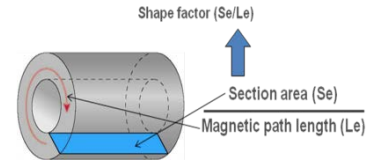


Ferrite Cores, Tiles, and Sheets



1. Shape factor (Se/Le): the larger the shape factor, the higher the impedance. If there is 1 turn through the ferrite, a snug fit and longer core is recommended (space permitting).
2. Adjust the ferrite core's position to target the antinode of the problem frequency.
3. Impedance performance can be increased by turning the cable around the core.



ROUND CABLE CORES: Split Type **G Ferrite Core** – nickel-free



GRFC Series

| PART NO. | Profile | A | B | C | D | Applicable Cable Diameter | Impedance $\Omega/100\text{MHz}$ (1Turn) |
|----------|---------|-------|------|------|------|---------------------------|--|
| GRFC-3 | N/A | 13.7 | 13.5 | 18.0 | - | 3.0 ~ 4.0 | ≥ 35 |
| GRFC-4 | N/A | 13.7 | 13.5 | 27.5 | - | 3.5 ~ 4.5 | ≥ 75 |
| GRFC-5 | N/A | 18.1 | 18.4 | 31.5 | 35.5 | 4.5 ~ 5.5 | ≥ 100 |
| GRFC-6 | N/A | 18.1 | 18.4 | 31.5 | 35.5 | 5.5 ~ 6.5 | ≥ 100 |
| GRFC-7 | N/A | 14.25 | 15.8 | 20.0 | 24.0 | 7.0 MAX | ≥ 45 |
| GRFC-8 | N/A | 20.1 | 20.4 | 31.5 | 35.5 | 7.5 ~ 8.5 | ≥ 75 |
| GRFC-9 | N/A | 20.1 | 20.4 | 31.5 | 35.5 | 8.5 ~ 9.5 | ≥ 75 |
| GRFC-10 | N/A | 26.3 | 26.4 | 32.4 | 37.2 | 9.5 ~ 10.5 | ≥ 105 |
| GRFC-13 | N/A | 29.1 | 29.4 | 31.5 | 36.3 | 12.5 ~ 13.5 | ≥ 95 |

RFC Series

| | | | | | | | |
|----------------------------------|-----|------|------|------|---|-------------|------------|
| RFC-H13 | N/A | 31.7 | 29.4 | 41.0 | - | 12.5 ~ 13.5 | ≥ 170 |
| RFC-20 | N/A | 40.0 | 40.0 | 47 | - | 20 MAX | ≥ 180 |
| RFCK2-20 (RFC-20 with mount tab) | N/A | 40.0 | 40.0 | 47 | - | 20 MAX | ≥ 180 |

GTFC Series

| | | | | | | | |
|---------------|---|------|------|------|---|----------|-----------|
| GTFC-16-8-13 | 1 | 22.3 | 20.1 | 18.9 | - | 7.2 MAX | ≥ 45 |
| GTFC-16-8-16 | 1 | 22.3 | 20.1 | 21.9 | - | 7.2 MAX | ≥ 55 |
| GTFC-20-10-10 | 1 | 27.1 | 24.9 | 16.0 | - | 8.5 MAX | ≥ 40 |
| GTFC-23-11-14 | 1 | 30.5 | 28.3 | 20.2 | - | 10.5 MAX | ≥ 55 |
| GTFC-25-15-12 | 1 | 31.1 | 28.9 | 17.8 | - | 13.0 MAX | ≥ 40 |
| GTFC-28-16-13 | 1 | 35.1 | 32.9 | 18.8 | - | 14.7 MAX | ≥ 50 |
| GTFC-28-16-20 | 1 | 35.1 | 32.9 | 25.8 | - | 14.7 MAX | ≥ 70 |
| GTFC-41-27-16 | 2 | 48.2 | 44.5 | 19.6 | - | 26.0 MAX | ≥ 50 |

GTFCCK Series

| | | | | | | | |
|-----------------|---|------|------|------|------|----------|-----------|
| GTFCCK-16-8-13 | 1 | 32.5 | 20.4 | 18.9 | 22.9 | 7.2 MAX | ≥ 45 |
| GTFCCK-16-8-16 | 1 | 32.5 | 20.4 | 21.9 | 25.9 | 7.2 MAX | ≥ 55 |
| GTFCCK-20-10-10 | 1 | 37.1 | 24.9 | 16.0 | 20.0 | 8.5 MAX | ≥ 40 |
| GTFCCK-23-11-14 | 1 | 40.5 | 28.3 | 20.2 | 24.2 | 10.5 MAX | ≥ 55 |
| GTFCCK-25-15-12 | 1 | 41.2 | 28.9 | 17.8 | 21.8 | 13.0 MAX | ≥ 40 |
| GTFCCK-28-16-13 | 1 | 45.3 | 32.9 | 18.8 | 22.8 | 14.7 MAX | ≥ 50 |
| GTFCCK-28-16-20 | 1 | 45.3 | 32.9 | 25.8 | 29.8 | 14.7 MAX | ≥ 70 |
| GTFCCK-41-27-16 | 2 | 51.8 | 44.5 | 19.6 | - | 26.0 MAX | ≥ 50 |

GTRCA Series

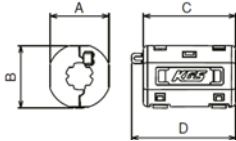
| | | | | | | | |
|----------------|-----|------|------|------|---|---|-----------|
| GTRCA-20-10-10 | N/A | 22.6 | 8.2 | 13.3 | - | - | ≥ 45 |
| GTRCA-25-15-12 | N/A | 27.3 | 12.8 | 15.2 | - | - | ≥ 40 |

