AMI-1090 Superior Performance Single Phase Two Stage EMI Filter

ALTRAN MAGNETICS

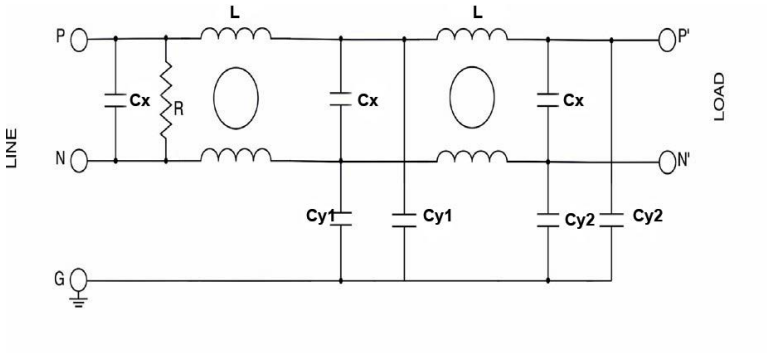
Features

- High EMI attenuation
- Rated up to 30A
- Two stage filters designed for noisy application requiring excellent filter performance
- Designed for easy and fast chassis mounting

Applications

- UPS/Inverters
- Industrial applications
- Medical equipment
- Electrical equipment application Stepper Motor Drives

Typical Circuit Diagram



Technical Specifications

Maximum continuous operating voltage:	250 VAC, 50/60Hz, 250 VDC
Operating Frequency:	DC to 400Hz
Rated Currents:	1A to 30A @40°C
High Potential test voltage:	P to N 1075VDC for 2 Sec P to G 2250VDC for 2 Sec P to G 1500VAC 2 Sec (N types)
Overload Capability:	4x rated current at switch on 1.5x rated current for 1 minute, once per hour
Design corresponding to:	UL 60939-3 and IEC 60939-1&2
Temperature range:	-25°C to +100°C
Climatic category:	25/100/21
Flammability corresponding to:	UL 94 V-0 or better
Protection category:	IP 20

Approvals & Compliances

(Pedning)

Product Selector

AMI-1090 B - 10 - 1

Blank	**Standard version**
A	**Safety Version (Very Low Earth Leakage)**
B	**Medical Version (No Earth Leakage)**
N	**Enhanced Version (Higher Earth Leakage)**

Rated Current @ 40°C

1	**Spade (Faston 6.3 x 0.8mm)**
3	**Wire Leads**
M4	**Studs**

Selection Table

STANDARD VERSION												
Available Part Numbers	Termination			Current Rating @ 40°C (A)	Leakage current @250VAC/ 50 Hz (mA)	Power loss @ 250°C 50Hz (W)	Inductance	Capacitance			Resistance	Weight Approx. (g)
	 6.3 X 0.8						L	Cx	Cy1	Cy2	kΩ	
							mH	µF	nF	nF		
AMI-1090-1-1	-1	-	-	1	0.45	2	20	0.22	2.2	1.0	680	100
AMI-1090-1-3	-	-3	-	1	0.45	2	20	0.22	2.2	1.0	680	100
AMI-1090-3-1	-1	-	-	3	0.45	2	14	0.33	2.2	1.0	470	200
AMI-1090-3-3	-	-3	-	3	0.45	2	14	0.33	2.2	1.0	470	200
AMI-1090-4-1	-1	-	-	4	0.45	6.5	14	0.33	2.2	1.0	470	250
AMI-1090-4-3	-	-3	-	4	0.45	6.5	14	0.33	2.2	1.0	470	250
AMI-1090-6-1	-1	-	-	6	0.6	7.5	8	0.47	3.3	1.0	330	250
AMI-1090-6-3	-	-3	-	6	0.6	7.5	8	0.47	3.3	1.0	330	250
AMI-1090-6-M4	-	-	M4	6	0.6	7.5	8	0.47	3.3	1.0	330	250
AMI-1090-8-1	-1	-	-	8	0.6	8	8	0.47	3.3	1.0	330	350
AMI-1090-8-3	-	-3	-	8	0.6	8	8	0.47	3.3	1.0	330	350
AMI-1090-10-1	-1	-	-	10	0.6	8.5	8	0.47	3.3	1.0	330	500
AMI-1090-10-3	-	-3	-	10	0.6	8.5	8	0.47	3.3	1.0	330	500
AMI-1090-10-M4	-	-	M4	10	0.6	8.5	8	0.47	3.3	1.0	330	500
AMI-1090-12-1	-1	-	-	12	0.9	12.5	4	1	10	1.0	220	500
AMI-1090-12-3	-	-3	-	12	0.9	12.5	4	1	10	1.0	220	500
AMI-1090-12-M4	-	-	M4	12	0.9	12.5	4	1	10	1.0	220	500
AMI-1090-16-1	-1	-	-	16	0.9	11	4	1	10	1.0	220	550
AMI-1090-16-3	-	-3	-	16	0.9	11	4	1	10	1.0	220	550
AMI-1090-20-1	-1	-	-	20	0.9	8.5	2.7	1	10	1.0	220	600
AMI-1090-20-M4	-	-	M4	20	0.9	8.5	2.7	1	10	1.0	220	600
AMI-1090-30-M4	-	-	M4	30	0.9	10.5	1.5	1	10	1.0	220	600

