

CTI

CT 2077/CT 3077

Interface Driver

for MIL-STD-1553A & MDC A3818

July 1982

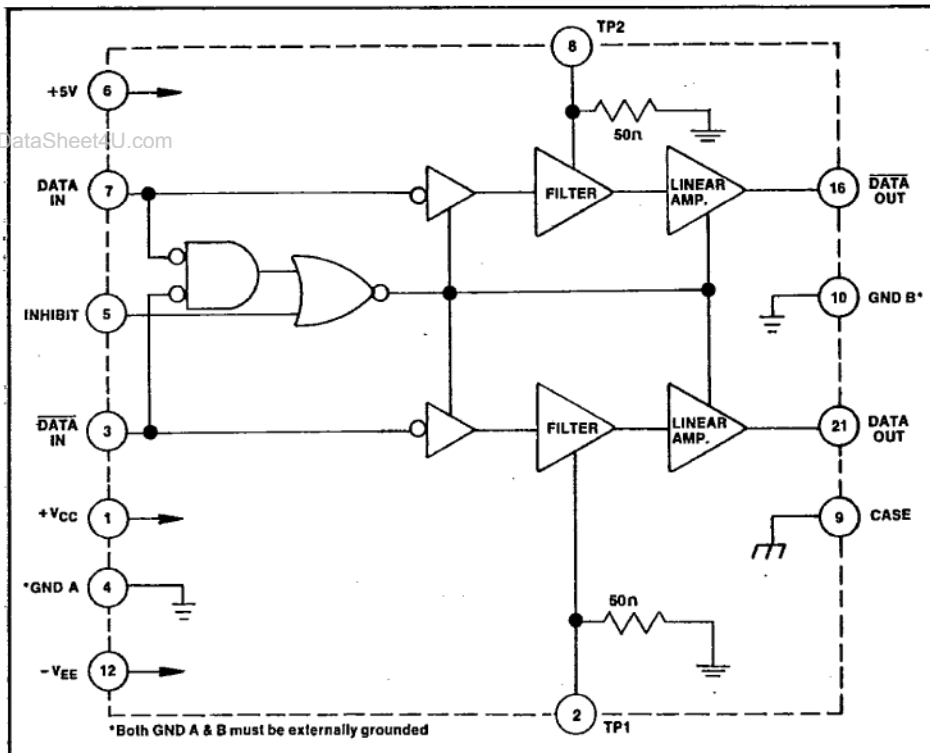


FIGURE 1.
FUNCTIONAL DIAGRAM AND PINOUTS

DESCRIPTION

The CT2077/CT3077 Interface Driver accepts complementary TTL Data at the input and produces a 32 volt nominal peak-to-peak differential signal at the output. When coupled to the Data Bus with a 1:1 transformer, isolated on the Data Bus side with two 52.5 ohm fault isolation resistors, and loaded by two 70 ohm terminations plus additional receivers, the Data Bus signal produced is 6.5 volts peak-to-peak nominal.

When both "Data" and "Data" inputs are held low, the driver output becomes a high impedance and is "removed" from the line. In addition, an overriding "Inhibit" input provides for removal of the

driver output from the line. A logic "1" applied to the "Inhibit" takes priority over the condition of the data inputs and disables the driver.

The signal is filtered to suppress harmonics above 1 MHz, and the output amplifiers are linear.

Both the CT2077/CT3077 Driver and CT3078 Receiver may be connected to the same winding of the 1:1 transformer as shown in Figure 2. The transformer windings must have a self impedance greater than 5000 ohms from 100 kHz to 1MHz and must be capable of driving 13 volts r.m.s. into a 135 ohm load from 200 kHz to 1 MHz without distortion.