GTFCR Series

| | | | | | | | |
|----------------|---|------|------|------|------|---------|-----------|
| GTFCR-16-8-16 | 1 | 35.8 | 20.1 | 16.3 | 21.9 | 7.2 MAX | ≥ 55 |
| GTFCR-41-27-16 | 2 | 55.2 | 44.5 | 23.6 | 19.6 | 26 MAX | ≥ 50 |

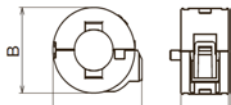
Operating temperature: -40 ~ 85°C

GRFC Series

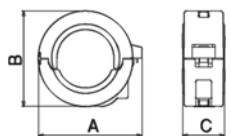


GTFC Series

Profile 1

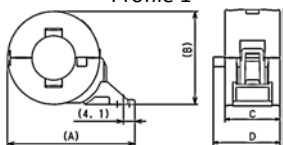


Profile 2

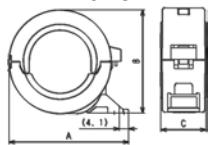


GTFCCK Series

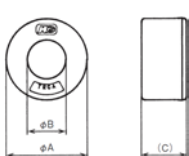
Profile 1



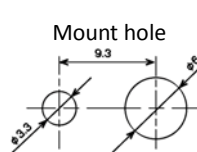
Profile 2



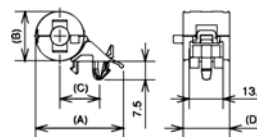
GTRCA Series



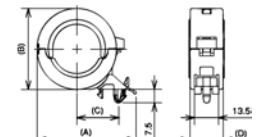
GTFCR Series



Profile 1



Profile 2



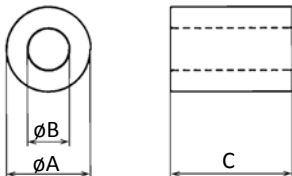
KITAGAWA INDUSTRIES America, Inc.
 2325 Paragon Drive, Suite 10, San Jose, CA 95131
 Tel: (408) 971-2055 Fax: (408) 971-6033
 www.kgs-ind.com

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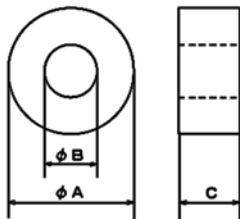
The specifications and properties regarding performance above are not guaranteed, and are subject to change without notice due to product improvement and specification change. While our absorbers are electrically non-conductive, usage directly on the PC Board near the power should be carefully checked. KITAGAWA INDUSTRIES America, Inc. makes no guarantees as to electrical resistivity values and accepts no liability due to short circuits where EMI absorbers are used directly on a PC Board. The products are designed for EMI noise reduction for electronics. This is not recommended to use for applications involving human life or extremely high accuracy. Prior to your usage of the products in production, please verify their performance of EMI noise absorption or adhesive strength of PSA for long term use. Avoid applying any external stress such as bending or high amounts of tension. Note that when the absorber products are cut, bent or pulled, there might be some possibility of creating cracks. For storage of the products keep them in cool and dry rooms at ambient temperature avoiding high temperatures, humidity, and direct sunlight. Keep in a cool, dry, well ventilated place.

ROUND CABLE CORES: One-Piece Type G Ferrite Core – nickel-free

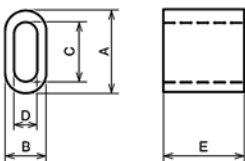
GRI Series



GTR Series



GTRE Series



GRIP Series



GRI Series

Unit: mm

| Part No. | A | B | C | Impedance $\Omega/100\text{MHz}$ (1Turn) |
|--------------------|------|------|------|--|
| GRI-3-4-1 | 3 | 1 | 4 | ≥ 25 |
| GRI-3.5-3.5-1.2 | 3.5 | 1.2 | 3.5 | ≥ 25 |
| GRI-3.5-7-1.2 | 3.5 | 1.2 | 7 | ≥ 40 |
| GRI-4-5-1.5 | 4 | 1.5 | 5 | ≥ 30 |
| GRI-11-18-5 | 11 | 5 | 18.5 | ≥ 85 |
| GRI-11-20-5 | 11 | 5 | 20 | ≥ 90 |
| GRI-11-25-5 | 11 | 5 | 25 | ≥ 105 |
| GRI-12-16-8.5 | 12 | 8.5 | 16 | ≥ 35 |
| GRI-12.3-20-7 | 12.3 | 7 | 20 | ≥ 70 |
| GRI-14-28-6 | 14.3 | 6.3 | 28.6 | ≥ 130 |
| GRI-16-20-7 | 16 | 7 | 20 | ≥ 95 |
| GRI-16-28-7 | 16 | 7 | 28 | ≥ 130 |
| GRI-16-28-8 | 16 | 8 | 28 | ≥ 115 |
| GRI-16-28-9 | 16 | 9 | 28 | ≥ 95 |
| GRI-17.5-28.5-10.7 | 17.5 | 10.7 | 28.5 | ≥ 85 |
| GRI-18-28-10 | 18 | 10 | 28 | ≥ 100 |
| GRI-26-28-13 | 26 | 13 | 28 | ≥ 120 |

