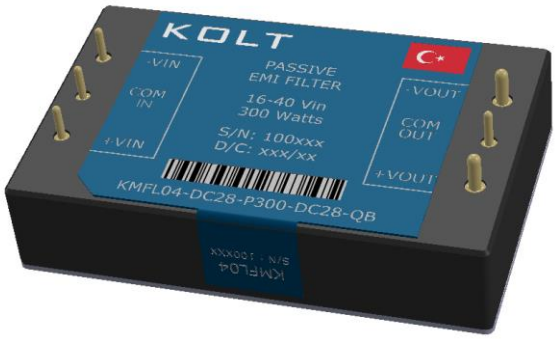
Features & Benefits

- Passive EMI Filter - Quarter Brick Module
- 20 A output current
- Wide input voltage range
- More than 36 dB differential-mode attenuation at 250 kHz
- More than 41 dB common-mode attenuation at 250 kHz
- Bulk capacitors and damping resistors are included for input stability
- All capacitors are X7R multi-layer ceramic 100V rated
- Designed to meet all MIL-STD 461 EMI requirements (D, E, F, G)
- Designed to meet MIL-STD-810G

Product Ratings	
V_{IN_MAX} = 75 V	I_{OUT_MAX} = 20 A

Product Description



Typical Applications

- Defense
- Aerospace
- Communications Systems
- Medical

Size:

58.4 × 36.8 × 12.9 mm

Quarter Brick package

53 grams

Typical Connection

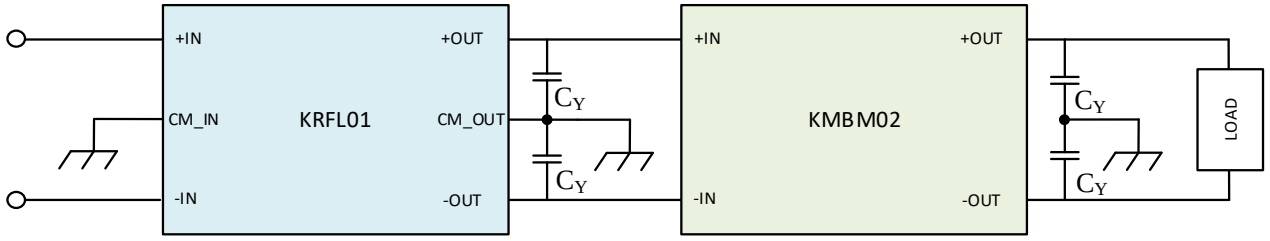


Figure 1. Typical circuit configuration and application diagram

Note : CM_IN and CM_OUT are connected to the chassis.

Note : C_Y = X7R 4700 pF / 2kV

Absolute Maximum Ratings

PARAMETERS	Min	Typical	Max	Unit	Notes
Input voltage	-75		75	V	Continuous
Output current		20		A	
Isolation voltage		1500		V	Input / Output to Common-mode pins
Operating case temperature	-55		100	°C	Baseplate Temperature
Storage case temperature	-55		100	°C	

Electrical Characteristics

All data are obtained at nominal line and load unless otherwise specified.

Module Specifications

PARAMETERS	Min	Typical	Max	Unit	Notes
Input voltage	0		75	V	Continuous operation
Internal voltage drop		0.36		V	@ 20 A
Efficiency		97.9		%	@ 300 W Full load, @ 16 V low line, @ 25°C
		99.3		%	@ 300 W Full load, @ 28 V nominal line, @ 25°C
		99.6		%	@ 300 W Full load, @ 40 V high line, @ 25°C

Electrical Characteristics and Performance Parameters

PARAMETERS	Min	Typical	Max	Unit	Notes
Total differential-mode capacitance		200		µF	
Total common-mode capacitance		0.24		µF	
Bulk capacitor		169		µF	
Damping resistor		2		Ω	
Noise attenuation					
• Differential-mode		36		dB	250kHz
• Common-mode		41		dB	250kHz

Typical Performance Results

Following EMI measurements have been performed in KOLT's EMI test laboratory using Rohde&Schwarz FPC1000 Spectrum Analyzer. The test setup shown in Figure 1 has been used for the measurements. The output of the KRFL01 is connected to KMBM02 Brick Module, which is loaded to supply 300 W to a resistive load at 28 V. KRFL01 filter module complies with the CE102 limits.

