load	*	1TTL	*	*	*
Output Level (Direct Coupled) <sup>(4)</sup>	29Vpp, nom	*	*	*	*	*
	across 140 Ohm load	*	*	*	*	*
Rise/Fall Time	280ns, typ	150ns, typ	125ns, typ	*	115ns, typ	*
Output Noise	10mVpp, Diff, max	*	*	*	*	*
Output Offset Voltage	±90mVpp, max across 35 Ohm load	*	*	*	*	*
Output Impedance - Non-Transmitting						
Output Resistance-Diff	10K Ohm, min	*	*	*	*	*
Output Capacitance-Diff	5pf, max	*	*	*	*	*
<b>LOGIC</b>						
TTL CMOS Compatible						
All Inputs	2 LS Loads, max	*	1 TTL	*	*	*
All Outputs	10 TTL Loads, min	*	*	*	*	*
<b>POWER SUPPLY REQUIREMENTS</b>						
	-5V ±10%	+12V to +15V ±5%	-12V to -15V ±5%	+5V ±10%	-15V ±5%	+5V ±10%
						-12V ±5%
Non-Transmitting - (typ,max)	30/45mA	24/30mA	51/65mA	30/45mA	20/30mA	30/45mA
Transmitting - 50% duty cycle (typ,max)	30/45mA	85/114mA	118/135mA	30/45mA	95/130mA	30/45mA
Transmitting - 100% duty cycle (typ,max)	30/45mA	140/180mA	175/195mA	30/45mA	170/225mA	30/45mA
<b>THERMAL</b>						
Operating Junction Temperature	-55°C to +160°C	*	*	*	*	*
Operating Case Temperature	-55°C to +125°C	*	*	*	*	*
Storage Temperature	-65°C to +150°C	*	*	*	*	*
Thermal Impedance -						
Junction to Case	40°C/W (Hottest Die)	*	7.0°C/W	*	*	*
Case to Air (typ)	21°C/W (24 Pin Square)	*	30°C/W (24 Pin DDIP)	*	30°C/W (24 Pin DDIP)	*
<b>POWER DISSIPATION</b>						
Single Channel Transmitting	12V Supply	15V Supply	15V Supply	*	12V Supply	*
Non-Transmitting - (typ,max)	1.05/1.37W	1.28/1.58W	0.45/0.68W	*	0.39/0.59W	*
Transmitting - 50% duty cycle (typ,max)	1.86/2.49W	2.47/3.24W	0.85/1.45W	*	0.81/1.36W	*
Transmitting - 100% duty cycle (typ,max)	2.48/3.28W	3.43/4.40W	1.30/2.23W	*	1.30/2.16W	*
<b>POWER DISSIPATION</b>						
Hottest Die <sup>(5)</sup>	12V Supply	15V Supply	15V Supply	*	12V Supply	*
Non-Transmitting - (typ,max)	0.0W	0.0W	0.45/0.68W	*	0.39/0.59W	*
Transmitting - 50% duty cycle (typ,max)	0.12/0.15W	0.15/0.18W	0.85/1.45W	*	0.81/1.36W	*
Transmitting - 100% duty cycle (typ,max)	0.24/0.29W	0.30/0.36W	1.30/2.23W	*	1.30/2.16W	*
<b>MECHANICAL</b>						
Size	24 Pin Square	*	24 Pin DDIP	*	*	*
Dimensions	1.258" x 1.258" x 0.175"	*	1.400" x 0.805" x 0.200"	*	*	*
Size	24 Pin Square Flatpack	*	24 Pin Flatpack	*	*	*
Dimensions	1.255" x 1.255" x 0.160"	*	1.275" x 0.775" x 0.175"	*	*	*
Weight	0.6 oz	*	0.6 oz	*	*	*

