Active EMI Input Filters (QPI Series)
For 24/28 V and 48/60 V BUS Applications

PICOR QuietPower®

Features

- Up to 65 dB CM attenuation at 250 kHz
- Up to 80 dB DM attenuation at 250 kHz
- Efficiency: >99% at full load
- High density, low profile LGA package
- Integrated Hot-Swap in select models
- -40 to +100°C PCB temperature
- TÜV approved
- Saves up to 50% board space vs. standard filters
- Compatible with most DC-DC converters

Full: 25 x 25 x 4.5 mm

Product Description

The QPI family of active EMI filters provides conducted common-mode (CM) and differential-mode (DM) attenuation from 150 kHz to 30 MHz (CISPR22 range). The proprietary active filtering circuit provides superior attenuation at low frequencies intended to support EN Class B limits, including PICMG3.0 for ATCA boards.

In comparison to passive solutions, the use of active filtering reduces the volume of the common-mode choke, providing a low profile, surface mount device. Smaller size saves valuable board real estate and the reduced height enhances airflow in blade applications.

Applications

- PICMG® 3.0 ATCA applications
- Networking & communications
- Fan-tray assemblies
- Telecom
- Industrial
- Military

Part Numbering

Part Number (-01 = Open Frame)	Input Voltage	Nominal Range	Current Rating	CM Attenuation @250 kHz	DM Attenuation @250 kHz	Hipot	Integrated Hot-Swap	Package
QPI-3LZ (-01)	24/28 Vdc	10 – 40 Vdc	7 A	65 dB	80 dB	707 Vdc	—	full
QPI-5LZ (-01)	24/28 Vdc	10 – 40 Vdc	14 A	60 dB	75 dB	707 Vdc	—	full
QPI-6LZ (-01)	48/60 Vdc	30 – 80 Vdc	14 A	40 dB	80 dB	1,500 Vdc	—	full
QPI-8LZ (-01)	48/60 Vdc	32 – 76 Vdc	6 A	40 dB	70 dB	1,500 Vdc	Yes	full
QPI-21LZ (-01)	48/60 Vdc	30 – 80 Vdc	14 A	45 dB	80 dB	1,500 Vdc	—	full

Block Diagram

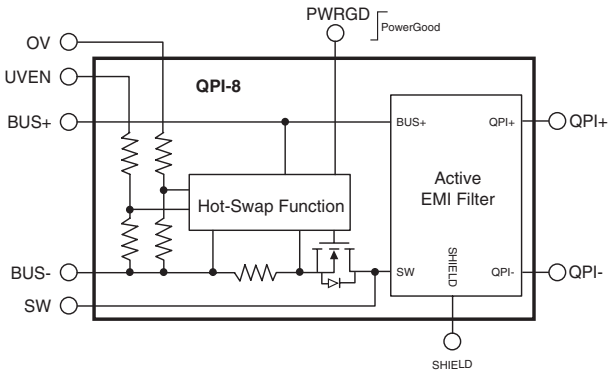

Figure 1: Block diagram, QPI with integrated Hot-Swap

Performance

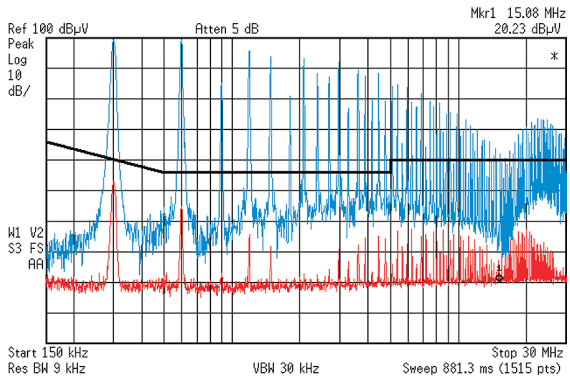

Figure 2: Conducted EMI scans showing QPI performance. Blue trace = no QPI; Red trace = with QPI.

