

VARIABLE OUTPUT MIL-STD-1553 TRANSCEIVER

DESCRIPTION

Designed specifically for use in automatic test equipment where a variable transmitter output level is required, the DDC Model BUS-8559 transceiver is a complete transmitter and receiver conforming to MIL standards 1553A and 1553B.

The receiver section accepts phase-modulated bipolar data at the input and produces a bi-phase TTL signal at the output, see FIGURE 1. Outputs, DATA and $\overline{\text{DATA}}$, are positive and negative excursions of the input beyond an internally fixed threshold. The positive and negative thresholds are internally set at the factory for a nominal 1 V pk-pk signal, when measured at point "A" in FIGURE 2. An external strobe input is provided which allows the receiver to be removed from the line. A logic "0" applied to RECEIVER STROBE will disable the receiver output.

The BUS-8559 transmitter section accepts bi-phase TTL data at the input and produces a nominal 0 to 27 V pk-pk differential output across a 145 Ω load. When the transmitter is

coupled to the data bus with the specified transformer*, and isolated (on the data side) with two 55 Ω fault isolation resistors, and loaded with two 70 Ω terminations (plus additional receivers), the data bus signal produced is a nominal 0 to 7.5 V pk-pk when measured at the output side of the 55 Ω resistors.

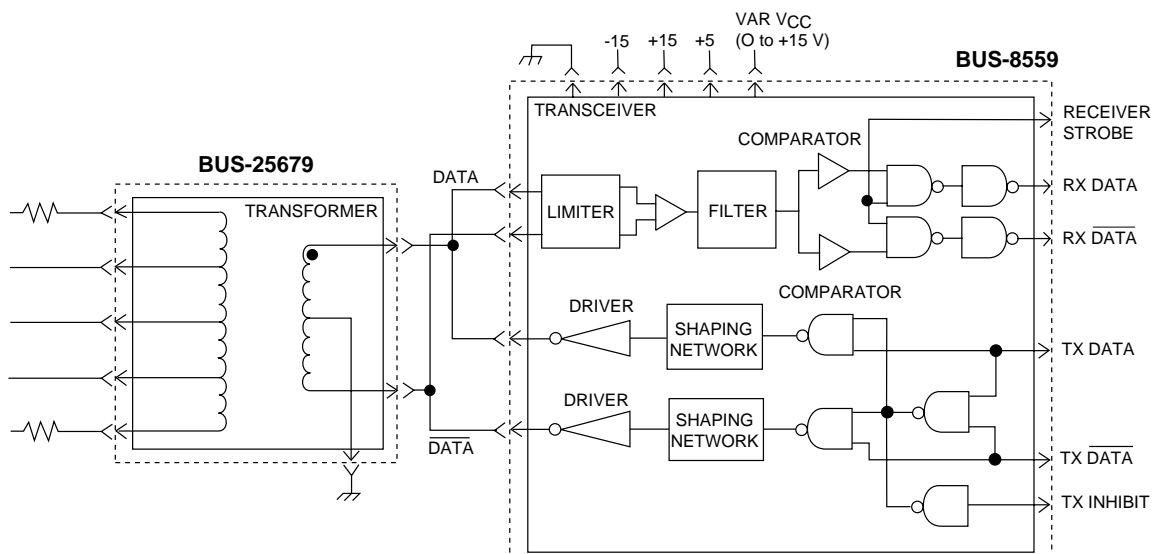
When both DATA and $\overline{\text{DATA}}$ inputs are held low or high, the transmitter presents a high impedance to the line. An external inhibit input is also provided, which allows the transmitter output to be removed from the line. When a logic "1" is applied to the TX INHIBIT input, the transmitter is disabled, and the data inputs are ignored.

APPLICATION

The BUS-8559 is suitable for any MIL-STD-1553 application which requires a transceiver. The BUS-8559 comes in a hermetic, 24-pin DDIP package which measures 1.4 x 0.8 x 0.2 inches.

FEATURES

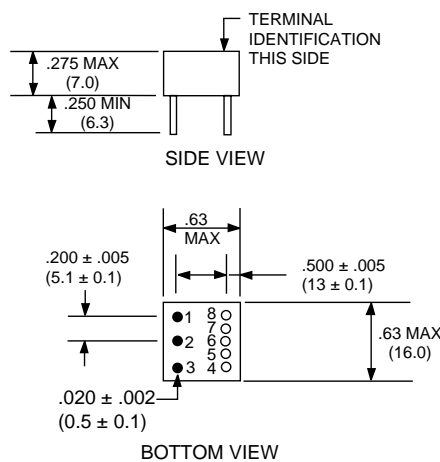
- **Variable Transmitter Output**
- **Transmitter/Receiver in a Single 24-Pin DDIP Hybrid**
- **Very Low Power Dissipation**
- **Improved Receiver Filtering Enhances System Bit Error Rate**
- **Meets MIL-STD-1553A and 1553B**
- **Power Supplies: ± 15 V or $+15$ V and -12 V**



