

SC71702Q, Dual-Channel Automotive Antenna LDO with Current Sense

1 Descriptions

The SC71702Q is a dual-channel low-dropout regulator (LDO) family, designed to operate for a wide input voltage range from 4.5-V to 36-V (40-V load dump capability). The LDO family is suitable to supply automotive active antenna, camera modules and microphone applications through coax cables with 400-mA current capability per channel.

The SC71702Q is designed to indicate full diagnostics through current sense and error pins to MCU. Therefore, current sense is multiplexed to report a proportional analog output to the sensed load current and provide fault indications without external calibrations. In addition, one current sense can be manually selected to report another channel's information, which helps save analog-to-digital (ADC) resources. The current limit of individual channel is adjustable by a resistor on ILIMX pin.

Implementing Back-to-Back (B2B) FET structure, SC71702Q is able to protect against reverse current and reverse battery polarity failures without extra input diode. The LDO also offers thermal shutdown (TSD) and output short-to-battery (STB) protection. An internal inductive clamp diode is integrated for each channel to protect the device during shutdown with a long inductive cable on output.

The SC71702Q is available in HTSSOP-16 package.

3 Applications

- Automotive active antenna power
- Automotive camera module and sensor power
- Automotive microphone power

4 Device Information

ORDER NUMBER	CHANNEL	Fault Logic	PACKAGE	BODY SIZE
SC71702QSJER	Dual-channel	Latch-off	HTSSOP-16	5mm x 6.4mm x 1.2mm
SC71702AQSJER	Dual-channel	Auto-retry	HTSSOP-16	5mm x 6.4mm x 1.2mm

2 Features

- AEC-Q100 qualified for automotive applications:
 - Temperature grade 1: T_A range: -40°C to 125 °C
- 4.5-V to 36-V wide input voltage range, 40-V load dump capability
- Excellent output performance
 - 1.5-V to 22-V adjustable output voltage range
 - Up to 400-mA current capability per channel
- Single and dual-channel LDO in same package
- Adjustable current limit for each channel
- High current sense accuracy to detect very light load condition: ±10% at 5-mA load and ±50% at 1-mA load
- High Power Supply Rejection Ratio (PSRR): Typical 70dB at 100-Hz
- 500-mV (max) dropout voltage at 100-mA load
- Multiplexing current sense to save ADC resource
- Power switch mode when FB is short to GND
- Full diagnostics and integrated protection for robust design
 - Input undervoltage lockout (UVLO)
 - Reverse battery polarity protection
 - Reverse current protection (RCP)
 - Output short-to-battery (STB) protection
 - Output inductive load clamp
 - Output short-circuit protection (SCP)
 - Thermal shutdown (TSD)
- HTSSOP-16 Package with thermal pad
- SC71702Q has same package with
 - SC71701Q (Single-channel)

单击下面可查看定价，库存，交付和生命周期等信息

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