

TECHNICAL BRIEF

BY: AZD ENGINEERING

Built-In Charge Pump & Booster Circuit for COG LCDs

To address a growing demand for monochrome LCDs suitable to hand-held applications, AZ Displays continues to design chip-on-glass panels with a reduced number of required supply voltages.

Booster Circuit Functionality

Character and graphic LCD modules typically require two voltage supplies: one acts as the main power supply and the other as the voltage for contrast adjustment. AZ Displays COG modules require only one voltage supply through the use of a built-in DC/DC converter (charge pump) and an external set of capacitors. The capacitors are wired internally through the IC, utilizing the single supply voltage as the input voltage for the charge pump. The voltage is passed through the terminals of the capacitors and the charge is stored, potentially allowing for a boost up to 4 times the original input, covering the range of voltages required for proper contrast adjustment. The capacitors can be conveniently mounted to the customer's board and the need for a second voltage supply is eliminated, opening the door to possibilities of use in numerous low-power, hand-held applications.

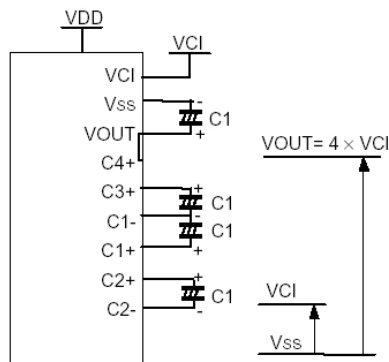
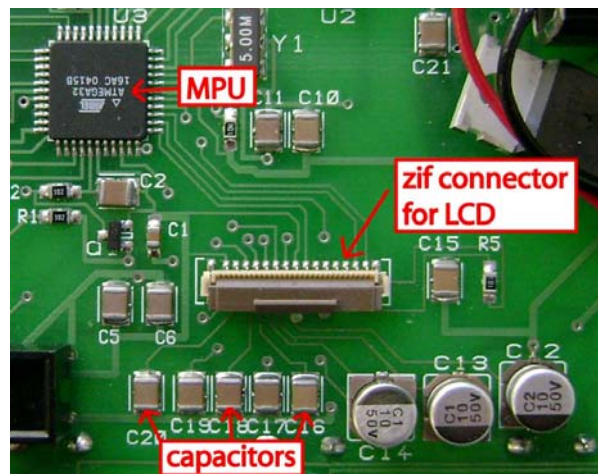


Figure 13. Four Times Boosting Circuit



New Releases

The following standard COG models operate on a single power supply, when a built-in DC/DC charge pump is utilized with an external set of capacitors: AQM1264C, AQM1264J, AGM1264M, and AGM1264P. In case of ACM0802F (8x2 character display), the capacitors are already conveniently built-in. Complete data sheets can be found at www.azdisplays.com