Operating temperature: -40 ~ 85°C

GTR Series

Unit: mm

| Part No. | A | B | C | Impedance $\Omega/100\text{MHz}$ (1Turn) |
|---------------|------|------|------|--|
| GTR-7-3-4 | 7 | 3.5 | 4 | ≥ 20 |
| GTR-9-5-8 | 9 | 5 | 8 | ≥ 30 |
| GTR-10-5-5 | 10 | 5 | 5 | ≥ 25 |
| GTR-11-5-9 | 11 | 5 | 9 | ≥ 45 |
| GTR-12.5-8-12 | 12.6 | 8.1 | 12 | ≥ 35 |
| GTR-13-7-6 | 13 | 7 | 6 | ≥ 25 |
| GTR-13-7-12.7 | 13 | 7.1 | 12.7 | ≥ 45 |
| GTR-14.5-10-8 | 14.5 | 10.2 | 8 | ≥ 20 |
| GTR-16-8-13 | 16.5 | 8.2 | 13 | ≥ 55 |
| GTR-16-8-16 | 16.5 | 8.2 | 16 | ≥ 65 |
| GTR-16-10-7 | 16 | 10 | 7 | ≥ 25 |
| GTR-16-10-10 | 16 | 10 | 10 | ≥ 30 |
| GTR-18-10-6 | 18 | 10 | 6 | ≥ 25 |
| GTR-20-10-5 | 20.5 | 10.2 | 5 | ≥ 25 |
| GTR-20-10-10 | 20.5 | 10.2 | 10 | ≥ 45 |
| GTR-21-13-6 | 21.2 | 12.7 | 6 | ≥ 25 |
| GTR-22-14-10 | 22 | 14 | 10 | ≥ 30 |
| GTR-23-11-14 | 23.6 | 11.4 | 14 | ≥ 60 |
| GTR-25-15-8 | 25 | 15 | 8 | ≥ 30 |
| GTR-25-15-12 | 25 | 15 | 12 | ≥ 40 |
| GTR-28-16-13 | 28 | 16 | 13 | ≥ 45 |
| GTR-28-16-20 | 28 | 16 | 20 | ≥ 70 |
| GTR-31-19-8 | 31 | 19 | 8 | ≥ 30 |
| GTR-40-27-15 | 40.6 | 27.4 | 15 | ≥ 45 |

Operating temperature: -40 ~ 85°C

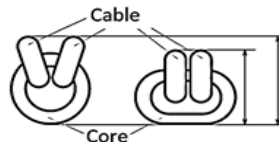
GTRE Series

Unit: mm

| Part No. | A | B | C | D | E | Impedance $\Omega/100\text{MHz}$ (1Turn) |
|----------------|------|-----|------|-----|------|--|
| GTRE-14-12.5-8 | 14.0 | 8.0 | 10.0 | 4.0 | 12.5 | ≥ 30 |
| GTRE-14-14-8 | 14.0 | 8.0 | 10.0 | 4.0 | 14.0 | ≥ 35 |

Operating temperature: -40 ~ 85°C

Cross-sectional view of GRI (round) and GTRE (oblong) ferrite cores

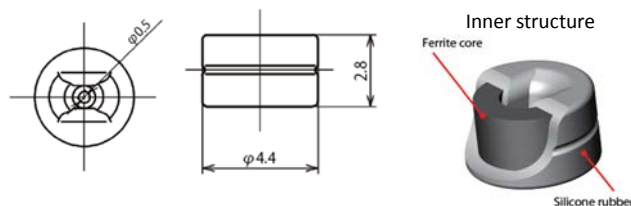


Unit: mm

| Part No. | Outer Diameter | Height | Applicable Lead Diameter | Applicable Lead Dimension | Impedance $\Omega/100\text{MHz}$ (1Turn) |
|----------------|----------------|--------|--------------------------|---------------------------|--|
| GRIP-3.5-1.8-2 | $\phi 4.4$ | 2.8 | $\phi 0.6\sim 1.6$ | W: 0.8~1.5 T: 0.3~0.7 | ≥ 15 |

Operating temperature: -40 ~ 125°C

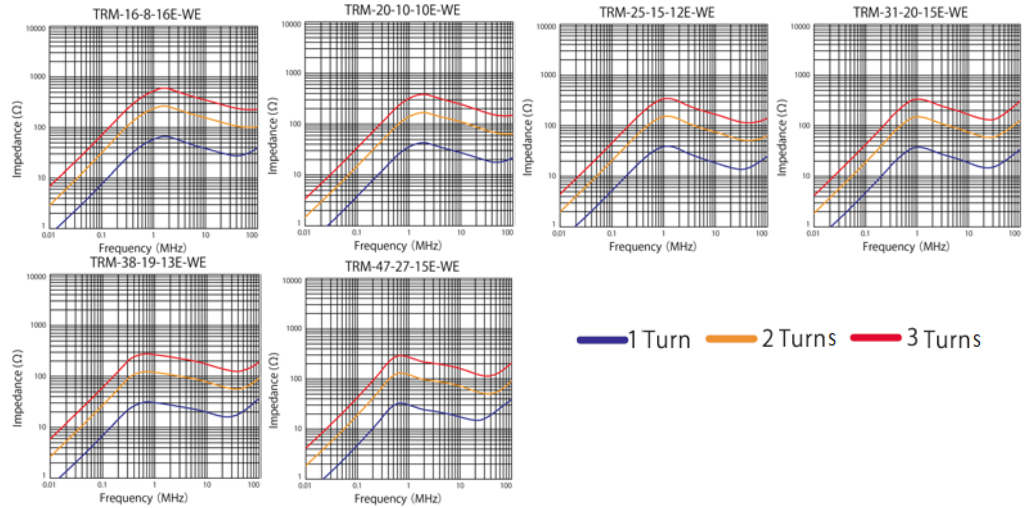
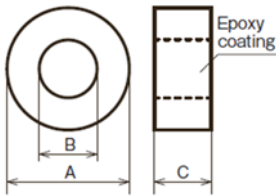
Application Example



Low Frequency Cores

TRM – cores for low frequency range

- High impedance noise filters for the low MHz range
- Turning the cable around the core increases effectiveness by a power of 2 (N^2)
- Operating temperature: -40 ~ 85°C