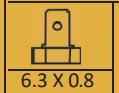
Selection Table

SAFETY VERSION												
Available Part Numbers	Termination			Current Rating @ 40°C (A)	Leakage current @250VAC/ 50 Hz (mA)	Power loss @ 250°C 50Hz (W)	Inductance	Capacitance			Resistance	Weight Approx. (g)
	6.3 X 0.8						L	Cx	Cy1	Cy2	kΩ	
							mH	µF	nF	nF		
AMI-1090A-1-1	-1	-	-	1	0.1	2	20	0.22	0.47	0.47	680	100
AMI-1090A-1-3	-	-3	-	1	0.1	2	20	0.22	0.47	0.47	680	100
AMI-1090A-3-1	-1	-	-	3	0.1	2	14	0.33	0.47	0.47	470	200
AMI-1090A-3-3	-	-3	-	3	0.1	2	14	0.33	0.47	0.47	470	200
AMI-1090A-4-1	-1	-	-	4	0.1	6.5	14	0.33	0.47	0.47	470	250
AMI-1090A-4-3	-	-3	-	4	0.1	6.5	14	0.33	0.47	0.47	470	250
AMI-1090A-6-1	-1	-	-	6	0.1	7.5	8	0.47	0.47	0.47	330	250
AMI-1090A-6-3	-	-3	-	6	0.1	7.5	8	0.47	0.47	0.47	330	250
AMI-1090A-6-M4	-	-	M4	6	0.1	7.5	8	0.47	0.47	0.47	330	250
AMI-1090A-8-1	-1	-	-	8	0.1	8	8	0.47	0.47	0.47	330	350
AMI-1090A-8-3	-	-3	-	8	0.1	8	8	0.47	0.47	0.47	330	350
AMI-1090A-10-1	-1	-	-	10	0.1	8.5	8	0.47	0.47	0.47	330	500
AMI-1090A-10-3	-	-3	-	10	0.1	8.5	8	0.47	0.47	0.47	330	500
AMI-1090A-10-M4	-	-	M4	10	0.1	8.5	8	0.47	0.47	0.47	330	500
AMI-1090A-12-1	-1	-	-	12	0.1	12.5	4	1	0.47	0.47	220	500
AMI-1090A-12-3	-	-3	-	12	0.1	12.5	4	1	0.47	0.47	220	500
AMI-1090A-12-M4	-	-	M4	12	0.1	12.5	4	1	0.47	0.47	220	500
AMI-1090A-16-1	-1	-	-	16	0.1	11	4	1	0.47	0.47	220	550
AMI-1090A-16-3	-	-3	-	16	0.1	11	4	1	0.47	0.47	220	550
AMI-1090A-20-1	-1	-	-	20	0.1	8.5	2.7	1	0.47	0.47	220	600
AMI-1090A-20-M4	-	-	M4	20	0.1	8.5	2.7	1	0.47	0.47	220	600
AMI-1090A-30-M4	-	-	M4	30	0.1	10.5	1.5	1	0.47	0.47	220	600

