

For Passive-Matrix Organic-Light-Emitting-Diode (OLED) Displays

- Gray-Scale Monochrome
- Small-Molecule and Polymer

FEATURES

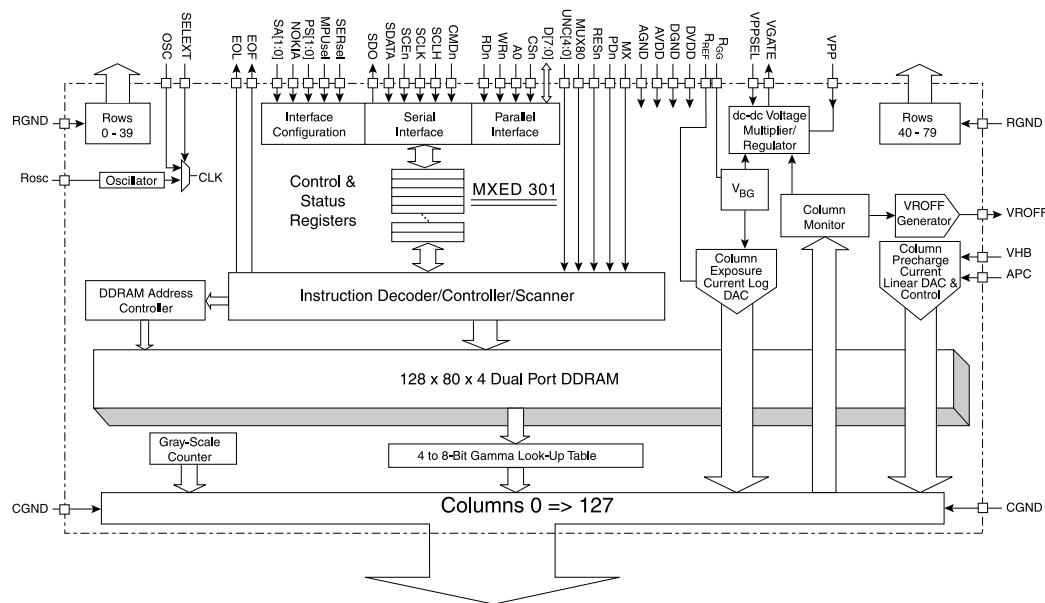
- Drives up to 128x80 Passive-Matrix OLED Displays
- Parallel Interfaces: 8-Bit Motorola 68xx or Intel 80xx
- Serial Interfaces: I²C, 3-Line, 3 and 4-Line SPI
- 128 x 80 x 4bit Frame Buffer
- Binary and Gray-Scale Operation
- Current Sourcing Anode Drivers and Common-Cathode Current Sinking Row Drivers
- Partial Display and Split Screen Modes
- Screen Saver and Flash Modes
- Global Current (Brightness) Control: 10μA-350μA
- 4-bit to 8-bit Gamma Correction
- Adaptive Precharge
- DC-DC converter controller/regulator
- Power Down Mode (DDRAM preserved)
- Wide Battery Input Voltage Range
- Available as Gold-Bumped Die
- Wide Operating Temperature Range: -40 to 85°C



CLARE
MICRONIX IC GROUP

MXED301

Clare Micronix MXED301 128 Column by 80 Row OLED Gray-Scale Driver with Controller



OVERVIEW

The **MXED301*** combines **Clare Micronix's** advanced OLED column- and row-driver designs with a versatile controller, which supports standard digital system interfaces and connects directly to OLED display panels. The **MXED301's** well-matched current drivers, and user provisions to accommodate specific display panel characteristics, ensure uniform luminance and high-quality gray-scale operation. Active pixel monitoring and supply voltage control options guarantee minimum power dissipation over the lifetime of the display module.

ibility, the device is compatible with Motorola 68xx and Intel 80xx parallel interfaces and most standard display serial interfaces. The circuit provides current precharge and discharge periods during each row time to obtain optimal grayscale linearity and low power consumption. In addition, critical circuit parameters such as the DC-DC converter output and row off voltage are modified to compensate for display aging. Typical applications are small format displays intended for mobile or hand-held purposes.

*Patent pending.

FUNCTIONAL DESCRIPTION

The **MXED301** is a low power OLED timing controller and driver in a single IC. It provides an integrated and flexible solution for driving passive monochrome OLED displays in either a binary or 4-bit gray-scale mode. Additional features include an integrated DC-DC converter controller, internal oscillator, Display Data RAM (DDRAM), partial display mode, screensaver mode, and a low-power standby mode. For flex-

Product	Part Number	Description
MXED301-00	15201-00	Bumped Die
MXED301-10	15235-00	TCP
MXED301-20	15239-00	BGA
MXED301-30	15226-00	Bumped Wafer

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