FEATURES

- Meets MIL-STD-1553A and MDC A3818 Interface Specifications
- Compatible with CT3078 Receiver
- TTL Compatible
- Meets MIL-STD-883 and MIL-M-38510 Requirements
- Thick Film Hybrid Technology

CTI

CIRCUIT TECHNOLOGY INCORPORATED

<i>Power Supply Requirements</i>	CT2077	CT3077	Standby Current
Logic Supply	+5V \pm 5%	+5V \pm 5%	12 mA max.
+ Vcc Supply	+15V \pm 3%	+12V \pm 3%	40 mA max.
- VEE Supply	-12 to -15V \pm 3%	-12V \pm 3%	35 mA max.
<i>Transmitting Supply Currents</i>	120 mA* (from VCC and VEE supplies)		

*Input Characteristics***

Data and $\overline{\text{Data}}$	TTL Levels, Driving logic must sink 0.7 mA maximum
Inhibit	Driving logic must sink 0.36 mA maximum

Output Characteristics:

Level	32 \pm 4 Volts p-p Differential
Output Impedance	10 ohm maximum at 1 MHz
Harmonic Content	Output filtered to suppress harmonics above 1 MHz
Time Delay Variation	\pm 15 ns from 330 kHz to 1 MHz
Rise and Fall Times	330 ns typical

<i>Inhibit Characteristics</i>	(TTL "1" at "Inhibit" or Data and $\overline{\text{Data}}$ at "0")
Output Noise	<10 mV p-p Differential
Output Impedance	>10 K ohm Differential at 1 MHz

Power Dissipation

1 Watt in STANDBY (INHIBIT) MODE.
See Figure 4 for TRANSMIT MODE

Package

1.25" x 1.25" flat-pack, .100" lead spacing

Thermal Requirement

Case must be held to 110°C maximum for continuous operation

*Typical driving 1:1 transformer at 32 volts p-p at 1 MHz with fault isolation resistors in secondary and two 70 ohm terminations in parallel. (See Figure 4 for typical power dissipation as a function of duty cycle.)

**DATA and $\overline{\text{DATA}}$ inputs must be complementary waveforms, of 50% duty cycle average, with no gate delays between them. It is recommended that those inputs be driven from a "D" type flip-flop.