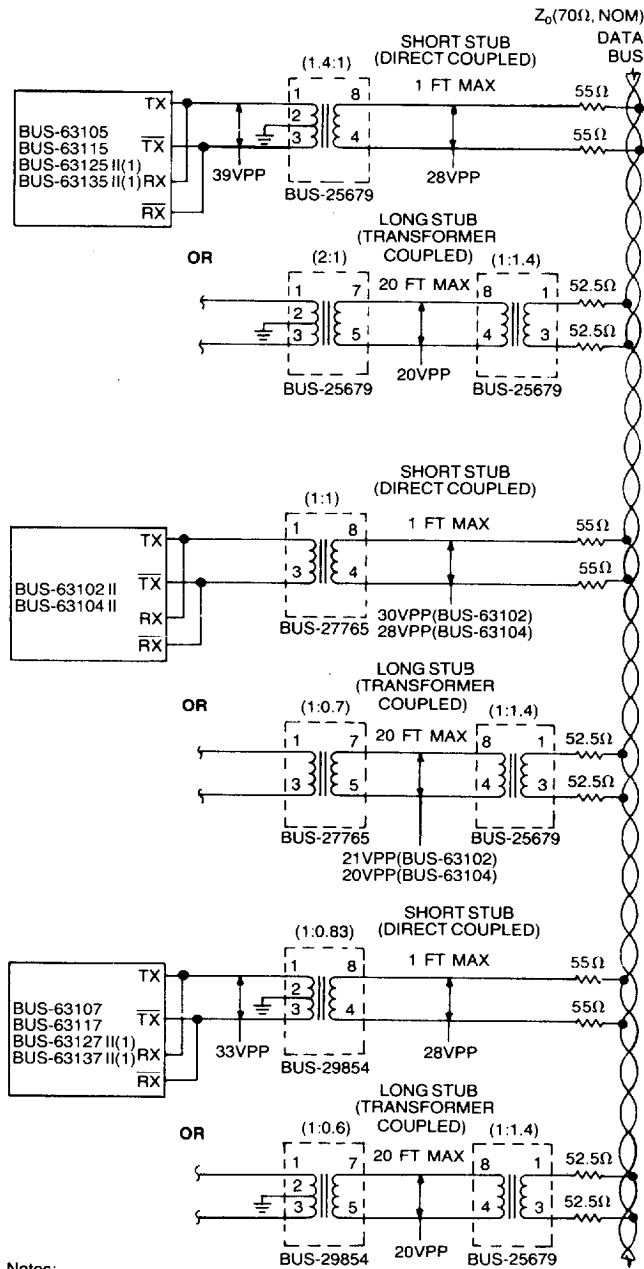
**TABLE 3. BUS-63100 II SPECIFICATIONS (Continued)**

BUS-63125 II †† BUS-63126 II †† Dual -15V Harris BUS-25679	BUS-63135 II BUS-63136 II Dual -15V Smiths BUS-25679	BUS-63127 II BUS-63128 II Dual -12V Harris BUS-29854	BUS-63137 II BUS-63138 II Dual -12V Smiths BUS-29854
1'LS * * * * * *	* * * * * *	* * * * * *	* * * * * *
1'LS 1'LS * * 150ns, typ * * * * * *	* * * * * * * * * *	* * * * * * * * * *	* * * * * * * * * *
2'LS *	* *	* *	* *
(Total Hybrid)		(Total Hybrid)	
+5V±10%	-15V±5%	+5V±10%	-12V±5%
60/90mA 60/90mA 60/90mA	40/60mA 115/160mA 190/255mA	60/90mA 60/90mA 60/90mA	40/60mA 115/160mA 190/255mA
60/90mA	60/90mA	60/90mA	40/60mA 135/185mA 230/305mA
* * *	* * *	* * *	* * *
7°C/W 20°C/W (36 Pin DDIP)	* *	* *	* *
(Total Hybrid, One Channel Transmitting)	(Total Hybrid, One Channel Transmitting)	(Total Hybrid, One Channel Transmitting)	(Total Hybrid, One Channel Transmitting)
0.90/1.35W 1.30/2.13W 1.75/2.91	0.90/1.35W 1.30/2.13W 1.75/2.91W	0.78/1.18W 1.20/1.95W 1.69/2.75W	0.78/1.18W 1.20/1.95W 1.69/2.75W
(Each Channel)	(Each Channel)	(Each Channel)	(Each Channel)
0.45/0.68W 0.85/1.45W 1.30/2.23W	0.45/0.68W 0.85/1.45W 1.30/2.23W	0.39/0.59W 0.81/1.36W 1.30/2.16W	0.39/0.59W 0.81/1.36W 1.30/2.16W
36 Pin DDIP 1.895" x 0.775" x 0.210" 36 Pin Flatpack 1.905" x 0.785" x 0.165" 0.6 oz	* * * *	* * * *	* * * *