BUS-8559 BLOCK DIAGRAM

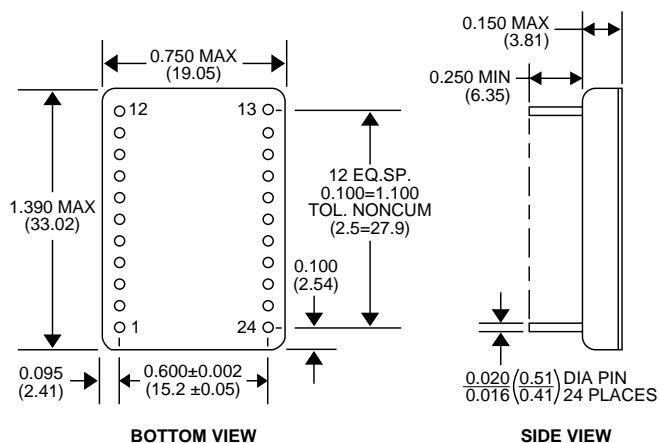
SPECIFICATIONS FOR BUS-8559 HYBRID WITH BUS-25679 TRANSFORMER				
PARAMETER	VALUE			
RECEIVER SECTION				
Input Level	40 V pk-pk differential max			
Input Impedance	4 kΩ differential min			
Threshold Level	1 V pk-pk nominal, internally set (direct mode)			
Output Levels	TTL, 10 LS loads			
Outputs:				
V_{OL}	0.6 V max			
V_{OH}	2.5 V min			
I_{OL}	4 mA max			
I_{OH}	-400 μA max			
TRANSMITTER SECTION				
Input Levels	TTL, 2 LS loads			
Inputs:				
V_{ih}	2 V min			
V_{il}	0.8 V max			
I_{ih}	80 μA max			
I_{il}	-3.2 mA			
Output Level	0-27 V pk-pk nominal across 145 Ω load 0-20 V pk-pk nominal (measured at output of BUS-25679 XFMR output - XFMR coupled stub)			
Rise/Fall Time	130 nsec typ			
Output Noise	10 mV pk-pk differential max			
Variable Vcc	0 to +15 V DC			
POWER SUPPLIES REQUIREMENTS	P.S. VOLTS	STDBY mA	25% mA	100% mA
	+5 V	25 max	22 max	21 max
	+15 V	30 max	30 max	30 max
	-15 V	30 max	30 max	30 max
	Vcc	0	70	180
NOTE: This unit will also operate with ±12 V P.S.				
TEMPERATURE RANGE				
Operating (Case temp.)	-55°C to +125°C			
Storage	-55°C to +135°C			
PHYSICAL CHARACTERISTICS				
Size (24-pin DDIP hybrid)	1.4 x 0.8 x 0.2 inches (36 x 20 x 5 mm).			
Weight	0.4 oz (11 g)			

BUS-8559 PIN FUNCTION TABLE			
PIN	FUNCTION	PIN	FUNCTION
1	TX Data Out	13	+15V DC
2	TX Data Out	14	N.C.
3	Gnd	15	RX Data In
4	N.C.	16	RX Data In
5	N.C.	17	N.C.
6	Variable Vcc	18	GND
7	RX Data Out	19	-15V DC
8	Strobe	20	+5V DC
9	GND	21	TX Inhibit
10	RX Data Out	22	TX Data In
11	N.C.	23	TX Data In
12	N.C.	24	N.C.



- NOTES:
 1. All dimensions are in inches (millimeters).
 2. Pin callouts on bottom view are for reference only.

BUS-25679 TRANSFORMER OUTLINE



BUS-8559 MECHANICAL OUTLINE

ORDERING INFORMATION

BUS-8559-XX0X

Supplemental Process Requirements:

- S = Pre-Cap Source Inspection
- L = Pull Test
- Q = Pull Test and Pre-Cap Inspection
- Blank = None of the Above

Process Requirements:

- 0 = Standard DDC Processing, no Burn-In (See page xiii.)
- 1 = MIL-PRF-38534 Compliant
- 2 = B*
- 3 = MIL-PRF-38534 Compliant with PIND Testing
- 4 = MIL-PRF-38534 Compliant with Solder Dip
- 5 = MIL-PRF-38534 Compliant with PIND Testing and Solder Dip
- 6 = B* with PIND Testing
- 7 = B* with Solder Dip
- 8 = B* with PIND Testing and Solder Dip
- 9 = Standard DDC Processing with Solder Dip, no Burn-In (See page xiii.)

Temperature Grade/Data Requirements:

- 1 = -55°C to +125°C
- 2 = -40°C to +85°C
- 3 = 0°C to +70°C
- 4 = -55°C to +125°C with Variables Test Data
- 5 = -40°C to +85°C with Variables Test Data
- 8 = 0°C to +70°C with Variables Test Data

NOTE: The transceiver and transformer must be ordered as separate parts. Transformer P/N: BUS-25679

The information in this data sheet is believed to be accurate; however, no responsibility is assumed by Data Device Corporation for its use, and no license or rights are granted by implication or otherwise in connection therewith. Specifications are subject to change without notice.



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