Selection Table

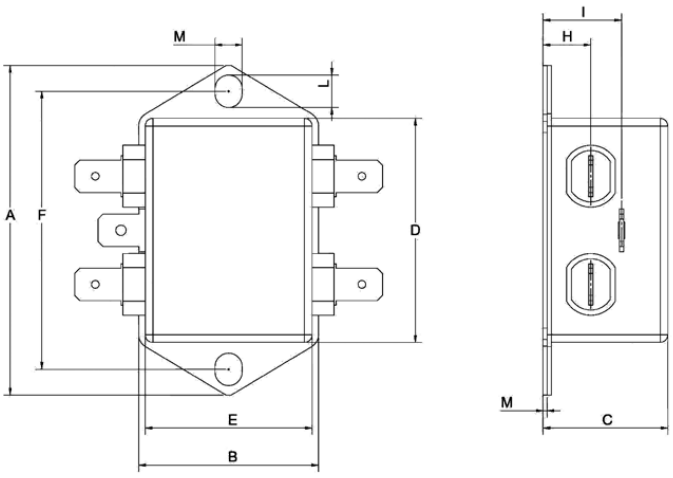
MEDICAL VERSION												
Available Part Numbers	Termination			Current Rating @ 40°C (A)	Leakage current @250VAC/ 50 Hz (mA)	Power loss @ 250°C 50Hz (W)	Inductance	Capacitance			Resistance	Weight Approx. (g)
	6.3 X 0.8						L	Cx	Cy1	Cy2	kΩ	
							mH	µF	nF	nF		
AMI-1090B-1-1	-1	-	-	1	0	2	20	0.22	-	-	680	100
AMI-1090B-1-3	-	-3	-	1	0	2	20	0.22	-	-	680	100
AMI-1090B-3-1	-1	-	-	3	0	2	14	0.33	-	-	470	200
AMI-1090B-3-3	-	-3	-	3	0	2	14	0.33	-	-	470	200
AMI-1090B-4-1	-1	-	-	4	0	6.5	14	0.33	-	-	470	250
AMI-1090B-4-3	-	-3	-	4	0	6.5	14	0.33	-	-	470	250
AMI-1090B-6-1	-1	-	-	6	0	7.5	8	0.47	-	-	330	250
AMI-1090B-6-3	-	-3	-	6	0	7.5	8	0.47	-	-	330	250
AMI-1090B-6-M4	-	-	M4	6	0	7.5	8	0.47	-	-	330	250
AMI-1090B-8-1	-1	-	-	8	0	8	8	0.47	-	-	330	350
AMI-1090B-8-3	-	-3	-	8	0	8	8	0.47	-	-	330	350
AMI-1090B-10-1	-1	-	-	10	0	8.5	8	0.47	-	-	330	500
AMI-1090B-10-3	-	-3	-	10	0	8.5	8	0.47	-	-	330	500
AMI-1090B-10-M4	-	-	M4	10	0	8.5	8	0.47	-	-	330	500
AMI-1090B-12-1	-1	-	-	12	0	12.5	4	1	-	-	220	500
AMI-1090B-12-3	-	-3	-	12	0	12.5	4	1	-	-	220	500
AMI-1090B-12-M4	-	-	M4	12	0	12.5	4	1	-	-	220	500
AMI-1090B-16-1	-1	-	-	16	0	11	4	1	-	-	220	550
AMI-1090B-16-3	-	-3	-	16	0	11	4	1	-	-	220	550
AMI-1090B-20-1	-1	-	-	20	0	8.5	2.7	1	-	-	220	600
AMI-1090B-20-M4	-	-	M4	20	0	8.5	2.7	1	-	-	220	600
AMI-1090B-30-M4	-	-	M4	30	0	10.5	1.5	1	-	-	220	600