CT2077/CT3077 1553/A3818 INTERFACE DRIVER

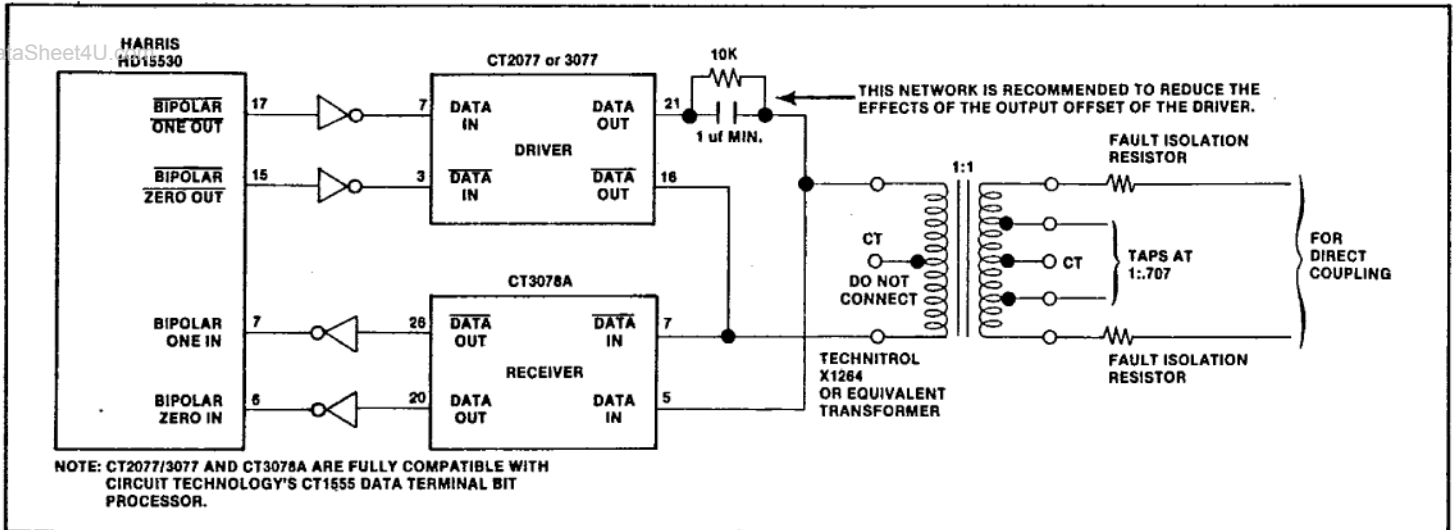


FIGURE 2
TYPICAL DRIVER/RECEIVER CONNECTION

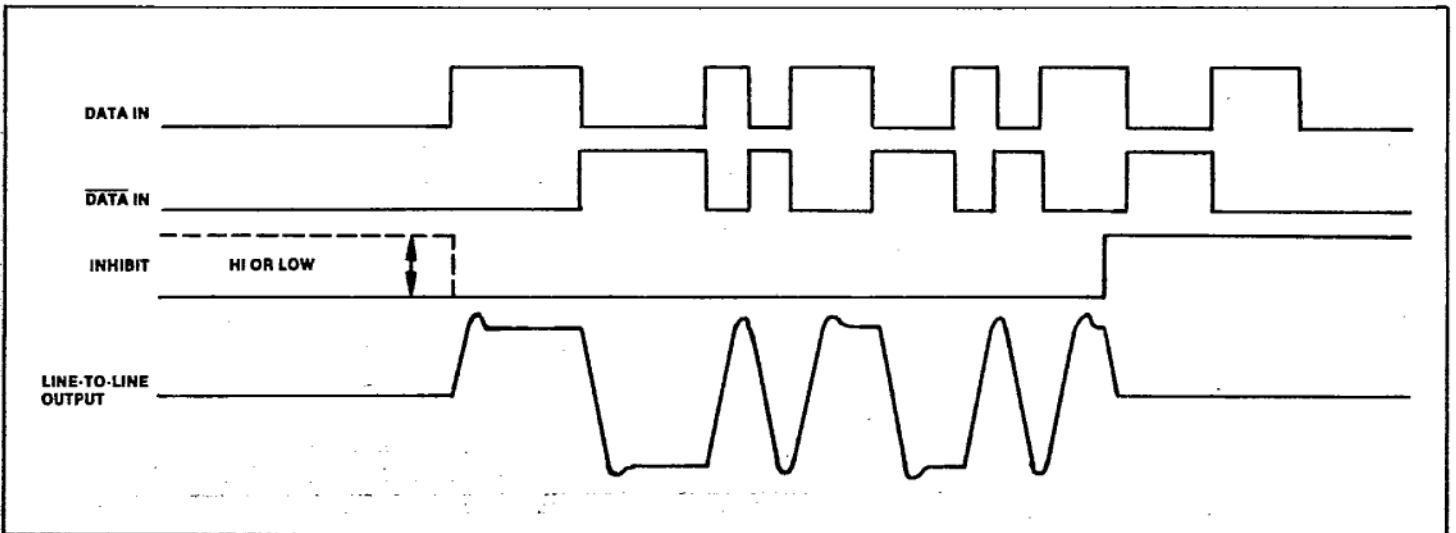