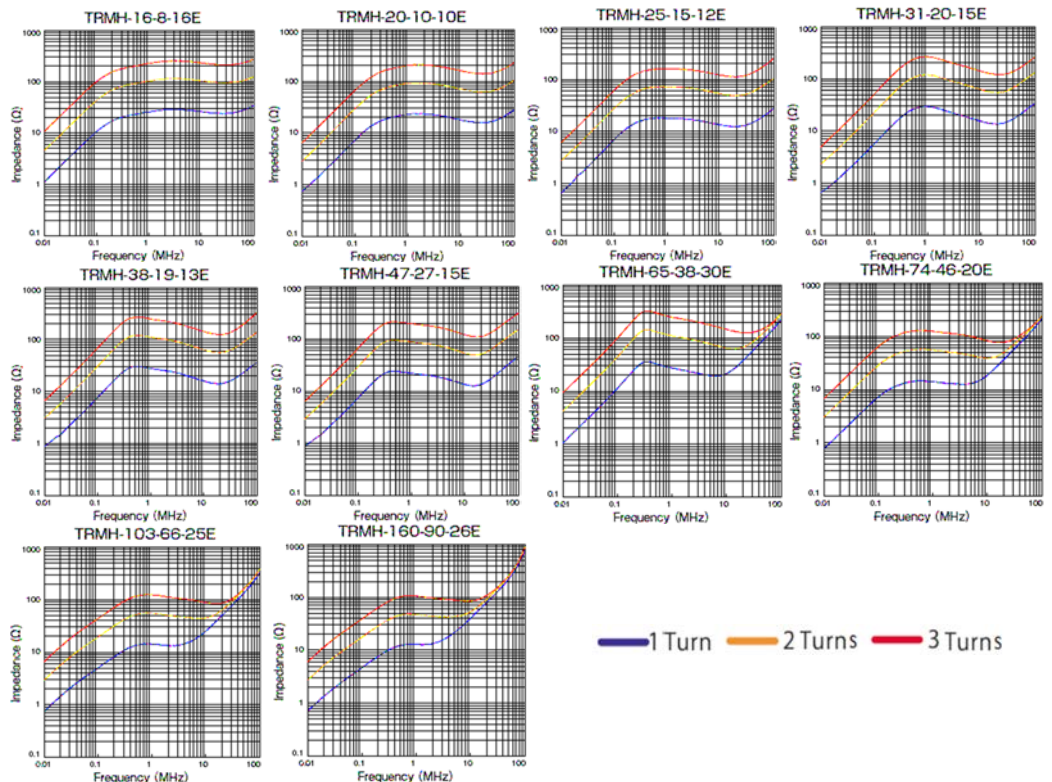
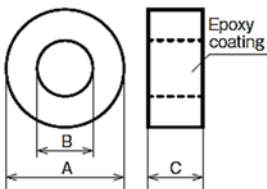
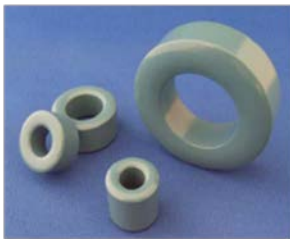


Unit: mm

| Part No. | A | B | C | Impedance $\Omega/10\text{MHz}$ (2 turns) |
|------------------|------|------|------|---|
| TRM-16-8-16E-WE | 17.0 | 7.1 | 16.9 | ≥ 70 |
| TRM-20-10-10E-WE | 21.0 | 9.1 | 10.9 | ≥ 35 |
| TRM-25-15-12E-WE | 26.0 | 14.1 | 12.9 | ≥ 35 |
| TRM-31-20-15E-WE | 32.1 | 19.0 | 15.9 | ≥ 30 |
| TRM-38-19-13E-WE | 39.2 | 17.9 | 14.0 | ≥ 35 |
| TRM-47-27-15E-WE | 48.5 | 25.7 | 16.3 | ≥ 25 |

TRMH – Low frequency, high μ ferrite cores

- High impedance at less than 1MHz
- Increased impedance obtained with each turn around the core
- Suitable for conducted emissions in the kHz range
- Operating temperature: -40 ~ 85°C



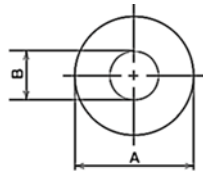
Unit: mm

| Part No. | A | B | C | Impedance $\Omega/1\text{MHz}$ (1 Turn) |
|-----------------|-------|-------|------|---|
| TRMH-16-8-16E | 16.9 | 7.2 | 16.8 | ≥ 18 |
| TRMH-20-10-10E | 21.0 | 9.2 | 10.9 | ≥ 11 |
| TRMH-25-15-12E | 25.9 | 14.1 | 12.8 | ≥ 9 |
| TRMH-31-20-15E | 32.1 | 19.0 | 15.9 | ≥ 9 |
| TRMH-38-19-13E | 39.1 | 18.0 | 13.9 | ≥ 11 |
| TRMH-47-27-15E | 48.3 | 26.0 | 15.9 | ≥ 10 |
| TRMH-65-38-30E | 67.3 | 36.6 | 31.1 | ≥ 12 |
| TRMH-74-46-20E | 75.76 | 44.22 | 21.0 | ≥ 6 |
| TRMH-103-66-25E | 105.6 | 63.1 | 26.9 | ≥ 6 |
| TRMH-160-90-26E | 165.1 | 87.9 | 28.1 | ≥ 6 |