**Notes:**

- (1) On BUS-63102 II, filtering eliminates harmonics above 1 MHz. Differential group delay is  $\pm 35$ ns (10KHz-2MHz).
  - (2) The Threshold Level, as referred to in this specification, is meant to be the maximum peak to peak voltage (measured on the Data Bus) that can be applied to the receivers' input without causing the output to change from the OFF state.
  - (3) On BUS-63102 II and BUS-63104 II, external threshold levels are adjustable from 0V to 2V, with two external 10K potentiometers. Connect one pot between pin 5 and GND and the other between pin 12 and GND.
  - (4) On BUS-63102 II, Output Level (direct coupled) is 30V<sub>pp</sub>.
  - (5) On BUS-63102 II and BUS-63104 II, Hottest Die are defined as the driver transistors.
- \* Same as value to the left.  
† BUS-63105 II available as Military (DESC) drawing 5962-86049-02ZC.  
†† BUS-63125 II and BUS-63126 II available as Military (DESC) drawing 5962-87579.

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Notes:

- (1) One half of dual transceivers shown.
- (2) Bus must be terminated with its characteristic impedance at both ends.
- (3) Only one connection can be made from the Transceiver to the MIL-STD Data Bus, either long stub or short stub but not both.

$Z_0(70\Omega, \text{NOM})$

**FIGURE 2. BUS COUPLING CONFIGURATIONS**

**RECEIVER OPERATING MODE**

The receiver section accepts data from a MIL-STD-1553 Data Bus when properly coupled through a transformer in either of the two possible configurations (long or short stub). This data is converted to bi-phase TTL and made available for decoding at the RX Data and  $\overline{\text{RX Data}}$  output terminals. Applying a logic "1" to the STROBE input allows data to pass through to the receiver output. Applying a logic "0" to the STROBE input, turns the output OFF.

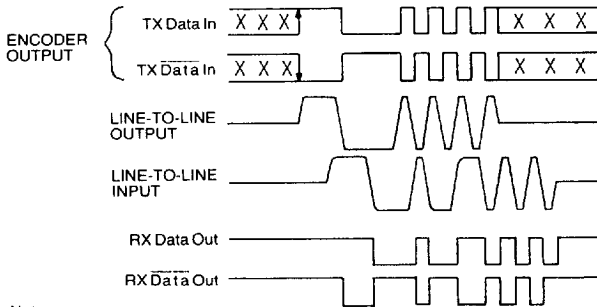
BUS-63102 II, BUS-63104 II, BUS-63115 II, BUS-63135 II, BUS-63117 II, and BUS-63137 II receiver outputs are both at a logic "1" when they are either strobed off, or no signal is being received. This makes these models directly compatible with Smiths type of encoder/decoder. All other models (BUS-63105 II, BUS-63107 II, BUS-63125 II, and BUS-63127 II) receiver outputs are both at

logic "0" when they are either strobed off, or no signal is being received. This makes this type directly compatible with Harris 15530 type of encoder/decoders.