Selection Table

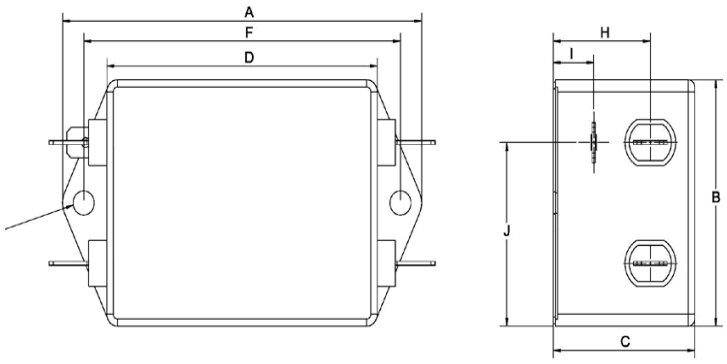
ENHANCED VERSION												
Available Part Numbers	Termination			Current Rating @ 40°C (A)	Leakage current @250VAC/ 50 Hz (mA)	Power loss @ 250°C 50Hz (W)	Inductance	Capacitance			Resistance	Weight Approx. (g)
	 6.3 X 0.8						L	Cx	Cy1	Cy2	kΩ	
							mH	µF	nF	nF		
AMI-1090N-1-1	-1	-	-	1	3.4	2	20	0.22	22	22	680	100
AMI-1090N-1-3	-	-3	-	1	3.4	2	20	0.22	22	22	680	100
AMI-1090N-3-1	-1	-	-	3	15.7	2	14	0.33	100	100	470	200
AMI-1090N-4-1	-1	-	-	4	15.7	6.5	14	0.33	100	100	470	250
AMI-1090N-6-1	-1	-	-	6	15.7	7.5	8	0.47	100	100	330	250
AMI-1090N-8-1	-1	-	-	8	15.7	8	8	0.47	100	100	330	350
AMI-1090N-10-1	-1	-	-	10	5.1	8.5	8	0.47	33	33	330	500
AMI-1090N-10-M4	-	-	M4	10	5.1	8.5	8	0.47	33	33	330	500
AMI-1090N-12-1	-1	-	-	12	5.1	12.5	4	1	33	33	220	500
AMI-1090N-12-M4	-	-	M4	12	5.1	12.5	4	1	33	33	220	500
AMI-1090N-16-1	-1	-	-	16	5.1	11	4	1	33	33	220	550
AMI-1090N-20-1	-1	-	-	20	5.1	8.2	2.7	1	33	33	220	600
AMI-1090N-20-M4	-	-	M4	20	5.1	8.2	2.7	1	33	33	220	600
AMI-1090N-30-M4	-	-	M4	30	5.1	10.1	1.5	1	33	33	220	600

Mechanical Drawing

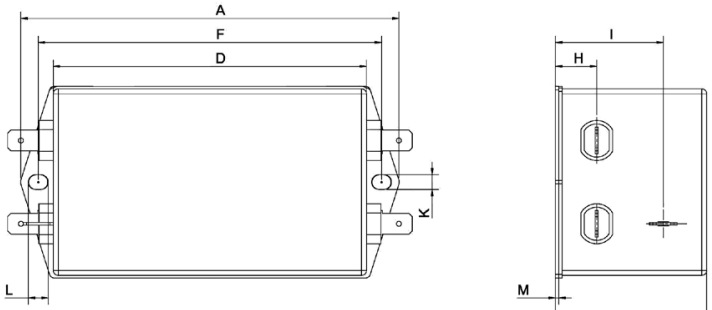
Connection style -1, 1A types



Connection style -1, 3A to 6A types

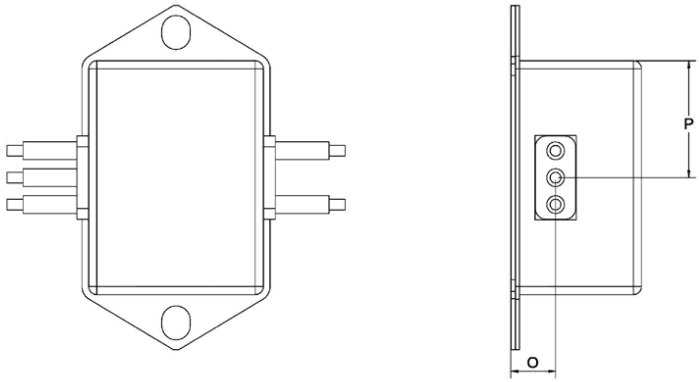


Connection style -1, 8A to 30A types



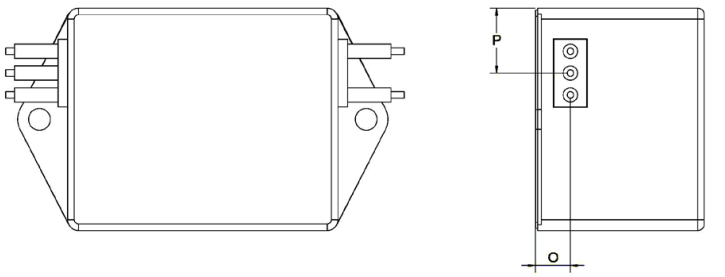
Connection style -3, 1A type

(same dimensions as style-1)