FIGURE 3
DRIVER LOGIC WAVEFORM

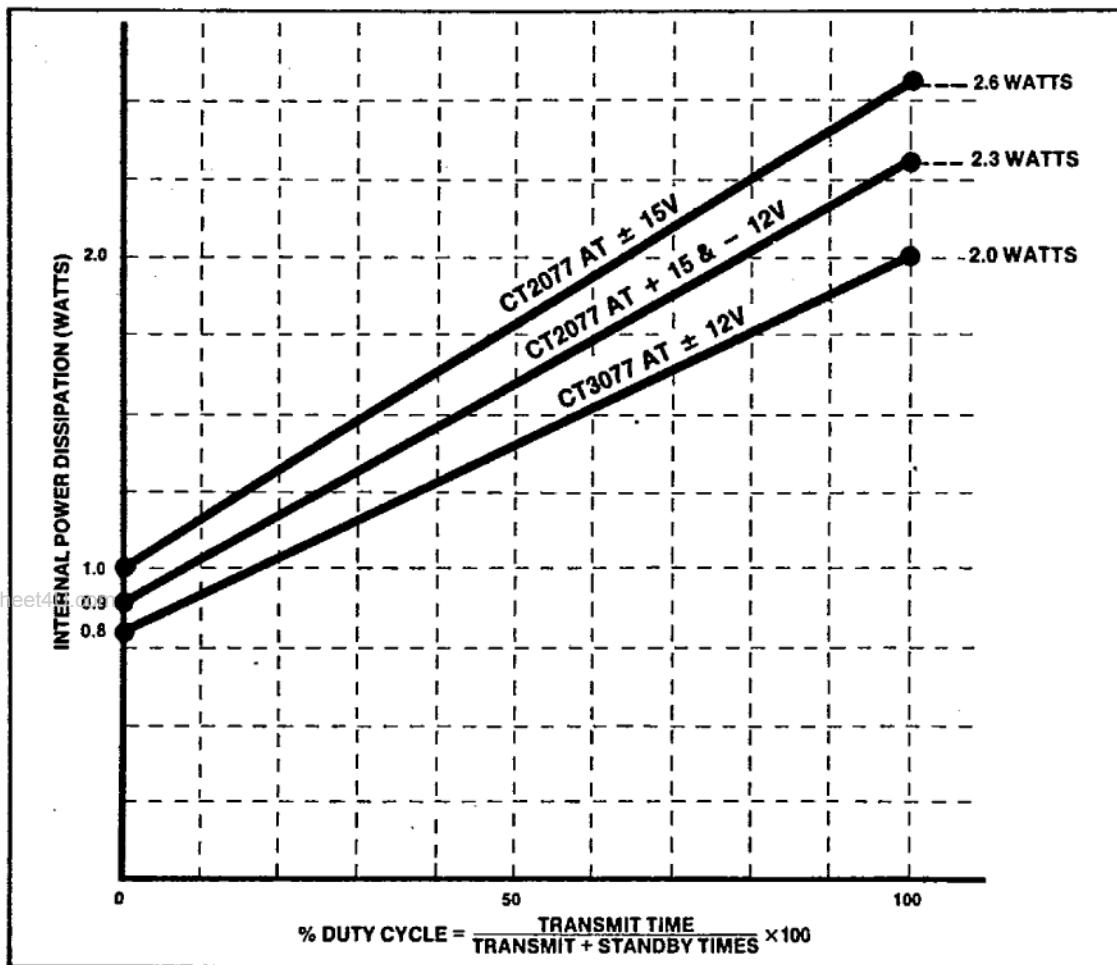


FIGURE 4.
INTERNAL POWER DISSIPATION AT 32 VOLTS P-P OUTPUT INTO A 135 OHM LOAD.

