



1.2A Triple-Outputs Power Supply for AMOLED

1 Descriptions

The SC6104 is a triple-channel switching mode power supply which is designed to drive AMOLED displays requiring VELVDD, VELVSS and VAVDD.

It integrates a boost converter for VELVDD, an inverting buck-boost converter for VELVSS and a boost converter for VAVDD. The output voltage is highly precise and can be programmed by the external signal.

For the portable device applications, size, power consumption and reliability are always in the first consideration. The SC6104 uses a tiny package and it switches at a high frequency to minimize the inductor and the capacitor size. Besides, synchronous rectification (each rail) and Dual-phase (ELVSS only) topologies are used to maximize the power efficiency.

The SC6104 uses innovative technology enabling excellent output voltage regulation and line transient performance. All the output rails allow being programmed by MC pin in digital steps.

The device provides programmable output current limit for ELVDD from 0.6~1.3A and can be disabled by MC function. The AVDD rail also has a selectable 150mA over load protection function. The over current protection for ELVDD and AVDD is disabled per default. Once the function is disabled, the device keeps switching until the inductor current reaches the internal limitation and stops switching by the short circuit protection.

The device integrates full protection for itself from abnormal condition

The SC6104 adopts 32 pin QFN 4x4 package.

3 Applications

- AMOLED Displays

2 Features

- 2.5V to 5.0V Input Voltage Range
- ELVDD Output Voltage 4.6V~5.6V, 0.5% Accuracy
- ELVSS Output Voltage -1.4V~ -6.4V, 1% Accuracy
- 1.2A Continuous Output Current Capability:
VIN≥3V, ELVDD=4.6V, ELVSS=-3V
- AVDD Output Voltage 5.8V~7.9V, 1% Accuracy
- Dual-phase operation for ELVSS Rail
- External Output Sense for ELVDD
- Selectable 0.15A Output Current Limit for AVDD
- Programmable Over Current Protection for ELVDD
- Programmable Fast Discharge
- Transient Time Control Function for ELVSS
- Start Short Detection
- Input to Output, Output to Input Isolation
- Internal Soft Start to Limit Inrush Current
- Under Voltage Protection
- Peak Current Limitation
- Short Circuit Protection
- Thermal Shutdown
- Package: 4x4x0.75mm, 32Pin QFN

4 Device Information

ORDER NUMBER	PACKAGE	BODY SIZE
SC6104QDER	QFN32L	4 x 4 x 0.75mm