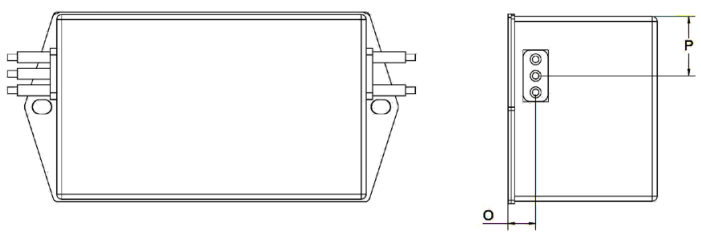


Mechanical Drawing

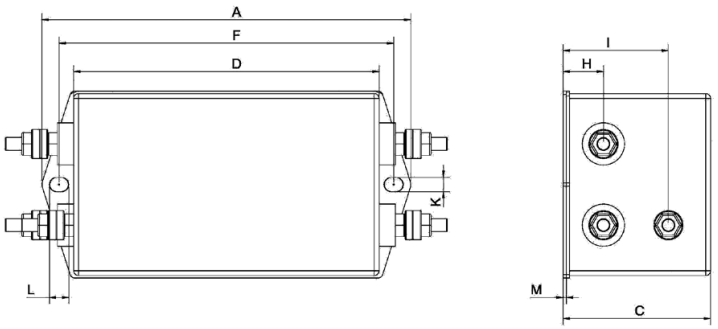
Connection style -3, 3A to 6A type
(same dimensions as style -1)



Connection style -3, 8A to 30A types
(same dimensions as style -1)



Connection style -6, 10A to 30A types



Mechanical Dimensions:

	1A	3A	4A	6A	8A	10A	12A	16A	20A	30A
A	71±1	85±1	85±1	85±1	113.5±1	113.5±1	113.5±1	113.5±1	113.5±1	113.5±1
B	46.6±1	51±1	51±1	51±1	57.5±1	57.5±1	57.5±1	57.5±1	57.5±1	57.5±1
C	22.3±1	32.3±1	32.3±1	32.3±1	45.4±1	45.4±1	45.4±1	45.4±1	45.4±1	45.4±1
D	50.5±1	64±1	64±1	64±1	94±1	94±1	94±1	94±1	94±1	94±1
E	44.5				56	56	56	56	56	56
F	61	75	75	75	103	103	103	103	103	103
K	5.3	5	5	5	4.4	4.4	4.4	4.4	4.4	4.4
L	6.3				6	6	6	6	6	6
M	0.6	0.6	0.6	0.6	1	1	1	1	1	1
N	6.3x0.8	6.3X0.8	6.3X0.8	6.3X0.8	6.3X0.8	6.3X0.8	6.3X0.8	6.3X0.8		
AWG Type Wire	AWG 20	AWG 20	AWG 20	AWG 18	AWG 18	AWG 18	AWG 16	AWG 16		
Wire Length	140	140	140	140	140	140	140	140		
N						M4	M4	M4	M4	M4
Recommended torque (Nm)						1.2-1.3	1.2-1.3	1.2-1.3	1.2-1.3	1.2-1.3
Recommended torque (Nm)						1.5-1.7	1.5-1.7	1.5-1.7	1.5-1.7	1.5-1.7

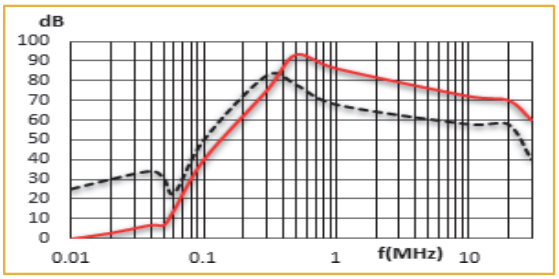
Typical Insertion Loss

According to CISPR17 in 50 Ω system

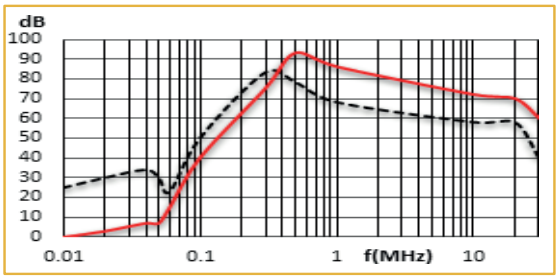
Common Mode / Asymmetrical (L-G)
Differential Mode / Symmetrical (L-L)