EMI Input Filters (QPI Series)
For 24/28 V and 48/60 V BUS Applications

PICOR QuietPower®

Features

- 24/28 and 48/60 models
- Up to 60 dB CM attenuation at 250 kHz
- Up to 80 dB DM attenuation at 250 kHz
- Efficiency: >99%
- Low profile LGA package
- Integrated Hot-Swap in select models
- Supports PICMG® 3.0 ATCA applications
- -40 to +100°C PCB temperature
- TÜV approved

Full: 25 x 25 x 4.5 mm
Half: 25 x 12.5 x 4.5 mm

Product Description

These QPI filters are specifically designed to attenuate conducted common-mode (CM) and differential-mode (DM) noise for converters switching in the 1 MHz range, to comply with CISPR22 standard requirements for conducted noise measurements.

Designed for the telecom, industrial and military bus ranges, the QPI filter supports filtering system boards to the EN55022 Class B limits.

Applications

- PICMG® 3.0 ATCA applications
- Networking & communications
- Fan-tray assemblies
- Telecom
- Industrial

Part Numbering

Part Number (-01 = Open Frame)	Input Voltage	Nominal Range	Current Rating	CM Attenuation @1 MHz	DM Attenuation @1 MHz	Hipot	Integrated Hot-Swap	Package
QPI-10LZ (-01)	48/60 Vdc	32 – 76 Vdc	6 A	40 dB	60 dB	1,500 Vdc	Yes	full
QPI-11LZ (-01)	24/28 Vdc	5 – 50 Vdc	7 A	60 dB	70 dB	707 Vdc	—	half
QPI-12LZ (-01)	48/60 Vdc	10 – 80 Vdc	7 A	40 dB	70 dB	1,500 Vdc	—	half

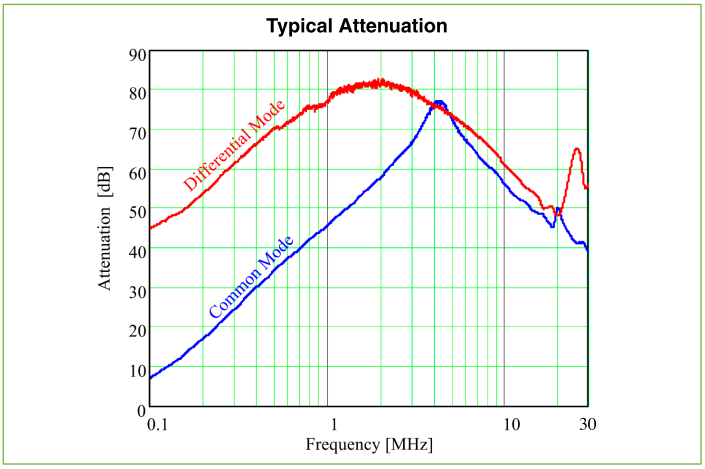

Figure 1: QPI-12 attenuation curves

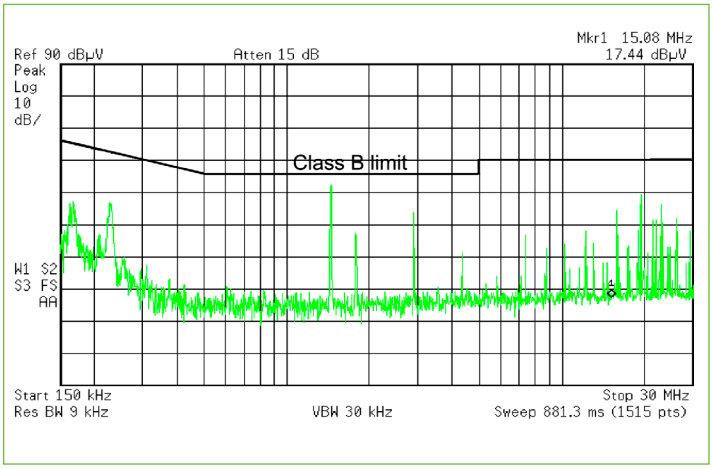

Figure 2: Total conducted noise of P048K048T24IF & V048K120T025 VI Chip PRM and VTM with QPI-12