**BUS-63100 SERIES WAVEFORMS**

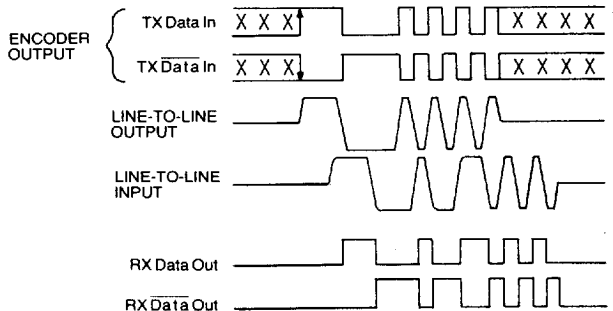
Waveforms for BUS-63100 II series transceivers (BUS-63102 II, BUS-63104 II, BUS-63115 II, BUS-63117 II, BUS-63135 II, and BUS-63137 II) which are directly compatible to Smiths type Encoders/Decoders are illustrated in figure 3. Waveforms for transceivers (BUS-63105 II, BUS-63107 II, BUS-63125 II, and BUS-63127 II) which are directly compatible with Harris type Encoder/Decoders are illustrated in figure 4.

Data and  $\overline{\text{Data}}$  inputs must be complementary waveforms of 50% duty cycle. Care must be taken that the Manchester bi-phase truth table is followed (see timing diagram below).



**FIGURE 3. WAVEFORMS (SMITHS DIRECT COMPATIBILITY)**

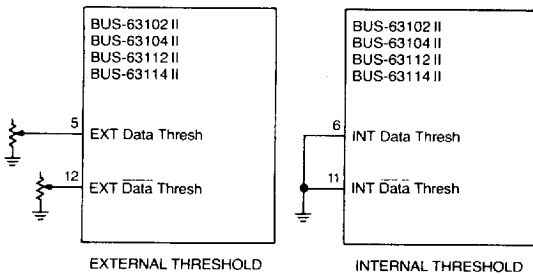
- Notes:
- (1) TX Data In and RX Data Out are TTL signals.
  - (2) TX Data In inputs must be at opposite logic levels during transmission, and at the same logic level when not transmitting.
  - (3) LINE-TO-LINE output voltage is measured between TX Data Out and TX  $\overline{\text{Data Out}}$ .
  - (4) LINE-TO-LINE output voltage for BUS-63102 II are sinusoidal waveforms for 1 MHz operating frequency.
  - (5) LINE-TO-LINE input voltage is measured on the Data Bus.



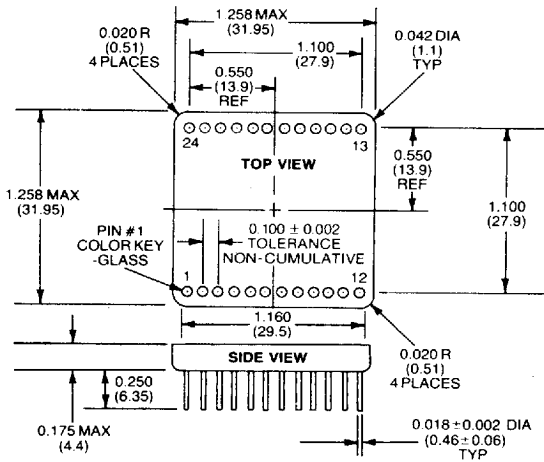
**FIGURE 4. WAVEFORMS (HARRIS DIRECT COMPATIBILITY)**

- Notes:
- (1) TX Data In and RX Data Out are TTL signals.
  - (2) TX Data In inputs must be at opposite logic levels during transmission, and at the same logic level when not transmitting.
  - (3) LINE-TO-LINE output voltage is measured between TX Data Out and TX  $\overline{\text{Data Out}}$ .
  - (4) LINE-TO-LINE input voltage is measured on the Data Bus.