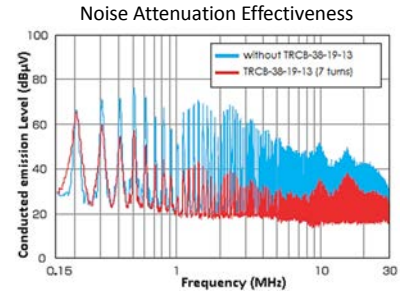
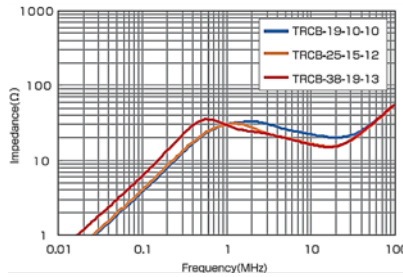
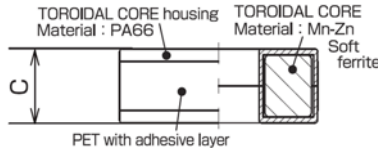
TRCB – Low frequency ferrite core with plastic casing

- Plastic casing protects ferrite from cracking and chipping
- Suitable for conducted emission from kHz to lower MHz range

Unit: mm



| Part No. | A | B | C | Impedance $\Omega/10\text{MHz}$ (1 Turn) |
|---------------|------|------|--------|--|
| TRCB-19-10-10 | 20 | 8.1 | (11.7) | ≥ 11 |
| TRCB-25-15-12 | 26.7 | 13.3 | (13.5) | ≥ 8 |
| TRCB-38-19-13 | 40.5 | 16.6 | (15.1) | ≥ 7 |



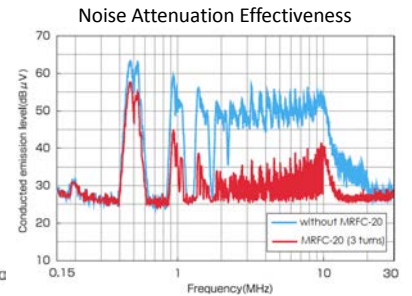
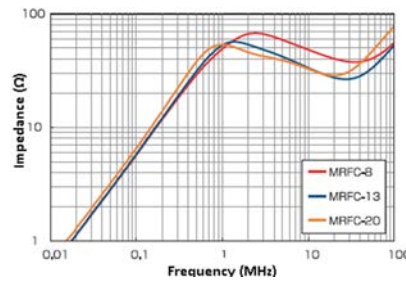
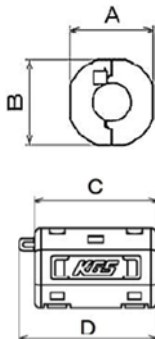
MRFC – ferrite clamp for low frequency range

- Aimed to suppress low frequency noise between 150kHz ~ 30MHz
- Plastic screw mount option available
- Operating temperature: -40°C ~ 85°C
- UL94 V-0 rated housing

Unit: mm



| Part No. | Part No. (screw mount option) | A | B | C | D | Applicable cable diameter | Impedance $\Omega/10\text{MHz}$ (1 Turn) |
|----------|-------------------------------|------|-------|------|------|---------------------------|--|
| MRFC-8 | - | 20.1 | 20.4 | 31.5 | 35.5 | 8.5 (MAX) | ≥ 20 |
| MRFC-13 | MRFC-13 | 29.1 | 33.05 | 32.3 | 37.1 | 13.5 (MAX) | ≥ 20 |
| MRFC-20 | MRFC-20 | 40.3 | 40 | 47 | 53.5 | 20.0 (MAX) | ≥ 20 |



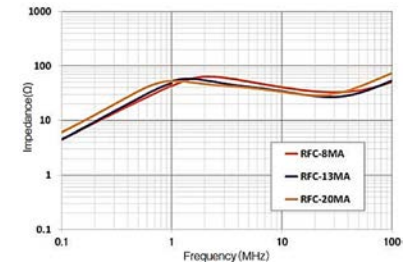
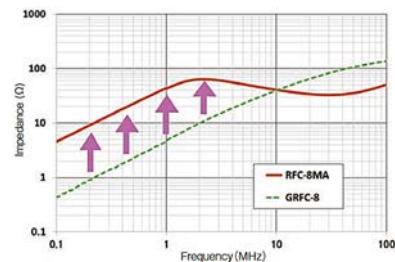
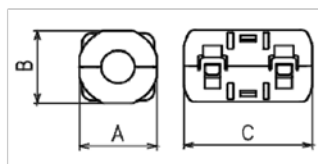
RFC-MA – Low frequency, high μ ferrite cores

- Aimed to suppress low frequency noise generated by engine control units (ECU), inverters, and motors
- Split type with heat-resistant plastic casing
- Operating temperature: -40°C ~ 125°C
- Casing designed with a slot for a plastic cable tie
- UL94 V-2 rated housing

Unit: mm



| Part No. | A | B | C | Applicable Cable Diameter | Impedance $\Omega/10\text{MHz}$ (1 Turn) |
|----------|------|------|------|---------------------------|--|
| RFC-8MA | 20.6 | 19.8 | 34.0 | 8.5 (MAX) | ≥ 20 |
| RFC-13MA | 29.6 | 28.4 | 34.0 | 12.5~13.5 | ≥ 20 |
| RFC-20MA | 40.0 | 40.0 | 47.0 | 20 (MAX) | ≥ 20 |



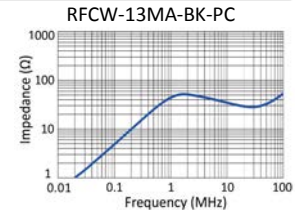
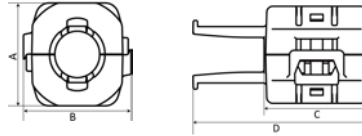
Low Frequency Ferrite Clamp **NEW!**

- Automotive grade ferrite for suppressing low frequency noise (150kHz~30MHz)
- Specifically designed to withstand vibration requirements for passenger vehicles
- Easy to install and very secure; un/installation requires a tool to unfasten the clamp's interlocking feature
- Outer casing also feature strap and tape mounting guides to prevent sliding
- Casing is UL94V-2 rating
- Operating temperature: -40~125°C



