

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

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## 4-Digit LED Display, Programmable Up/Down Counter

### Features

- Four Decade, Presetable Up-Down Counter with Parallel Zero Detect
- Settable Register with Contents Continuously Compared to Counter
- Directly Drives Multiplexed 7 Segment Common Anode or Common Cathode LED Displays
- On-Board Multiplex Scan Oscillator
- Schmitt Trigger On Count Input
- TTL Compatible BCD I/O Port, Carry/Borrow, Equal, and Zero Outputs
- Display Blank Control for Lower Power Operation; Quiescent Power Dissipation <5mW
- All Terminals Fully Protected Against Static Discharge
- Single 5V Supply Operation

### Description

The ICM7217 is a four digit, presetable up/down counter with an onboard presetable register continuously compared to the counter. The ICM7217 is intended for use in hard-wired applications where thumbwheel switches are used for loading data, and simple SPDT switches are used for chip control.

This circuit provides multiplexed 7 segment LED display outputs, with common anode or common cathode configurations available. Digit and segment drivers are provided to directly drive displays of up to 0.8 inch character height (common anode) at a 25% duty cycle. The frequency of the onboard multiplex oscillator may be controlled with a single capacitor, or the oscillator may be allowed to free run. Leading zeros can be blanked. The data appearing at the 7 segment and BCD outputs is latched; the content of the counter is transferred into the latches under external control by means of the Store pin.

The ICM7217 (common anode) and ICM7217A (common cathode) versions are decade counters, providing a maximum count of 9999, while the ICM7217B (common anode) and ICM7217C (common cathode) are intended for timing purposes, providing a maximum count of 5959.

This circuit provides 3 main outputs; a CARRY/BORROW output, which allows for direct cascading of counters, a ZERO output, which indicates when the count is zero, and an EQUAL output, which indicates when the count is equal to the value contained in the register. Data is multiplexed to and from the device by means of a three-state BCD I/O port. The CARRY/BORROW, EQUAL, ZERO outputs, and the BCD port will each drive one standard TTL load.

To permit operation in noisy environments and to prevent multiple triggering with slowly changing inputs, the count input is provided with a Schmitt trigger.

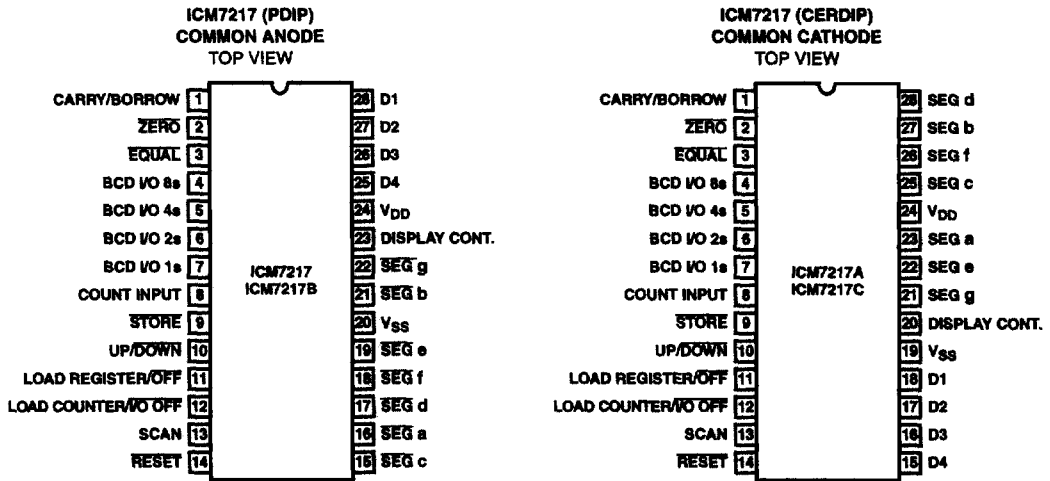
Input frequency is guaranteed to 2MHz, although the device will typically run with  $f_{IN}$  as high as 5MHz. Counting and comparing (EQUAL output) will typically run 750kHz maximum.

### Ordering Information

PART NUMBER	TEMP. RANGE (°C)	PACKAGE	DISPLAY DRIVER TYPE	COUNT OPTION/ MAX COUNT	PKG. NO.
ICM7217A/PI	-25 to 85	28 Ld PDIP	Common Cathode	Decade/9999	E28.6
ICM7217C/PI	-25 to 85	28 Ld PDIP	Common Cathode	Timing/5959	E28.6
ICM7217/JI	-25 to 85	28 Ld CERDIP	Common Anode	Decade/9999	F28.6
ICM7217B/JI	-25 to 85	28 Ld CERDIP	Common Anode	Timing/5959	F28.6

# ICM7217

## Pinouts



## Functional Block Diagram

