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## 4-Digit, ICM7211 (LCD) and ICM7212 (LED) Display Drivers

### Features ICM7211 (LCD)

- Four Digit Non-Multiplexed 7 Segment LCD Display Outputs with Backplane Driver
- Complete Onboard RC Oscillator to Generate Backplane Frequency
- Backplane Input/Output Allows Simple Synchronization of Slave-Devices to a Master
- ICM7211 Devices Provide Separate Digit Select Inputs to Accept Multiplexed BCD Input (Pinout and Functionally Compatible with Siliconix DF411)
- ICM7211M Devices Provide Data and Digit Address Latches Controlled by Chip Select Inputs to Provide a Direct High Speed Processor Interface
- ICM7211 Decodes Binary to Hexadecimal; ICM7211A Decodes Binary to Code B (0-9, Dash, E, H, L, P, Blank)
- ICM7211A Available in Surface Mount Package

### Features ICM7212AM (LED)

- 28 Current-Limited Segment Outputs Provide 4-Digit Non-Multiplexed Direct LED Drive at >5mA Per Segment
- Brightness Input Allows Direct Control of LED Segment Current with a Single Potentiometer or Digitally as a Display Enable
- ICM7212AM Device Provides Same Input Configuration and Output Decoding Options as the ICM7211AM

### Description

The ICM7211 (LCD) and ICM7212 (LED) devices constitute a family of non-multiplexed four-digit seven-segment CMOS display decoder-drivers.

The ICM7211 devices are configured to drive conventional LCD displays by providing a complete RC oscillator, divider chain, backplane driver, and 28 segment outputs.

The ICM7212 devices are configured to drive common-anode LED displays, providing 28 current-controlled, low leakage, open-drain N-Channel outputs. These devices provide a brightness input, which may be used at normal logic levels as a display enable, or with a potentiometer as a continuous display brightness control.

These devices are available with multiplexed or microprocessor input configurations. The multiplexed versions provide four data inputs and four Digit Select inputs. This configuration is suitable for interfacing with multiplexed BCD or binary output devices, such as the ICM7217, ICM7226, and ICL7135. The microprocessor versions provide data input latches and Digit Address latches under control of high-speed Chip Select inputs. These devices simplify the task of implementing a cost-effective alphanumeric seven-segment display for microprocessor systems, without requiring extensive ROM or CPU time for decoding and display updating.

The standard devices will provide two different decoder configurations. The basic device will decode the four bit binary inputs into a seven-segment alphanumeric hexadecimal output. The "A" versions will provide the "Code B" output code, i.e., 0-9, dash, E, H, L, P, blank. Either device will correctly decode true BCD to seven-segment decimal outputs.

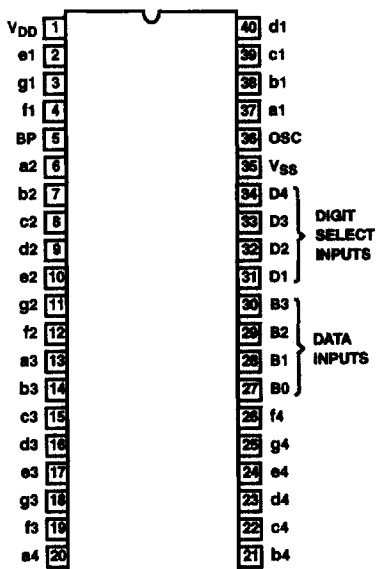
### Ordering Information

PART NUMBER	DISPLAY TYPE	DISPLAY DECODING	INPUT INTERFACING	DISPLAY DRIVE TYPE	TEMP. RANGE (°C)	PACKAGE	PKG. NO.
ICM7211IPL	LCD	Hexadecimal	Multiplexed	Direct Drive	-40 to 85	40 Ld PDIP	E40.6
ICM7211MIPL	LCD	Hexadecimal	Microprocessor	Direct Drive	-40 to 85	40 Ld PDIP	E40.6
ICM7211AIPL	LCD	Code B	Multiplexed	Direct Drive	-40 to 85	40 Ld PDIP	E40.6
ICM7211AMIPL	LCD	Code B	Microprocessor	Direct Drive	-40 to 85	40 Ld PDIP	E40.6
ICM7211AIM44	LCD	Code B	Multiplexed	Direct Drive	-40 to 85	44 Ld MQFP	Q44.10x10
ICM7211AMIM44	LCD	Code B	Microprocessor	Direct Drive	-40 to 85	44 Ld MQFP	Q44.10x10
ICM7212AMPL	LED	Code B	Microprocessor	Common Anode	-40 to 85	40 Ld PDIP	E40.6

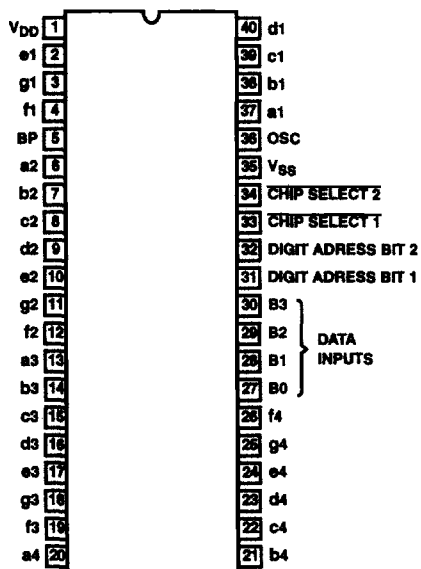
# ICM7211, ICM7212

## Pinouts

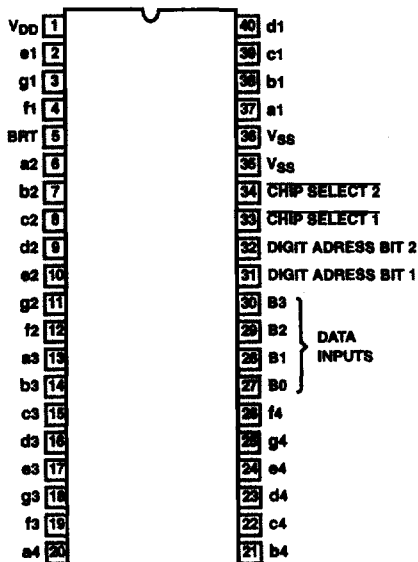
ICM7211, ICM7211A  
(PDIP)  
TOP VIEW



ICM7211M, ICM7211AM  
(PDIP)  
TOP VIEW



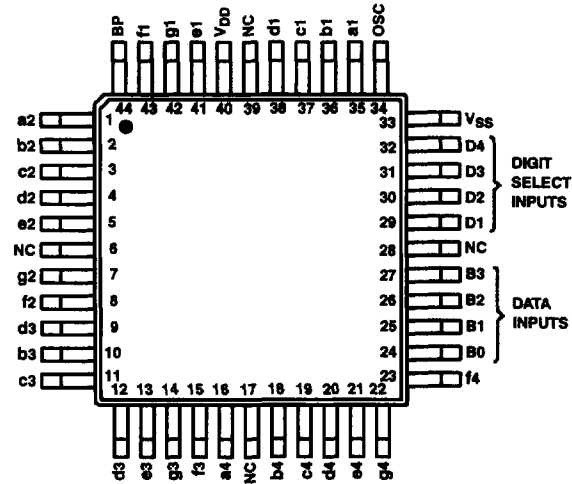
ICM7212AM  
(PDIP)  
TOP VIEW



# ICM7211, ICM7212

## Pinouts (Continued)

ICM7211A  
(MQFP)  
TOP VIEW



ICM7211AM  
(MQFP)  
TOP VIEW