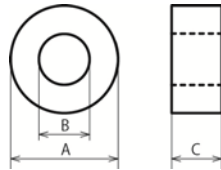
| Part No. | A | B | C | D | Applicable Cable Diameter | Impedance $\Omega/10\text{MHz}$ (1turn) |
|------------------|------|------|------|------|---------------------------|---|
| RFCW-13MA-BK-1PC | 31.4 | 33.6 | 34.8 | 58.3 | 13.5 MAX | ≥ 20 |

Product dimensions (2 pieces locked together)

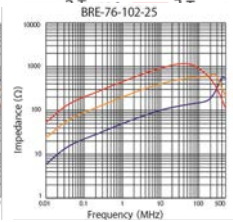
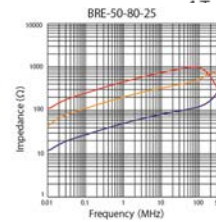
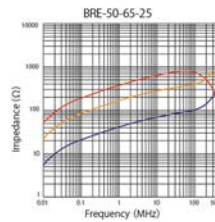
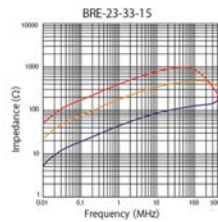
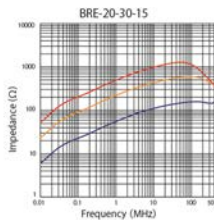
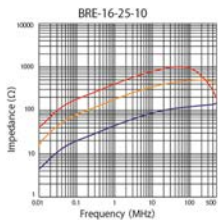


BROAD EFFECT CORE

- Amorphous metal core, effective for conducted and radiated broadband noise suppression from around 1MHz~100MHz
- High impedance characteristics reduces the number of cable turns
- Impedance characteristics remains stable within a wide temperature range
- Operating temperature: -30 ~ 130°C
- PBT plastic housing provides electrical insulation and is UL94 V-0 rated

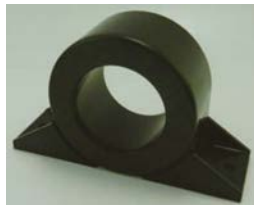


| Part No. | A | B | C | Impedance $\Omega/1\text{MHz}$ (1turn) |
|---------------|-------|------|------|--|
| BRE-16-25-10 | 27.5 | 13.8 | 12.6 | ≥ 28 |
| BRE-20-30-15 | 33.5 | 17.7 | 17.9 | ≥ 36 |
| BRE-23-33-15 | 36.3 | 21 | 18 | ≥ 28 |
| BRE-50-65-25 | 68.4 | 46.7 | 28.7 | ≥ 34 |
| BRE-50-80-25 | 84 | 47 | 29.2 | ≥ 38 |
| BRE-76-102-25 | 107.9 | 70.2 | 30.4 | ≥ 31 |

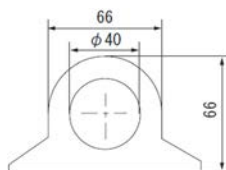


AMORPHOUS CORE

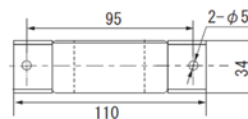
- Higher magnetic permeability and saturated magnetic density than a ferrite core
- Suppresses noise from 150kHz ~ 30MHz generated by switching regulator or inverter
- Available with screw hole on either side
- UL94 V-0 rated



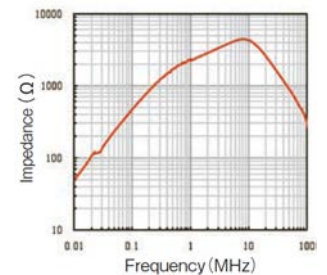
AF01-40 Dimensions (Side view in mm)



AF01-40 Dimensions (Top view in mm)

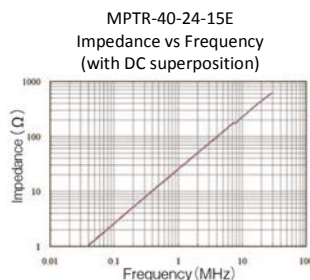


AF01-40 Impedance vs Frequency (10 turns)



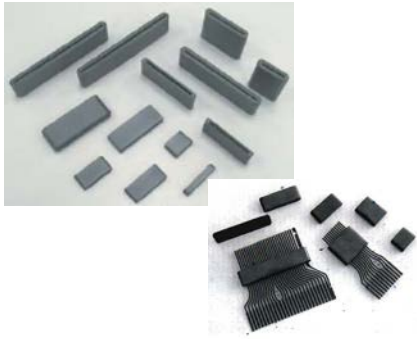
METAL CORE

- Due to higher magnetic flux density, current superposition (current at 20A or less) will not lower the impedance
- Resin-coated core to protect cables
- Impedance is stable from -40°C ~ +140°C, with a high Curie temperature
- Possible to suppress normal mode noise

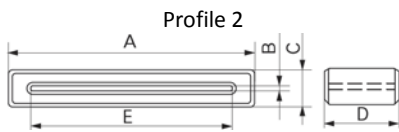
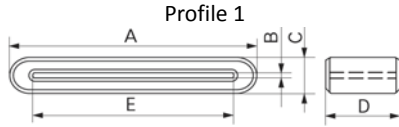


| PART NO. | Max Outer Diameter | Min Inner Diameter | Max Length | Impedance $\Omega/1\text{MHz}$ (5turns) |
|----------------|--------------------|--------------------|------------|---|
| MPTR-20-13-10E | 21.2 | 11.8 | 10.9 | ≥ 7 |
| MPTR-27-15-11E | 27.8 | 13.8 | 12.1 | ≥ 12 |
| MPTR-40-24-15E | 40.9 | 23.1 | 15.48 | ≥ 12 |