**24 PIN SQUARE AND 24 PIN SQUARE FLATPACK TRANSCEIVERS**



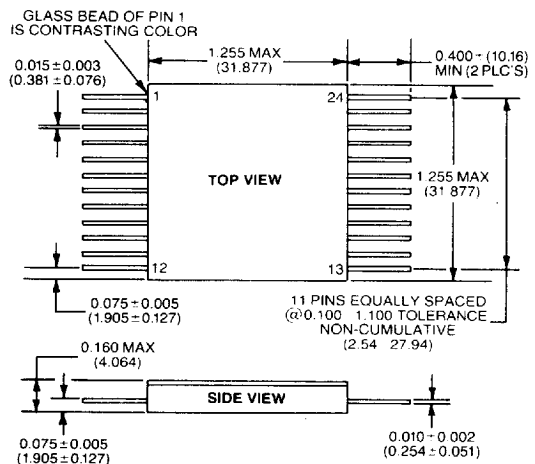
**FIGURE 5. THRESHOLD CONNECTIONS**



**FIGURE 6. BUS-63102 II AND BUS-63104 II MECHANICAL OUTLINE—24 PIN SQUARE PACKAGE**

TABLE 4 BUS-63102 II, BUS-63104 II (24 PIN SQUARE) AND BUS-63112 II, BUS-63114 II (24 PIN SQUARE FLATPACK) PIN CONNECTIONS	
PIN	FUNCTION
1	TX Data Out
2	TX Data Out
3	GND
4	+12V to +15V
5	EXT Data Thresh
6	INT Data Thresh
7	RX Data Out
8	Strobe
9	GND
10	RX Data Out
11	INT Data Thresh
12	EXT Data Thresh
13	+12V to +15V
14	NC
15	RX Data In
16	RX Data In
17	GND
18	GND (case)
19	-12V to -15V
20	+5V
21	TX Inhibit
22	TX Data In
23	TX Data In
24	-12V to -15V

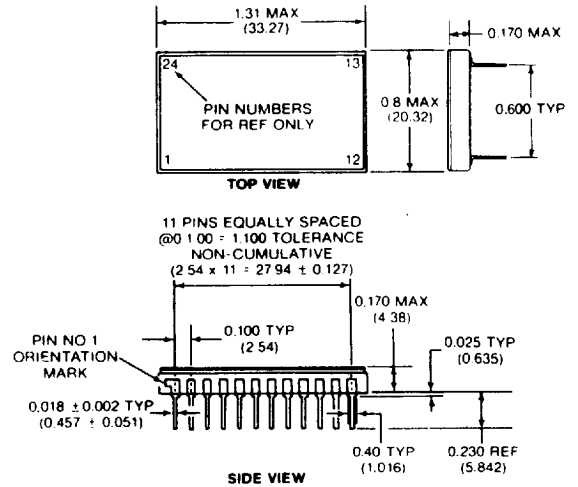
Note:  
For internal threshold levels, ground pins 6 and 11.  
For external threshold, connect two 10K Ohm pots  
(one between pin 5 and GND, and one between pin  
12 and GND). (See figure 5.)



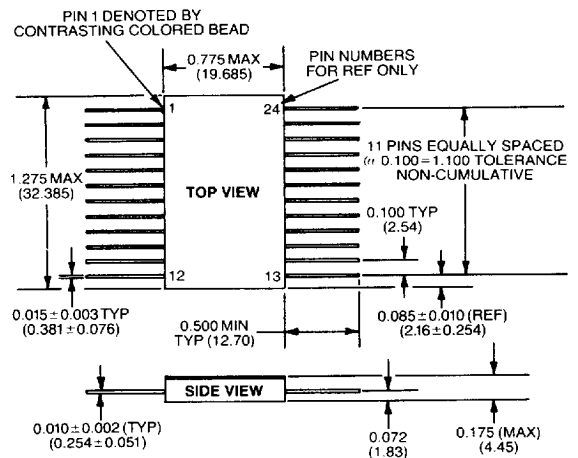
**FIGURE 7. BUS-63112 II AND BUS-63114 II MECHANICAL OUTLINE—24 PIN SQUARE FLATPACK**

