

LH155R

128-Segment and 93-Common Outputs LCD Driver IC with A Built-in RAM

DESCRIPTION

The LH155R is an LCD driver with a built-in RAM suitable for driving medium/small scale dot-matrix LCD panels, and which is capable of being directly connected to the bus line of a microcomputer. The LH155R stores in the RAM the 8-bit parallel or serial display data transferred from the microcomputer and generates LCD drive signals. Since the LH155R features a bit-map type LCD driver that one bit of data in the display RAM corresponds to one dot in the LCD, there is a lot of freedom in displaying. The LH155R has 128 segment outputs and 93 common outputs in a single chip, making it possible to create an LCD system with the fewest number of the chips. The LH155R enables an LCD system for battery-operated, hand-carrying information equipment by securing lower power consumption and wider operating voltage range.

FEATURES

- LCD display by graphic display RAM
 - Normal mode : RAM data "0"→not lighted,
RAM data "1"→lighted
 - Reverse mode: RAM data "1"→not lighted,
RAM data "0"→lighted
- Display RAM memory capacity :
128 x 93 = 11 904 bits
- A pair of icon display outputs
- General 8-bit MPU interface : Possible to directly connect 80-family and 68-family MPUs to bus line
- Possible to make serial interface
- Ratio of display duty cycle :
1/41 (for partial display) or 1/93
(selectable by command)
- 128-bit automatic transfer from display RAM to display data latch
- Abundant command functions
 - Display data read/write
 - Setting up LCD alternating signal cycle
 - Setting up display starting-line : per line
 - Display ON/OFF
 - Display control of normal and reverse modes
 - Increment control of display RAM address
 - Write control of read modifying
 - Internal register read
 - Power saving mode
 - Partial display mode
- LCD drive power circuit
 - Built-in booster circuit : Two, three, four or five times voltage boost is possible
(selectable by command)
 - Built-in voltage converter : Generates LCD drive voltages (V₀, V₁, V₂, V₃ and V₄) based on the boosted voltage
 - Built-in power bias ratio :
1/7 or 1/10 bias (selectable by command)
 - Built-in electronic volume : Controllable in 128 steps
 - Supply voltages
Logic system : +1.8 to +3.3 V
LCD drive system : +5.0 to +16.5 V
- Operating temperature : –30 to +85 °C
- Package : 277-pin TCP (Tape Carrier Package)

BLOCK DIAGRAM