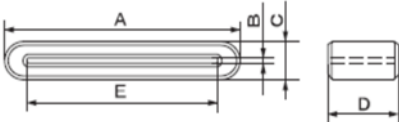
FLAT CABLE CORES: 1-Piece Type **G Ferrite Core** – nickel-free



GFPC Series



GSSC Series



GFPC Series

Unit: mm

| Part No. | Profile | A | B | C | D | E | Impedance $\Omega/100\text{MHz}$ (1 Turn) |
|--------------|---------|------|-----|-----|------|------|--|
| GFPC-11-8-2 | 1 | 11.0 | 0.7 | 2.3 | 8.0 | 9.0 | ≥ 25 |
| GFPC-16-5-3 | 1 | 16.0 | 0.5 | 3.0 | 5.0 | 11.5 | ≥ 20 |
| GFPC-16-8-2 | 1 | 15.5 | 0.7 | 2.3 | 8.0 | 12.0 | ≥ 25 |
| GFPC-16-8-3 | 1 | 16.0 | 0.5 | 3.0 | 8.0 | 11.5 | ≥ 25 |
| GFPC-16-12 | 1 | 16.0 | 0.5 | 5.0 | 12.0 | 11.5 | ≥ 45 |
| GFPC-16-20 | 1 | 16.0 | 0.8 | 5.0 | 20.0 | 11.5 | ≥ 60 |
| GFPC-18-3-2 | 1 | 18 | 0.7 | 2.3 | 3.0 | 14.5 | ≥ 20 |
| GFPC-18-8-2 | 1 | 18.0 | 0.7 | 2.3 | 8.0 | 14.5 | ≥ 25 |
| GFPC-22-8-2 | 1 | 21.5 | 0.7 | 2.3 | 8.0 | 18.0 | ≥ 25 |
| GFPC-24-12-3 | 2 | 23.3 | 0.9 | 3.0 | 12.0 | 20.0 | ≥ 30 |
| GFPC-25-10-3 | 2 | 25.5 | 0.8 | 3.0 | 10.0 | 21.5 | ≥ 25 |
| GFPC-25-12 | 1 | 24.5 | 0.5 | 5.0 | 12.0 | 20.0 | ≥ 35 |
| GFPC-25-15-3 | 2 | 25.5 | 0.8 | 3.0 | 15.0 | 21.5 | ≥ 35 |
| GFPC-25-20 | 1 | 24.5 | 0.5 | 5.0 | 20.0 | 20.0 | ≥ 50 |
| GFPC-31-12 | 1 | 31.0 | 0.5 | 5.0 | 12.0 | 27.0 | ≥ 40 |
| GFPC-31-12-3 | 2 | 31.0 | 1.0 | 3.0 | 12.0 | 27.0 | ≥ 30 |
| GFPC-46-12 | 1 | 46.0 | 0.5 | 5.0 | 12.0 | 41.5 | ≥ 40 |
| GFPC-56-12 | 1 | 56.2 | 0.5 | 5.0 | 12.0 | 52.4 | ≥ 35 |

GSSC Series

| | | | | | | | |
|----------------|-----|------|-----|-----|------|------|-----------|
| GSSC-33.5-8 | N/A | 33.5 | 1.4 | 6.5 | 8.0 | 28.4 | ≥ 30 |
| GSSC-33.5-10 | N/A | 33.5 | 1.4 | 6.5 | 10.0 | 28.4 | ≥ 30 |
| GSSC-33.5-12 | N/A | 33.5 | 1.4 | 6.5 | 12.0 | 28.4 | ≥ 35 |
| GSSC-33.5-20 | N/A | 33.5 | 1.3 | 6.5 | 20.0 | 27.8 | ≥ 50 |
| GSSC-33.5-10-2 | N/A | 33.5 | 2.2 | 7.4 | 10.0 | 27.0 | ≥ 30 |
| GSSC-40-12 | N/A | 40.0 | 1.3 | 6.5 | 12.0 | 35.0 | ≥ 35 |
| GSSC-45-8 | N/A | 45.2 | 1.3 | 6.5 | 8.0 | 40.0 | ≥ 30 |
| GSSC-45-12 | N/A | 45.2 | 1.3 | 6.5 | 12.0 | 40.0 | ≥ 35 |
| GSSC-50-12 | N/A | 50.0 | 1.4 | 6.5 | 12.0 | 44.9 | ≥ 35 |
| GSSC-58-12 | N/A | 57.6 | 1.3 | 6.5 | 12.0 | 52.0 | ≥ 35 |

GSSC series operating temperature: $-40\text{--}85^\circ\text{C}$

FLAT CABLE CORES: 2-Piece Type

- GSSH and GFPH series are a set of two of the same U-shaped pieces
- GFPO series has a combination of one U-shaped piece and one flat piece



GFPH and GFPO Series

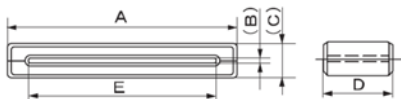
Unit: mm

| Part No. | A | B | C | D | E | Impedance $\Omega/100\text{MHz}$ (1 Turn) |
|--------------|------|-----|-----|------|------|--|
| GFPH-10-6-5 | 10.0 | 1.8 | 5.0 | 6.0 | 6.8 | ≥ 25 |
| GFPO-23-8-3 | 23.0 | 0.5 | 2.8 | 8.0 | 19.0 | ≥ 30 |
| GFPO-25-12-3 | 25.0 | 0.5 | 2.8 | 12.0 | 21.0 | ≥ 35 |
| GFPO-31-12-3 | 31.0 | 0.5 | 2.8 | 12.0 | 27.0 | ≥ 35 |