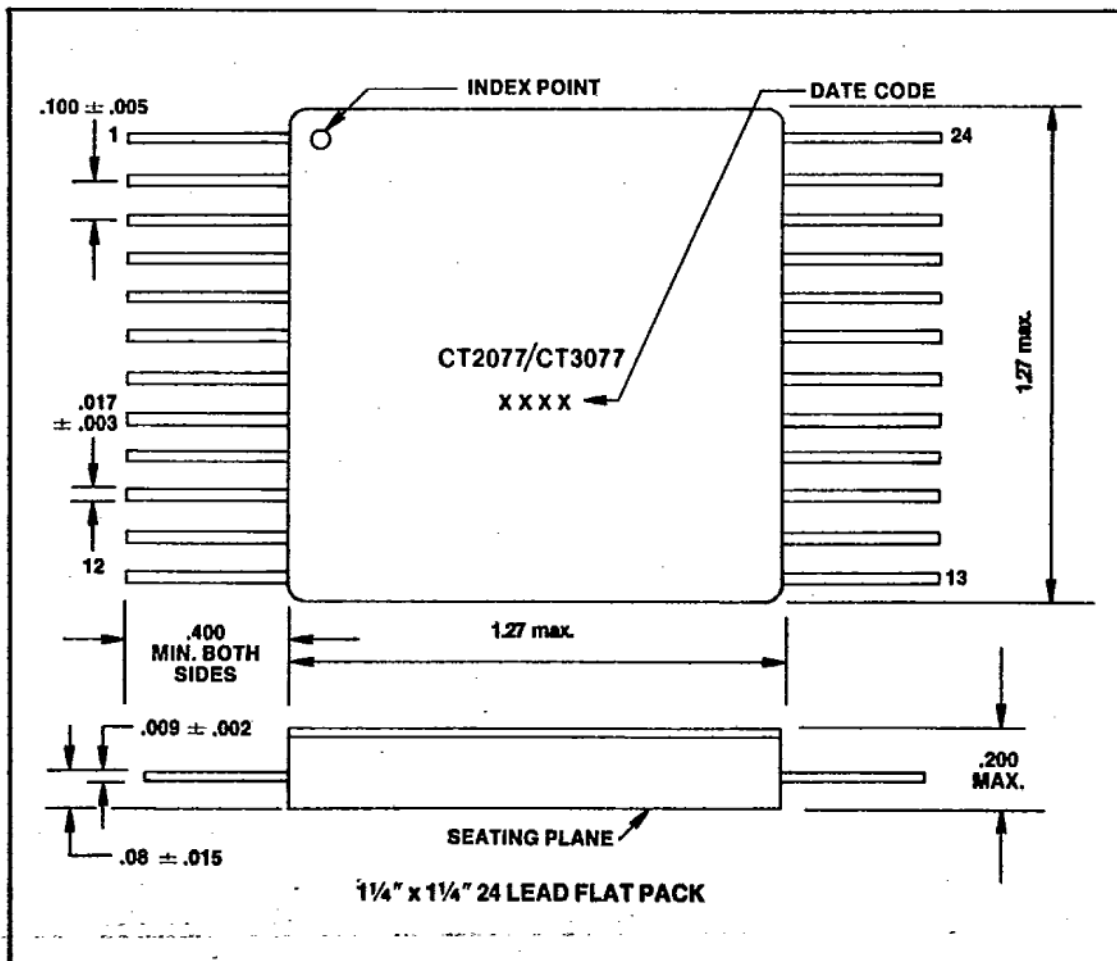


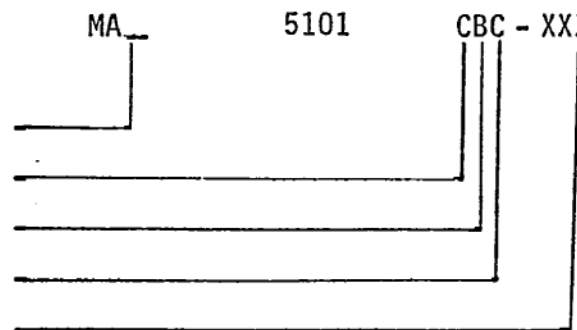
FIGURE 5.
PACKAGE OUTLINE DRAWING



PREFIX DEVICE SUFFIX

MA 5101 CBC - XXX

Add S for Radiation Hard CMOS/SOS
 Package
 Screening & Inspection
 Temperature Range
 Special Requirements/Enhancements



PACKAGE

- A. Pin Grid Array
- C. Ceramic DIL
- E. Epic
- F. Flat Pack
- G. Cerdip
- L. Leadless Chip Carrier
- M. Module
- N. Naked Die
- P. Plastic DIL
- Q. Quad Plastic J-Lead
- R. Qual Cerpack J-Lead
- S. SO Plastic
- X. Special

TEMPERATURE RANGE

- A. Special
- B. 0 to 70°C
- C. -55 to +125°C
- D. -25 to +70°C
- E. -25 to +85°C
- F. -40 to +85°C
- G. -55 to +85°C
- H. -40 to +125°C
- J. -10 to +80°C
- K. 0 to +200°C

SCREENING & INSPECTION

- B. Mil Std-883C Class B
- G. Commercial Hermetic
- L. Commercial Plastic
- S. Mil Std-883C Class S
- T. ESA9000
- X. Special