

CMOS BCD-to-7-Segment Latch Decoder Drivers

High-Voltage Types (20-Volt Rating)

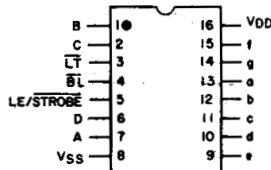


■ CD4511B types are BCD-to-7-segment latch decoder drivers constructed with CMOS logic and n-p-n bipolar transistor output devices on a single monolithic structure. These devices combine the low quiescent power dissipation and high noise immunity features of RCA CMOS with n-p-n bipolar output transistors capable of sourcing up to 25 mA. This capability allows the CD4511B types to drive LED's and other displays directly.

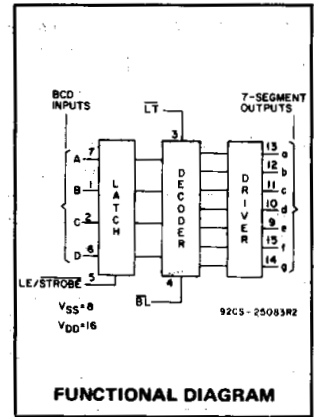
Lamp Test (LT), Blanking (BL), and Latch Enable or Strobe inputs are provided to test the display, shut off or intensity-modulate it, and store or strobe a BCD code, respectively. Several different signals may be multiplexed and displayed when external multiplexing circuitry is used.

The CD4511B types are supplied in 16-lead hermetic dual-in-line ceramic packages (F3A suffix), 16-lead dual-in-line plastic packages (E suffix), 16-lead small-outline packages (NSR suffix), and 16-lead thin shrink small-outline packages (PW and PWR suffixes).

These devices are similar to the type MC14511.



TOP VIEW
92CS-25084RI
CD4511B
TERMINAL ASSIGNMENT



FUNCTIONAL DIAGRAM

Features:

- High-output-sourcing capability up to 25 mA
- Input latches for BCD Code storage
- Lamp Test and Blanking capability
- 7-segment outputs blanked for BCD input codes > 1001
- 100% tested for quiescent current at 20 V
- Max. input current of 1 μ A at 18 V, over full package-temperature range, 100 nA at 18 V and 25°C
- 5-V, 10-V, and 15-V parametric ratings

Applications:

- Driving common-cathode LED displays
- Multiplexing with common-cathode LED displays
- Driving incandescent displays
- Driving low-voltage fluorescent displays

MAXIMUM RATINGS, Absolute-Maximum Values:

| | |
|---|-------------------------------------|
| DC SUPPLY-VOLTAGE RANGE, (V _{DD}) | -0.5V to +20V |
| Voltages referenced to V _{SS} Terminal) | |
| INPUT VOLTAGE RANGE, ALL INPUTS | -0.5V to V _{DD} +0.5V |
| DC INPUT CURRENT, ANY ONE INPUT | ±10mA |
| POWER DISSIPATION, PER PACKAGE (P _D): | |
| For T _A = -55°C to +100°C | 500mW |
| For T _A = +100°C to +125°C | Derate Linearly at 12mW/°C to 200mW |
| DEVICE DISSIPATION PER OUTPUT TRANSISTOR | |
| FOR T _A = FULL PACKAGE-TEMPERATURE RANGE (All Package Types) | 100mW |
| OPERATING-TEMPERATURE RANGE (T _A) | -55°C to +125°C |
| STORAGE TEMPERATURE RANGE (T _{stg}) | -65°C to +150°C |
| LEAD TEMPERATURE (DURING SOLDERING): | |
| At distance 1/16 ± 1/32 inch (1.59 ± 0.79mm) from case for 10s max | +265°C |

OPERATING CONDITIONS AT T_A = 25°C Unless Otherwise Specified

For maximum reliability, nominal operating conditions should be selected so that operation is always within the following ranges

| Characteristic | V _{DD} | Min. | Max. | Units |
|---|-----------------|------|------|-------|
| Supply Voltage Range (T _A): (Full Package-Temperature Range) | - | 3 | 18 | V |
| Set-Up Time (t _S) | 5 | 150 | - | ns |
| | 10 | 70 | - | ns |
| | 15 | 40 | - | ns |
| Hold Time (t _H) | 5 | 0 | - | ns |
| | 10 | 0 | - | ns |
| | 15 | 0 | - | ns |
| Strobe Pulse Width (t _W) | 5 | 400 | - | ns |
| | 10 | 160 | - | ns |
| | 15 | 100 | - | ns |

3
COMMERCIAL CMOS
HIGH VOLTAGE ICs