1A

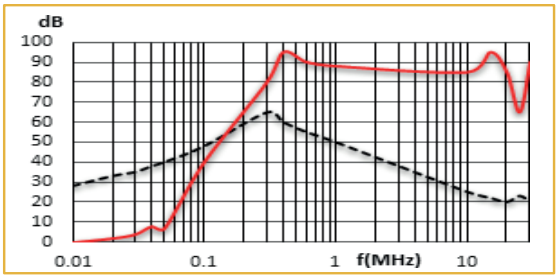
Standard Version



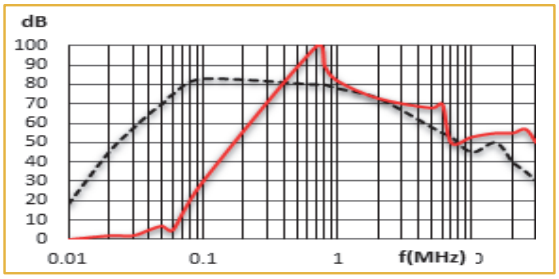
Safety Version



Medical Version

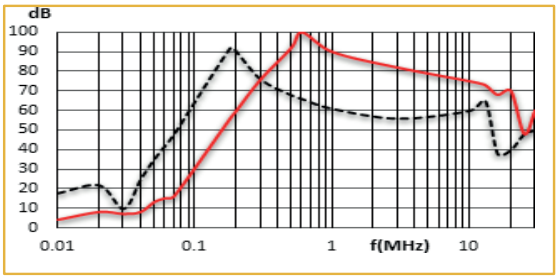


Enhanced Performance



3A - 4A

Standard Version



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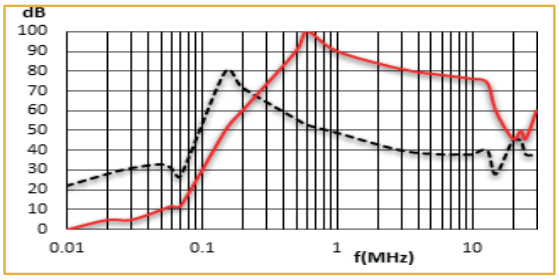
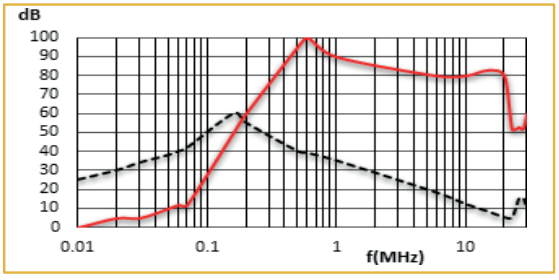
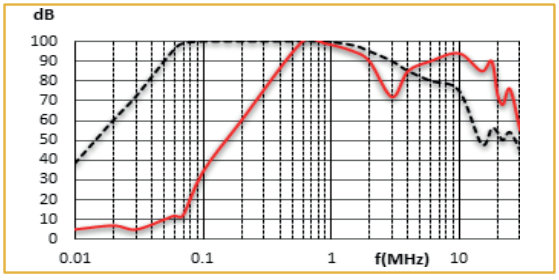


Medical Version



Enhanced Performance



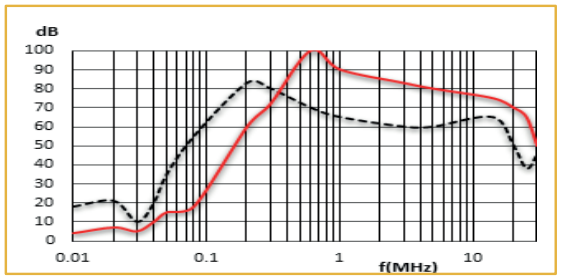
Typical Insertion Loss

According to CISPR17 in 50 Ω system

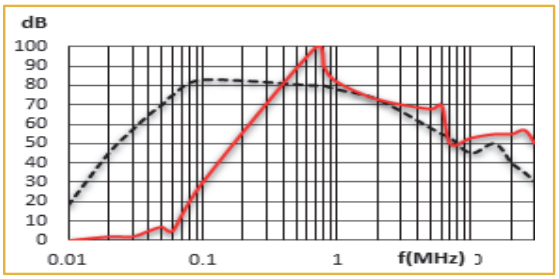
Common Mode / Asymmetrical (L-G)
Differential Mode / Symmetrical (L-L)

