

4K Color STN Driver & Controller IC

AR3301

◎ GENERAL DESCRIPTION

Ar3301 is a single chip driver and controller device for dot matrix LCD (liquid crystal display) display systems. This chip can be directly connected to a microprocessor, accepts serial or 8/16bit parallel display data from the microprocessor, stores the display data in a built-in display RAM and generates LCD driving signals.

AR3301 has 128 X RGB segment outputs and 162 common outputs, so that it can drive 128X162 dots 256/4096-color STN LCD panel.

AR3301 is best suited to drive LCD systems for batteryoperated, handheld information equipment by ensuring low power consumption and a wide range of operating voltages.

◎ FEATURES

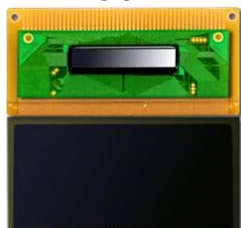
- *LCD drive circuit
 - Segment outputs: 384 outputs
 - Special segment outputs: 6 outputs
 - Common outputs: 162 outputs
- *Display RAM capacity
 - 128 x 162 x 12 = 248,832 bits
- *Display functions gradation: 16 gradations can be selected from 32 gradations
 - By PWM control.
 - Monochrome: 162 x 128 (8 gradation available)
 - Partial display: a specific part of the graphic display area can be displayed.
- *Applicable duty ratios: 162, 160, 144, 132, 128, 112, 96, 80, 72, 64, 56, 48, 40, 32, 24, 16
- *MPU interface: 8bit parallel bi-directional interface with 80-family and 68family
 - MPU: serial interfaces (only write operation) available.
- *LCD drive power circuit
 - builtin booster circuit: two, three, four, five, six or seven times voltage Boost is available.
- *Builtin electronic volume: controllable in 128 steps

- *Built-in voltage converter: generates LCD drive voltages (V0, V1, V2, V3, V4) based on the boosted voltages
- *Built-in constant voltage generator circuit
- *Selectable bias ratio: select from 1/12, 1/11, 1/10, 1/9, 1/8, 1/7, 1/6, and 1/5 using commands.
- *Various function set:
 - display data read/write
 - setting LCD alternated signal cycle
 - setting display starting-line
 - display ON/OFF
 - display controls of normal and reverse modes
 - setting common startingline
 - increment control of display RAM addresses
 - readmodifywrite control
 - internal register read
 - power saving modes
- *Power source:
 - supply voltage for logic system: +1.7 to +3.3 V
 - LCD drives voltage: +5.0 to +18 V
- *Operating temperature: 30 to +85°C
- * Package type: COF / COG

CHIP



COF



COG

