DESCRIPTION

The TCS3512 generates power supply rails for active-matrix organic light emitting diode (AMOLED) displays. It includes a step-up DC-DC and an inverting DC-DC converter making it suitable for battery operated products.

The step-up converter is a high-accuracy power-efficiency 250mA output regulator. It features an internal 0.5Ω N-MOSFET, 0.6Ω P-MOSFET and 1.4MHz operation frequency allowing the use of small inductor and capacitors. The integrated synchronous rectifier allows the true shutdown of the outputs. An internal digital soft-start function controls inrush currents. The step-up converter output can be externally set 4V to 8V.

The inverting converter is a high-accuracy 250mA regulator. It features an internal 0.4Ω N-MOSFET, 0.5Ω P-MOSFET and 1.4MHz operation frequency allowing the use of small inductor and capacitors. Its -6V to -1V output efficiency up to 80% at 150mA. An internal digital soft-start function controls inrush currents.

The TCS3512 is available in a small (3mm × 3mm × 0.6mm) 12 pin thin TDFN package and operates over the -40ºC to +85ºC temperature range.

FEATURES

- 2.5V to 4.5V Input Supply Range
- 1.4MHz Current Mode Step Up Regulator
  - External Programmable 4V~8V Output Voltage
  - Maximum 250mA Output
  - High Accuracy (+/- 1%)
  - Built-In 18V, 0.5Ω N-MOSFET
  - Built-In 18V, 0.6Ω P-MOSFET Synchronous Rectifier
  - Cycle-by-Cycle Current Limit
  - More than 85% Efficiency at 150mA
  - Good Low-Duty Factor Operation
- 1.4MHz Current Mode Inverting Regulator
  - -6V to -1V
  - Maximum 250mA Output
  - High Accuracy (+/- 1%)
  - Built-In 18V, 0.5Ω P-MOSFET
  - Built-In 18V, 0.4Ω N-MOSFET Synchronous Rectifier
  - Cycle-by-Cycle Current Limit
  - Up to 80% Efficiency at 150mA
- True Shutdown Mode for Dual Outputs
- Timer-Delayed Output Under-Voltage Shutdown for Dual Outputs
- Over Temperature Protection
- 12 Pin 3mm × 3mm thin TDFN Package
- RoHS Compliant and 100% Lead(Pb)-Free Halogen-Free

APPLICATIONS

- OLED Displays
- Phone, DSC Display
- Automobile Navigation