6A

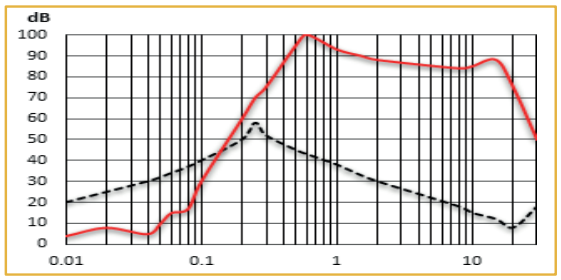
Standard Version



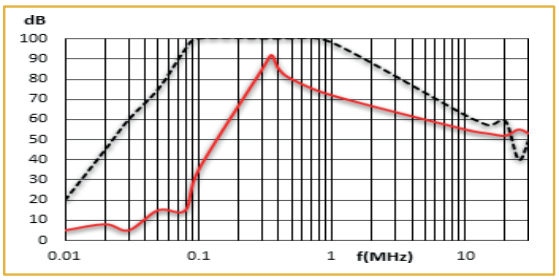
Safety Version



Medical Version

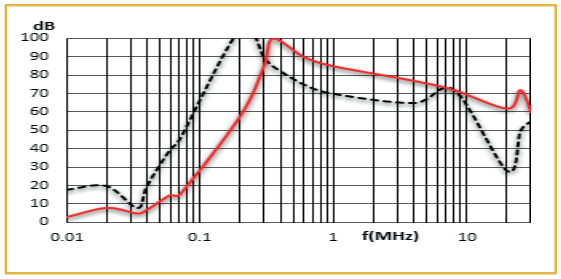


Enhanced Performance

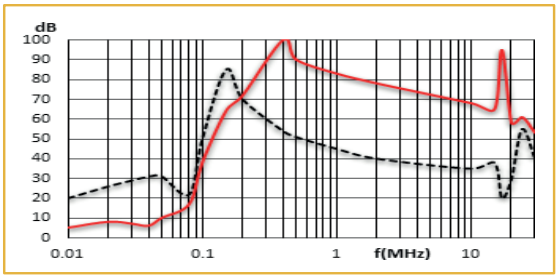


8A-10A

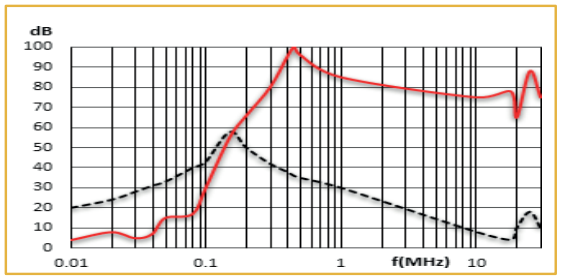
Standard Version



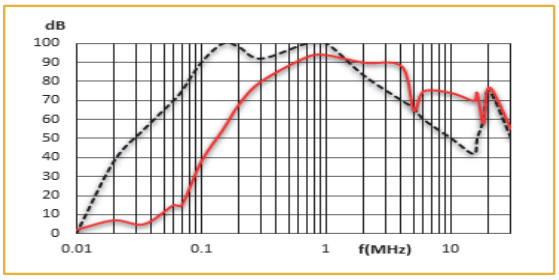
Safety Version



Medical Version



Enhanced Performance

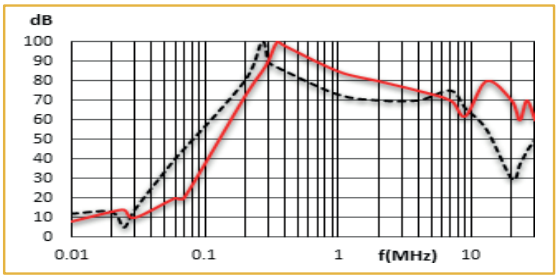


Typical Insertion Loss

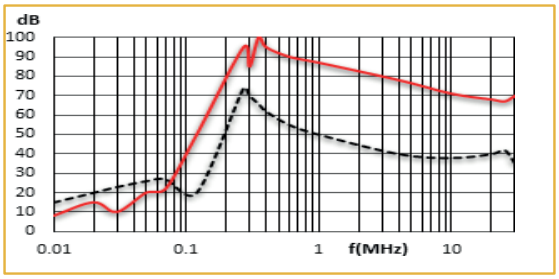
According to CISPR17 in 50 Ω system

Common Mode / Asymmetrical (L-G)
Differential Mode / Symmetrical (L-L)

