

Complete Data Sheet available via web, Harris' home page: <http://www.semi.harris.com> or via Harris AnswerFAX, see Section 17

**8-Digit, Multi-Function,
Frequency Counters/Timers**

August 1997

Features All Versions

- Functions as a Frequency Counter (DC to 10MHz)
- Four Internal Gate Times: 0.01s, 0.1s, 1s, 10s in Frequency Counter Mode
- Directly Drives Digits and Segments of Large Multiplexed LED Displays (Common Anode and Common Cathode Versions)
- Single Nominal 5V Supply Required
- Highly Stable Oscillator, Uses 1MHz or 10MHz Crystal
- Internally Generated Decimal Points, Interdigit Blanking, Leading Zero Blanking and Overflow Indication
- Display Off Mode Turns Off Display and Puts Chip Into Low Power Mode
- Hold and Reset Inputs for Additional Flexibility

Features ICM7216A and ICM7216B

- Functions Also as a Period Counter, Unit Counter, Frequency Ratio Counter or Time Interval Counter
- 1 Cycle, 10 Cycles, 100 Cycles, 1000 Cycles in Period, Frequency Ratio and Time Interval Modes
- Measures Period From 0.5 μ s to 10s

Features ICM7216D

- Decimal Point and Leading Zero Banking May Be Externally Selected.

Ordering Information

PART NUMBER	TEMP. RANGE (°C)	PACKAGE	PKG. NO.
ICM7216AJI	-25 to 85	28 Ld CERDIP	F28.6
ICM7216BIPi	-25 to 85	28 Ld PDIP	E28.6
ICM7216DIPi	-25 to 85	28 Ld PDIP	E28.6

Description

The ICM7216A and ICM7216B are fully integrated Timer Counters with LED display drivers. They combine a high frequency oscillator, a decade timebase counter, an 8-decade data counter and latches, a 7-segment decoder, digit multiplexers and 8-segment and 8-digit drivers which directly drive large multiplexed LED displays. The counter inputs have a maximum frequency of 10MHz in frequency and unit counter modes and 2MHz in the other modes. Both inputs are digital inputs. In many applications, amplification and level shifting will be required to obtain proper digital signals for these inputs.

The ICM7216A and ICM7216B can function as a frequency counter, period counter, frequency ratio (f_A/f_B) counter, time interval counter or as a totalizing counter. The counter uses either a 10MHz or 1MHz quartz crystal timebase. For period and time interval, the 10MHz timebase gives a 0.1 μ s resolution. In period average and time interval average, the resolution can be in the nanosecond range. In the frequency mode, the user can select accumulation times of 0.01s, 0.1s, 1s and 10s. With a 10s accumulation time, the frequency can be displayed to a resolution of 0.1Hz in the least significant digit. There is 0.2s between measurements in all ranges.

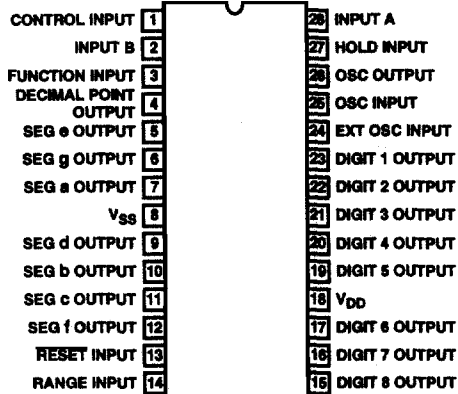
The ICM7216D functions as a frequency counter only, as described above.

All versions of the ICM7216 incorporate leading zero blanking. Frequency is displayed in kHz. In the ICM7216A and ICM7216B, time is displayed in μ s. The display is multiplexed at 500Hz with a 12.2% duty cycle for each digit. The ICM7216A is designed for common anode displays with typical peak segment currents of 25mA. The ICM7216B and ICM7216D are designed for common cathode displays with typical peak segment currents of 12mA. In the display off mode, both digit and segment drivers are turned off, enabling the display to be used for other functions.

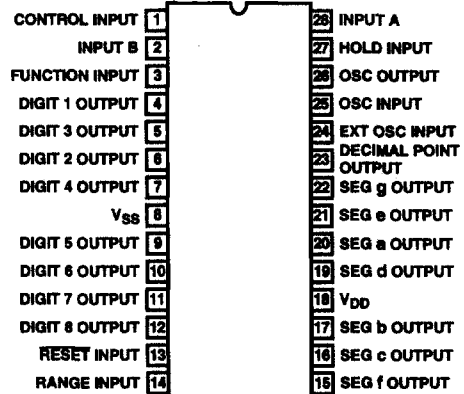
ICM7216A, ICM7216B, ICM7216D

Pinouts

ICM7216A
COMMON ANODE
(CERDIP)
TOP VIEW



ICM7216B
COMMON CATHODE
(PDIP)
TOP VIEW



ICM7216D
COMMON CATHODE
(PDIP)
TOP VIEW