**24 PIN DDIP AND 24 PIN FLATPACK TRANSCEIVERS**

<b>TABLE 5</b> <b>BUS-63105 II, BUS-63107II</b> <b>BUS-63115 II, BUS65117II</b> <b>(24 PIN DDIP)</b> <b>AND</b> <b>BUS-63106 II, BUS63108 II</b> <b>BUS-63116 II, BUS-63118 II</b> <b>(24 PIN FLATPACK)</b> <b>PIN CONNECTIONS</b>	
<b>PIN</b>	<b>FUNCTION</b>
1	TX Data Out
2	TX Data Out
3	GND
4	NC
5	NC
6	NC
7	RX Data Out
8	Strobe
9	GND
10	RX Data Out
11	NC
12	NC
13	NC
14	NC
15	RX Data In
16	RX Data In
17	NC
18	GND
19	-12V or -15V
20	+5V
21	TX Inhibit
22	TX Data In
23	TX Data In
24	NC



**FIGURE 8. BUS-63105II, BUS-63107II, BUS-63115II, AND BUS-63117II MECHANICAL OUTLINE-24PIN DDIP**



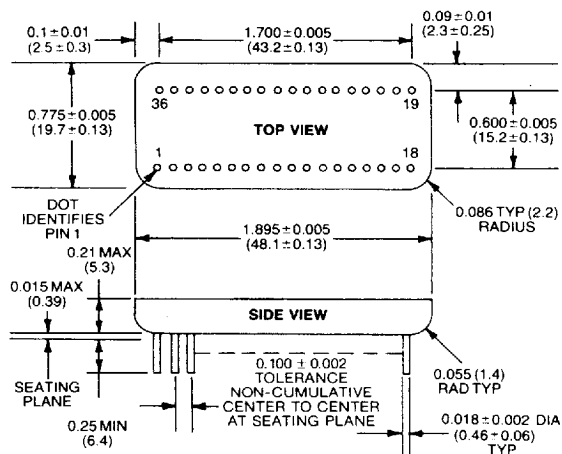
**FIGURE 9. BUS-63106II, BUS-63108II, BUS-63116II, AND BUS-63118II MECHANICAL OUTLINE-24PIN FLATPACK**



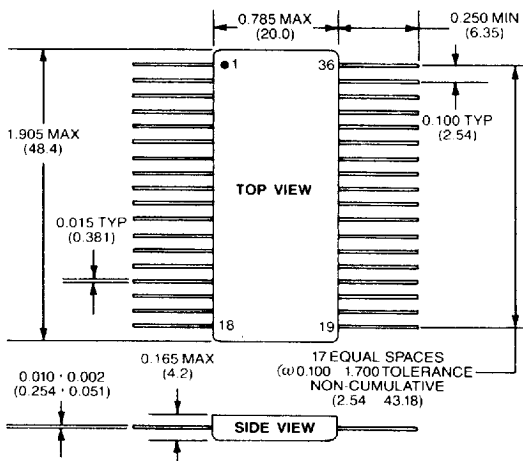
**36 PIN DDIP AND 36 PIN FLATPACK TRANSCEIVERS**