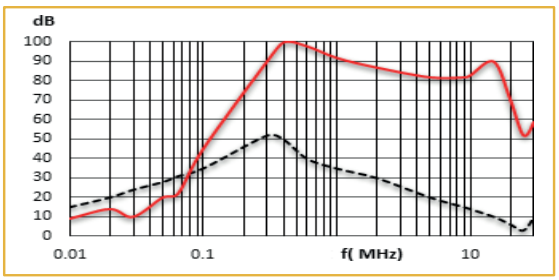
12A-16A Standard Version



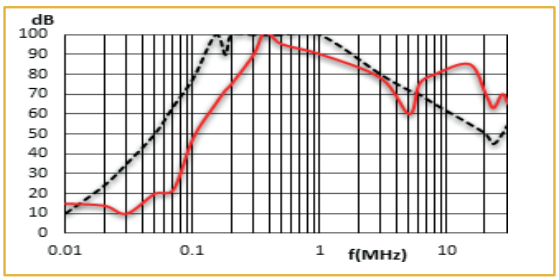
Safety Version



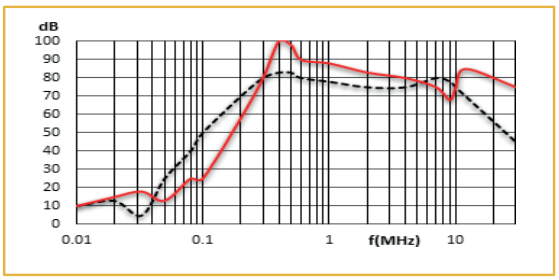
Medical Version



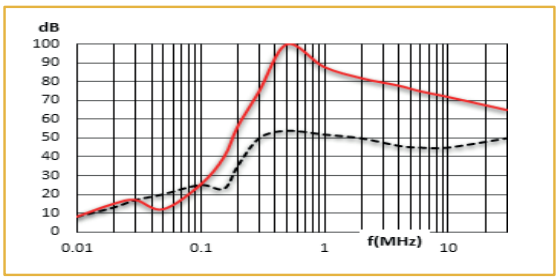
Enhanced Performance



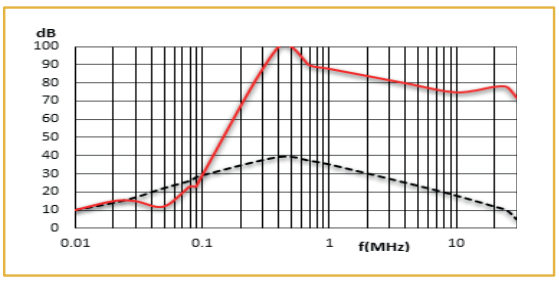
20A Standard Version



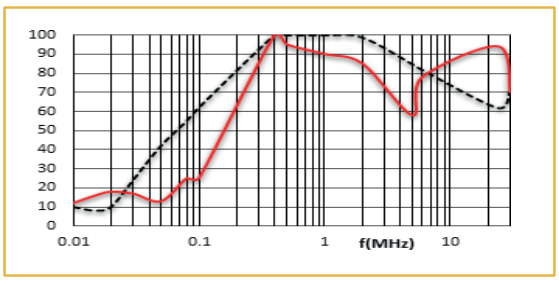
Safety Version



Medical Version



Enhanced Performance

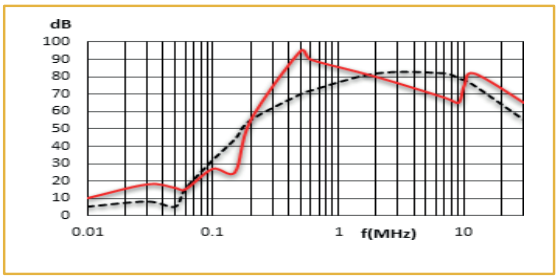


Typical Insertion Loss

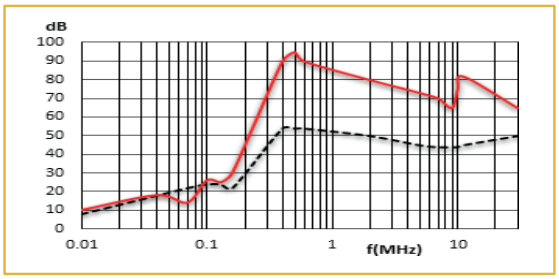
According to CISPR17 in 50 Ω system

Common Mode / Asymmetrical (L-G)
Differential Mode / Symmetrical (L-L)

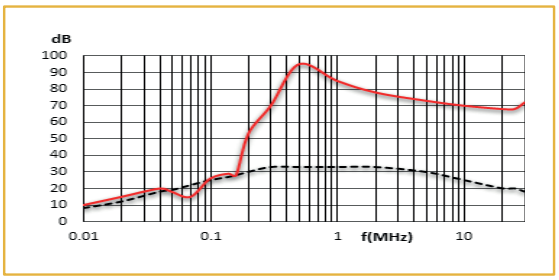
30A **Standard Version**



Safety Version



Medical Version



Enhanced Performance