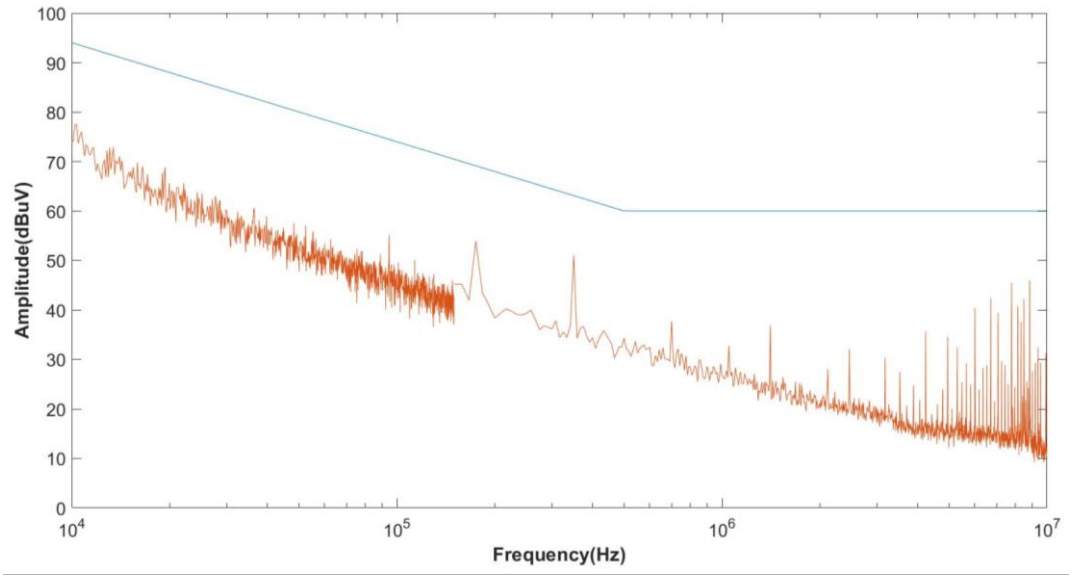


Figure 2. MIL-STD-461E CE102 Positive Line with EMI Filter

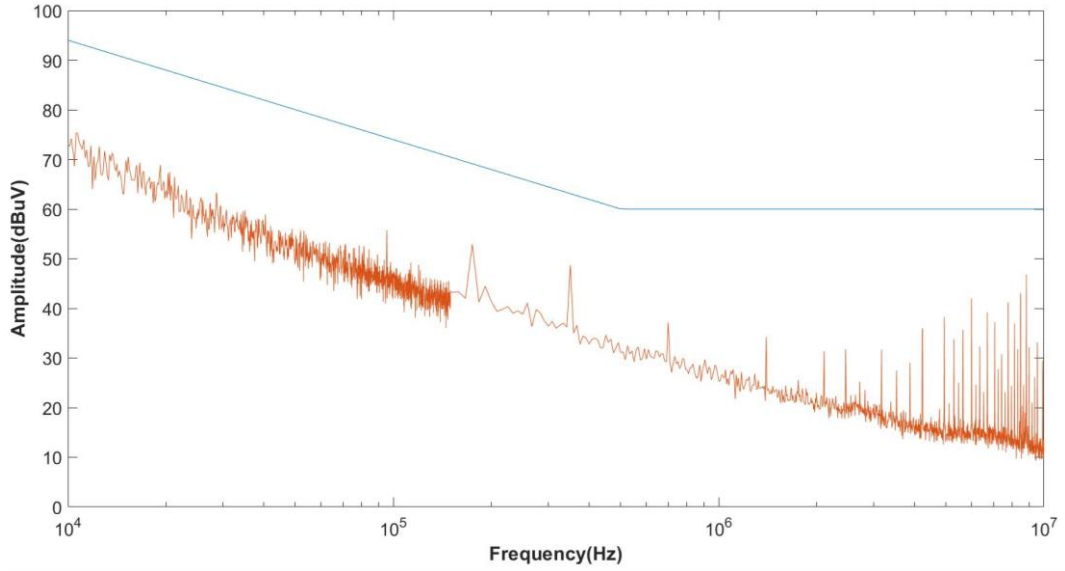
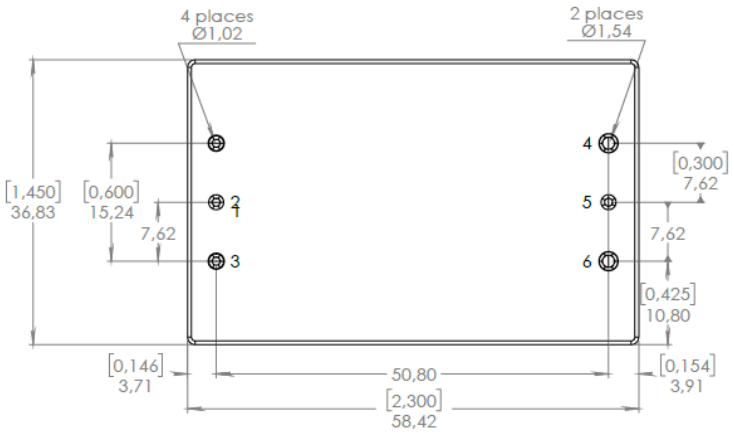
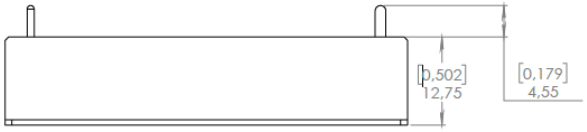


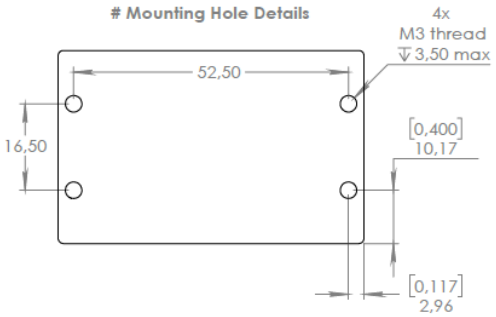
Figure 3. MIL-STD-461E CE102 Negative Line with EMI Filter

Mechanical Drawing



PIN	NAME
1	-VIN
2	COM IN
3	+VIN
4	-VOUT
5	COM OUT
6	+VOUT





Ordering Information

Part Number	Description
KRFL01-DC28WE-C20-P-QB-T	Quarter Brick EMI Filter with threaded baseplate
KRFL01-DC28WE-C20-P-QB-F	Quarter Brick EMI Filter with flanged slotted baseplate

Family	Input Voltage	Current	Filter Type	Package	Baseplate
KRFL KOLT High Reliability Filter Module	**DC28WE**: 9-75 V	**C20**: 20 A	**P**: Passive Filter	**QB**: Quarter Brick	**F:** Flanged slotted baseplate **T:** Threaded baseplate

Revision History

Document Revision	Date	Description
Rev A-PC1	04/2022	First revision (prototype phase)
Rev A-PC1	05/2022	Second revision (prototype phase) - Improved switching frequency switching noise suppressions
Rev A1	01/2023	First **production** revision - Full bandwidth noise suppression per MIL-STD-461

Planned Improvements

Improvement	Description	Resolution Date
Current capability	Current capability will be increased to 30 Amps.	2023/Q3