

28 Volt Input, 7 Amp MIL COTS EMI Filter for V•I Chips

Description

The MQPI-18 attenuates conducted common-mode (CM) and differential mode (DM) noise for 28 V input MIL PRMs to comply with MIL-461E EMI requirements for conducted noise measurements. The filter operates within the full input operating range of a 28 V MIL PRM and supports 7 A loads up to 60°C without derating.

Features

- 28 V input, compatible with MIL PRM
- MIL-STD-461E compliant* CE101, CE102, CS101, CS114, C5115, and CS116
- 100 Vdc surge, 100 ms
- 1,500 Vdc hi-pot hold off to shield plane
- 7 A rating
- Efficiency >99%
- Low profile LGA package
- -55°C to 100°C operation (PCB Temp.)
- Pb solder construction

Typical Applications

- Military mobile and fixed communications
- Radar and Targeting
- Missile and Launch systems
- Airborne flight management systems

Assembly process compatibility

- Intended for Pb solder SMT assembly
- Compatible with typical aqueous cleaning processes (open-frame only)
- Compatible with most conformal coating compounds [after reflow] (open frame only).



12.9 x 25.3 x 5 mm
Weight = 2.4 grams

*When combined with MP028 PRMs, and MV036 VTM's

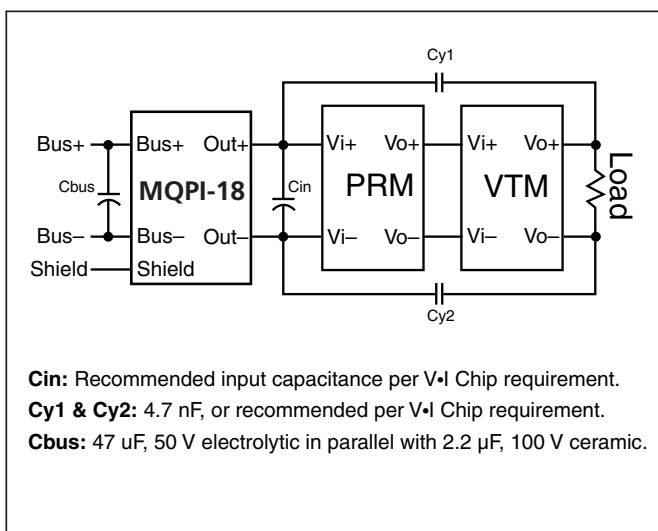


Figure 1 – MQPI-18 Typical application schematic

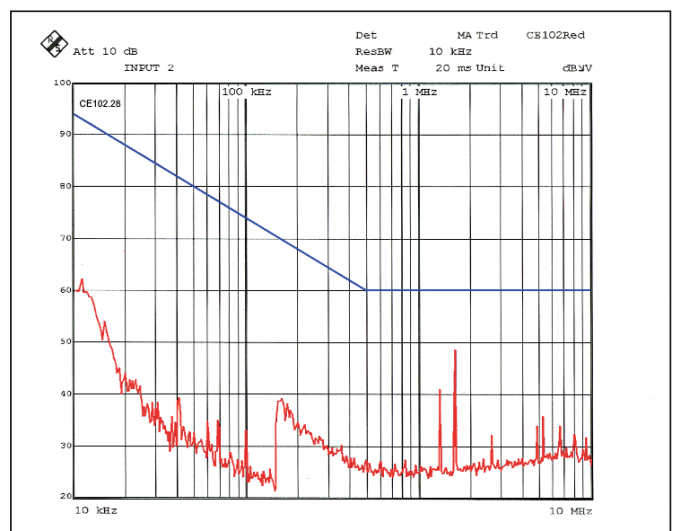


Figure 2 – MIL-STD-461, CE102 compliance with MQPI-18 using 28 V input MIL PRM and 12 V output MIL VTM

Absolute Maximum Ratings – Exceeding these parameters may result in permanent damage to the product.

Pins	Parameter	Notes	Min	Max	Units
Bus+ to Bus-	Input voltage	Continuous	-80	80	Vdc
Bus+ to Bus-	Input voltage	100 ms transient	-100	100	Vdc
BUS+/BUS- to shield plane	BUS inputs to shield hipot		-1500	1500	Vdc
QPI+ to QPI-	Input to output current	Continuous @ 25°C		7	Adc
Package	Power dissipation	@ 25°C		1.50	W
Package	Operating temperature	PCB to filter interface	-55	100	°C
Package	Thermal resistance	Free air		75	°C/W
Package	Thermal resistance	PCB ⁽¹⁾		30	°C/W
Package	Storage temperature		-65	125	°C
Package	Peak reflow temperature	20 s exposure		225	°C
All Pins	ESD	HBM	-2	+2	kV

Note 1: PCB layout guidelines will be available in final version of this data sheet.

Electrical Characteristics – Parameter limits apply over the operating PCB temperature range unless otherwise noted

Parameter	Notes	Min	Typ	Max	Units
Bus+ to Bus- input range	Measured at 7 A			80	Vdc
Bus+ to Out+ voltage drop	Measured at 7 A ⁽²⁾		110		mVdc
Bus- to Out- voltage drop	Measured at 7 A ⁽²⁾		110		mVdc
Common mode attenuation	VBUS = 28 V Frequency = 1.0 MHz@25°C		45		dB
Differential mode attenuation	VBUS = 28 V Frequency = 1.0 MHz@25°C		75		dB
Input bias current at 80 V	Input current from Bus+ to Bus-			10	µA

Note 2: Derating curve TBD.

Pad Description

Pin Number	Name	Description
8, 9	Bus +	Positive bus potential
1, 10	Bus-	Negative bus potential
6, 7	Out+	Positive input to the converter
4, 5	Out-	Negative input to the converter
2, 3	Shield	Shield connects to system chassis or safety ground.

Ordering Information

Part Number	Description
MQPI-18LP	LGA, Pb solder, lidded package
MQPI-18LP-01	LGA, Pb solder, open-frame package

Package Outline Drawing (lidded version)