TABLE 6 BUS-63125 II, BUS-63127 II, BUS-63135 II, BUS-65137 II (36 PIN DIP) AND BUS-63126 II, BUS-63128 II, BUS-63136 II, BUS-63138 II, (36 PIN FLATPACK) PIN CONNECTIONS		
PIN	FUNCTION	
1	TX Data Out	*
2	TX Data Out	*
3	GND	*
4	NC	*
5	RX Data Out	*
6	Strobe	*
7	GND	*
8	RX Data Out	*
9	GND (case)	*
10	TX Data Out	**
11	TX Data Out	**
12	GND	**
13	NC	**
14	RX Data Out	**
15	Strobe	**
16	GND	**
17	RX Data Out	**
18	NC	*
19	NC	*
20	RX Data In	**
21	RX Data In	**
22	GND	**
23	-12V or -15V	**
24	+5V	**
25	Inhibit	**
26	TX Data In	**
27	TX Data In	**
28	NC	*
29	RX Data In	*
30	RX Data In	*
31	GND	*
32	-12V or -15V	*
33	-5V	*
34	Inhibit	*
35	TX Data In	*
36	TX Data In	*

Notes:  
(1) -12V for BUS-63127 II, BUS-63128 II,  
BUS-63137 II, and BUS-63138 II.  
(2) -15V for BUS-63125 II, BUS-63126 II,  
BUS-63135 II, BUS-63136 II.  
\*Channel One  
\*\*Channel Two



**FIGURE 10. BUS-63125 II, BUS-63127 II, BUS-63135 II, AND BUS-63137 II MECHANICAL OUTLINE-36 PIN DDIP**



**FIGURE 11. BUS-63126 II, BUS-63128 II, BUS-63136 II, AND BUS-63138 II MECHANICAL OUTLINE-36 PIN FLATPACK**

**ORDERING INFORMATION**

**SINGLE TRANSCEIVERS**

BUS-63105II-110

- Test Criteria**  
0 = None
- Screening**  
0 = Standard DDC Procedures  
1 = Full 883B Screening  
2 = 883B Screening without QCI testing
- Temperature Range**  
1 = -55 to +125°C  
3 = 0 to +70°C
- Power Supply and Packaging**  
5 = -15 V DDIP  
6 = -15 V Flat Pack  
7 = -12 V DDIP  
8 = -12 V Flat Pack
- Encoder/Decoder Compatibility**  
0 = Compatible with Harris Encoder/Decoder  
1 = Compatible with Smith Encoder/Decoder

BUS-63105II also available as DESC drawing 5962-86049-02ZC.

See FIGURE 2 for mating transformer.

BUS-63102II-110

- Test Criteria**  
0 = None
- Screening**  
0 = Standard DDC Procedures  
1 = Full 883B Screening  
2 = 883B Screening without QCI testing
- Temperature Range**  
1 = -55 to +125°C  
3 = 0 to +70°C
- Type**  
2 = Universal Transceiver (MACAIR and 1553) ±15 V to ±15 V power supply range, compatible with Smiths Encoder/Decoder  
4 = 1553, ±12 V to ±15 V power supply range, compatible with Smiths Encoder/Decoder
- Packaging**  
0 = 24-Pin Square DIP  
6 = 24-Pin Square Flat Pack

See FIGURE 2 for mating transformer.

**DUAL TRANSCEIVERS**

BUS-63125II-110

- Test Criteria**  
0 = None
- Screening\***  
0 = Standard DDC Procedures  
1 = Full 883B Screening  
2 = 883B Screening without QCI testing  
3 = 883B, DESC and PIND Testing  
4 = 883B, DESC and Solder Dip  
5 = 883B, DESC, PIND Testing and Solder Dip
- Temperature Range**  
1 = -55 to +125°C  
3 = 0 to +70°C
- Power Supply and Packaging**  
5 = -15 V DDIP  
6 = -15 V Flat Pack  
7 = -12 V DDIP  
8 = -12 V Flat Pack
- Encoder/Decoder Compatibility**  
2 = Compatible with Harris Encoder/Decoder  
3 = Compatible with Smith Encoder/Decoder

\*Available as BUS-63125II-641 (BUS-65612 compatible Transceiver).  
 BUS-63125II and BUS-63126II are available as DESC drawing 5962-86049.  
 See FIGURE 2 for mating transformer.

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