

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

- ➔ Monochrome and Color
- ➔ Small-Molecule and Polymer
- ➔ Current-Sourcing Anode Drivers

FEATURES

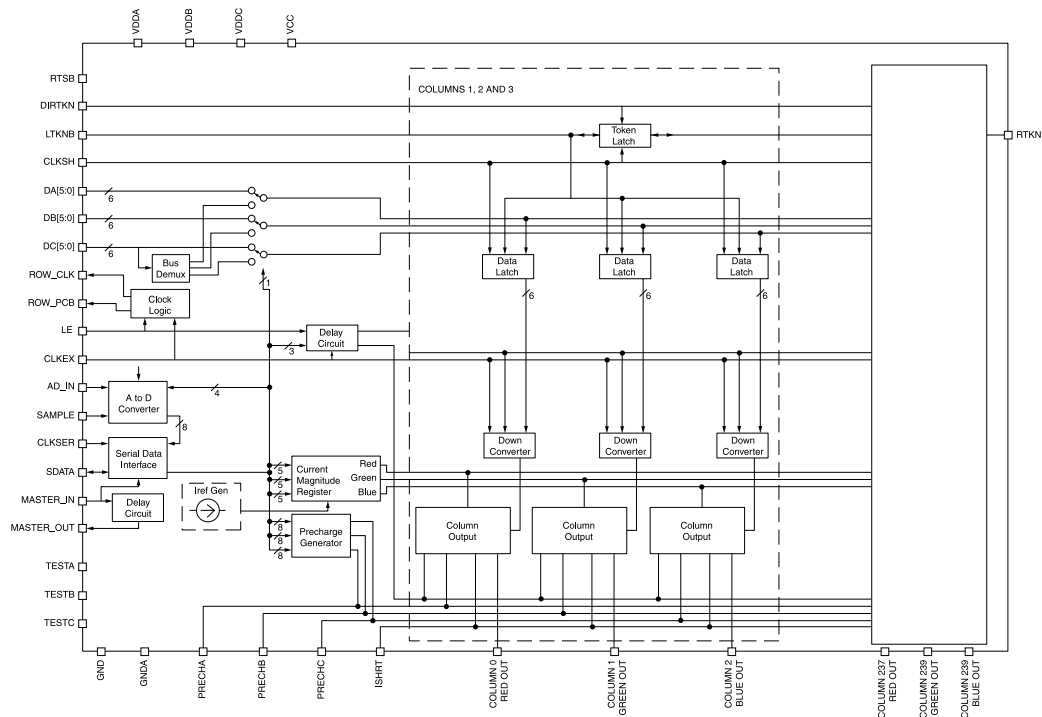
- CMOS High Voltage Process: 9-30V Display Panel Supply Compatible
- 240 Output Channels, Cascadable
- Token-Based Bidirectional Data Transfer: Direct User Control of Scan Rate
- Current Source Magnitude Control: 4 μ A to 1mA
- 6-Bit Monochromatic/Color Gray-Scale
- Tight current matching: $\pm 2\%$ $\pm 1.5 \mu$ A Intra-die, $\pm 1\%$ Inter-die
- Monochromatic/Color Voltage Precharge
- Built-in A-to-D Converter Monitoring of Display Panel Characteristics
- 3V to 5.5V logic supply
- 25 MHz Clock Frequency
- Gold-Bumped Die or TCP packaging
- Compatible with **Clare Micronix 200-Series Row Drivers**



CLARE
MICRONIX IC GROUP

MXED102

Clare Micronix MXED102 240-Channel OLED Column Driver



OVERVIEW

The **MXED102*** is **Clare Micronix's** second-generation OLED column driver offering, which directly supports up to 240-monochromatic or 80-color OLED pixels. The **MXED102's** exceptionally tight current-matching of adjacent and cascaded outputs, precharge options, and OLED monitoring capability, ensures uniform luminance and high-quality gray-scaling in both monochromatic and RGB mode. This is the first production driver for OLED module OEM's building a new standard in flat-panel displays.

FUNCTIONAL DESCRIPTION

The **MXED102** is capable of driving 240 columns (LED anodes) of an OLED display. Outputs are divided into 3 groups of 80 in order to support color (red, green, blue) displays. Each group has an individual setting for voltage precharge and current magnitude. Individual output luminance is controlled by setting the exposure time (amount of time the current driver is on) for that output.

Device settings, such as precharge voltage, current magnitude, precharge time, color mode, and others, are set by writing to a bank of control registers via a serial port. Some registers of the serial port are also available for readback. Several devices may share the serial bus, but only the device with its MASTER_IN pin pulled high will respond to a read request. Each column output has three possible sources: ground, to turn the LED off; a precharge voltage to bring the diode rapidly up to its threshold voltage; and a current source, which is used to turn the diode on. The precharge feature brings the LED's up to their threshold voltage quickly and accurately, so that the current source may immediately illuminate the diode instead of having to charge the parasitic capacitance of the diodes up to the threshold voltage.

*Patent Pending

Product	Part Number	Description
MXED102-00	14001-00	Bumped Die
MXED102-10	14040-00	TCP
MXED102-20	14039-00	BGA
MXED102-30	14026-00	Bumped Wafer

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