

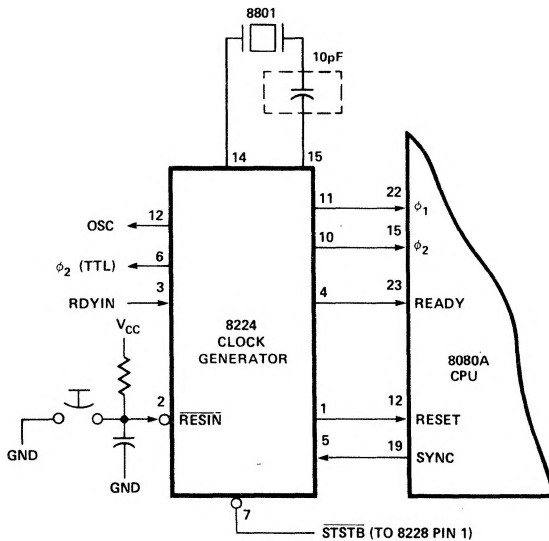


# 8801 CLOCK GENERATOR CRYSTAL FOR 8224/8080A

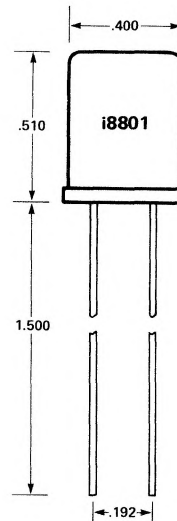
- Specifically Selected For Intel® 8224
- 18.432 MHz for 1.95  $\mu$ s 8080A Cycle
- Simple Generation of All Standard Communication Baud Rates
- Frequency Deviation  $\pm 0.005\%$
- Frequency Mode-Fundamental
- 0 - 70°C Operating Temperature

The 8801 is a quartz crystal specifically selected to operate with the 8224 clock generator and 8080A. It resonates in the fundamental frequency mode at 18.432 MHz. This frequency allows the 8080A at full speed ( $T_{CY} = 488$  ns) to have a cycle of 1.95  $\mu$ s and also simplifies the generation of all standard communication baud rates. The 8801 crystal is exactly matched to the requirements of the 8080A/8224 and provides both high-performance and system flexibility for the microcomputer designer.

## 8801 INTERFACE



## PACKAGING INFORMATION

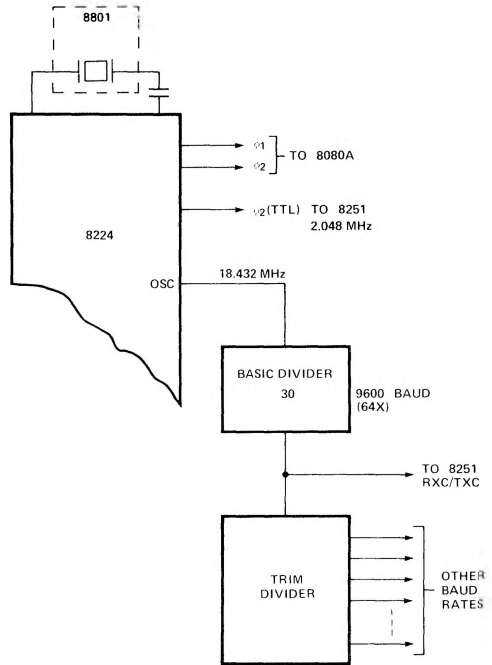


**APPLICATIONS**

The selection of 18.432 MHz provides the 8080A with clocks whose period is 488ns. This allows the 8080A to operate at very close to its maximum specified speed (480 ns). The 8224, when used with the 8801, outputs a signal on its OSC pin that is an approximately symmetrical square wave at a frequency of 18.432 MHz. This frequency signal can be easily divided down to generate an accurate, stable baud rate clock that can be connected directly to the transmitter or receiver clocks of the 8251 USART. This feature allows the designer to support most standard communication interfaces with a minimum of extra hardware.

The chart below (Fig. 1) shows the equivalent baud rates that are generated with the corresponding dividers.

**BLOCK DIAGRAM**



| BAUD RATE<br>64x | BAUD RATE<br>16x | FREQUENCY | BASIC<br>DIVIDER | PLUS TRIM<br>DIVIDER |
|------------------|------------------|-----------|------------------|----------------------|
| 9600             |                  | 614.4 KH  | ÷30              | —                    |
| 4800             | 19.2K            | 307.2 KH  | ÷30              | ÷2                   |
| 2400             | 9600             | 153.6 KH  | ÷30              | ÷4                   |
| 1200             | 4800             | 76.8 KH   | ÷30              | ÷8                   |
| 600              | 2400             | 38.4 KH   | ÷30              | ÷16                  |
| 300              | 1200             | 19.2 KH   | ÷30              | ÷32                  |
|                  | 600              | 9.6 KH    | ÷30              | ÷64                  |
|                  | 300              | 4.8 KH    | ÷30              | ÷128                 |
| *109.1           |                  | 6.982 KH  | ÷30              | ÷88                  |

\*For 109.1 (64x) Baud rate divide 1200 Baud Frequency (76.8 KH) by 11.

Figure 1. Baud Rate Chart

**ELECTRICAL CHARACTERISTICS**

|                             |         |
|-----------------------------|---------|
| Recommended Drive Level     | 5mW     |
| Type of Resonance           | Series  |
| Equivalent Resistance       | 20 ohms |
| Maximum Shunt Capacity      | 7pF     |
| Maximum Frequency Deviation |         |
| 0° - 70°C                   | ±.005%  |
| -55° - 125°C                | ±.002%  |

**ORDERING INFORMATION**

Intel Products may be ordered from either your local Intel sales office or stocking Intel distributor.