

# Active Output Ripple Attenuators (QPO Series) 10 and 20 Amp



## Features

- >30 dB PARD attenuation, 1 kHz to 500 kHz
- Supports precise point-of-load regulation
- Up to 99% efficient
- High density, low profile LGA package
- Reduces required number of output capacitors to support dynamic loads
- User selectable optimization of attenuation, power dissipation, and transient load response
- Compatible with most DC-DC converters



25 x 25 x 4.5 mm

## Product Description

The QPO output ripple attenuator products use proprietary active filtering to reduce power supply output ripple and noise (PARD) over 30 dB from 1 kHz to 500 kHz. QPOs improve transient response, ensures quiet point-of-load regulation and works with most DC-DC converters and switching power supplies. Output regulation is maintained using remote sensing or the trim input of the power supply.

Load capacitance using this active technique can effectively be reduced by a factor of ten, providing equivalent transient performance. In the typical application schematic below the QPO was inserted between the converter and the load using no additional load capacitance. As shown in the performance plot, the drop in load voltage (approx. 10 mV; channel 2) was significantly reduced when compared to the converter output (approx. 100 mV; channel 1) with a 10 A transient load current step. The ripple voltage amplitude was also reduced by a similar factor at the load.

## Applications

- Telecom base station power amplifiers
- Low noise POL
- Industrial test and measurement
- Sensors requiring low-noise power
- Medical instrumentation
- Military targeting and displays
- Lasers and optical systems

## Part Numbering

Part Number	Input Voltage	Current Rating	Attenuation
QPO-1LZ-(01)	3 – 30 Vdc	10 A	>30 dB PARD, 1 kHz to 500 kHz
QPO-2LZ-(01)	0.3 – 5.5 Vdc	20 A	>20 dB PARD, 1 kHz to 500 kHz, Aux. Bus bias

(-01 designates open frame)

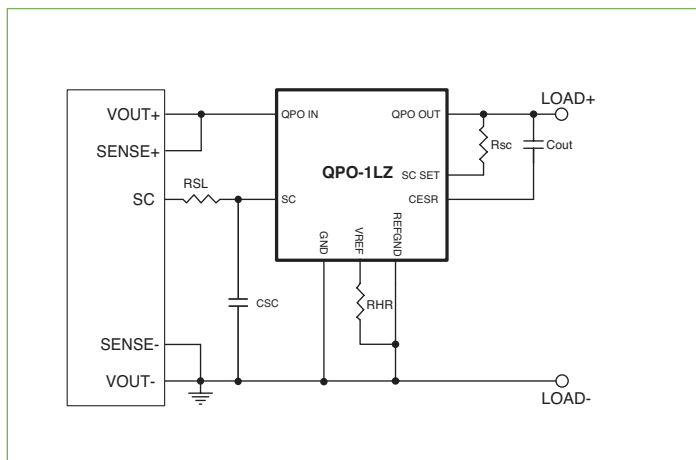


Figure 1: Typical Application

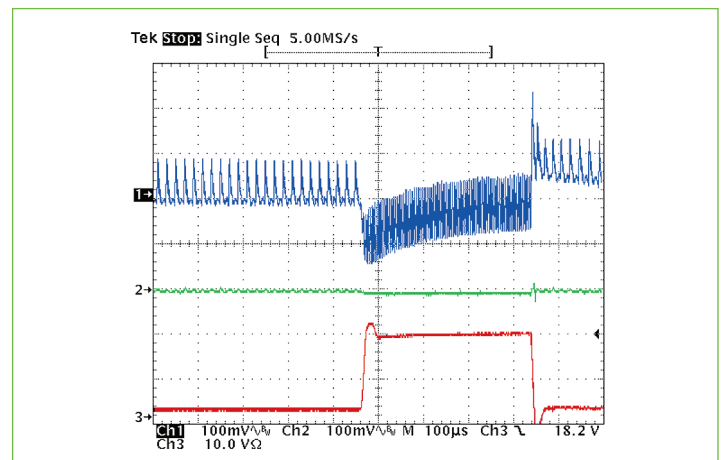


Figure 2: Performance