
Dual-Outputs 6-A Buck Converter with Integrated DCP Scheme

1 Description

The SC8102A is a synchronous dual-output ports buck converter with a wide input voltage from 5V to 36V. The SC8102A regulates the output voltage at a fixed 5V or customized voltage by setting the divider resistor. It also provides high accurate output current limit. The converter enters Constant Current (CC) Mode in case any of the two output channels reaches the setting current limit. The total output power can be programmed by a resistor, which makes it easy for constant power control.

The SC8102A adopts fixed line drop compensation, programmable frequency setting and PWM/PFM mode operation. It also integrates automatic DCP mode and Type-C current mode, so that a USB controller can be saved. With minimum external components, maximum functions can be achieved for user's different applications.

The SC8102A also supports full protections including under voltage protection, over voltage protection, short current protection and auto-restart, over temperature protection.

The SC8102A adopts 32 pin QFN 5x5 package.

3 Applications

- Car Charger
- Multi-Ports Wall Charger
- Hub
- Industrial applications

2 Features

- Wide input operating voltage from 5V to 36V
- 11mΩ/27mΩ Low R_{dson} Internal Power MOSFETs
- Max output capacity with 5V/6A
- 100% duty cycle operation
- Low quiescent current
- Programmable output power limit
- Build-in DP/DM for USB DCP modes:
 - BC1.2 DCP Mode
 - Divider Mode
 - 1.2V/1.2V Mode
- Build-in USB Type-C 3A current mode
- Integrated NMOS gate driver
- Build-in line drop compensation
- PFM/PWM mode selection
- Adjustable frequency 80kHz to 600kHz
- Hiccup and auto-restart
- Full protection of UVLO, OVP, OCP, OTP

4 Device Information

ORDER NUMBER	PACKAGE	BODY SIZE
SC8102AQDJR	32 pin QFN	5 mm x 5 mm x 0.75 mm