GSSH Series

| | | | | | | |
|--------------|------|-----|-----|------|------|-----------|
| GSSH-33.5-12 | 33.5 | 1.2 | 6.6 | 12.0 | 27.0 | ≥ 35 |
| GSSH-33.5-20 | 33.5 | 1.2 | 6.6 | 20.0 | 27.0 | ≥ 50 |
| GSSH-40-12 | 40.0 | 1.2 | 6.6 | 12.0 | 34.8 | ≥ 35 |
| GSSH-45-12 | 45.2 | 1.2 | 6.6 | 12.0 | 40.0 | ≥ 35 |

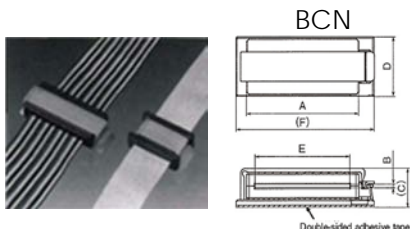
GFPH and GSSH Series



GFPO Series



FLAT CABLE CORES: Large 2-Piece Type



BCN Series

Adhesive mount with plastic holders

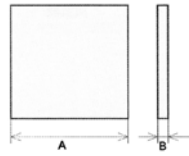
Unit: mm

| Part No. | A | B | (C) | D | (E) | (F) | Impedance $\Omega/100\text{MHz}$ (1 Turn) |
|----------|------|-----|------|----|------|------|--|
| BCN-26 | 45.0 | 2.0 | 19.6 | 30 | 34.0 | 59.2 | ≥ 125 |
| BCN-40 | 63.0 | 2.0 | 19.5 | 30 | 52.0 | 76.5 | ≥ 137 |
| BCN-50 | 76.5 | 2.0 | 19.5 | 30 | 64.5 | 90.7 | ≥ 142 |

FERRITE TILES and SHEET

SD Tiles – high performance, sintered ferrite tiles for CPU's high density

- Solid ferrite tiles for RF noise suppression
- Options for with adhesive (with “T”) and without adhesive (no “T”) available



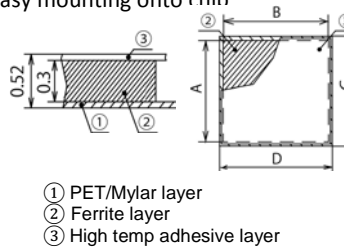
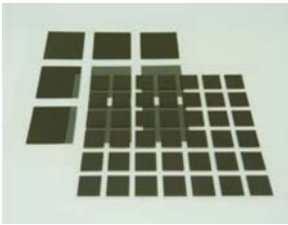
| PART NO. | A | B | Impedance* Ω/25MHz | Impedance* Ω/100MHz |
|---------------|----|-----|-----------------------|------------------------|
| SD-28-28-0.8 | 28 | 0.8 | ≥22 | ≥76 |
| SD-28-28-0.8T | 28 | 0.8 | ≥22 | ≥76 |
| SD-28-28-1.5 | 28 | 1.5 | ≥34 | ≥115 |
| SD-28-28-1.5T | 28 | 1.5 | ≥34 | ≥115 |

Unit: mm

*Test method for impedance test wire was sandwiched between two pieces of SD tiles in the center.

FFS Series – flexible ferrite tiles for low frequency

- 0.3mm thick, flexible ferrite
- Suppresses low frequency noise around 1MHz
- Adhesive on one side for easy mounting onto chin



- ① PET/Mylar layer
- ② Ferrite layer
- ③ High temp adhesive layer

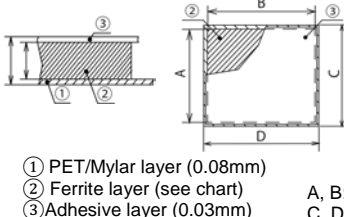
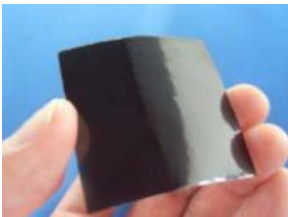
| Part Number | Ferrite Dimension | | PET/Mylar Dimension | |
|---------------|-------------------|----|---------------------|------|
| | A | B | C | D |
| FFS-0.3-1010T | 10 | 10 | 11.5 | 11.5 |
| FFS-0.3-1020T | 10 | 20 | 11.5 | 21.5 |
| FFS-0.3-1515T | 15 | 15 | 16.5 | 16.5 |
| FFS-0.3-2020T | 20 | 20 | 21.5 | 21.5 |
| FFS-0.3-2030T | 20 | 30 | 21.5 | 31.5 |
| FFS-0.3-2525T | 25 | 25 | 26.5 | 26.5 |
| FFS-0.3-3030T | 30 | 30 | 31.5 | 31.5 |
| FFS-0.3-5050T | 50 | 50 | 55 | 55 |

Unit: mm

Operating temperature: -40 ~ 105°C

FFSX Series – flexible ferrite sheet for RFID/NFC and Rezenze wireless charging

- Thin, flexible ferrite sheet with high μ' ; low loss at lower frequencies
- Effective for RFID/NFC-to-metal systems at 13.56MHz
- Increases field strength from Tx to Rx for wireless charging (6.78MHz)



- ① PET/Mylar layer (0.08mm)
- ② Ferrite layer (see chart)
- ③ Adhesive layer (0.03mm)

A, B: ferrite dimension
C, D: PET/Mylar dimension

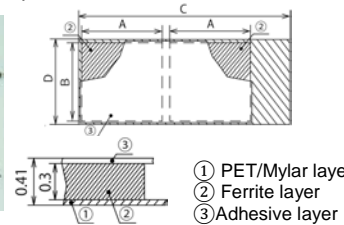
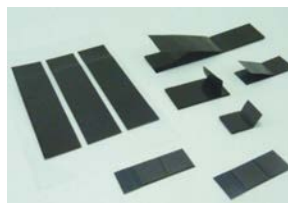
| Part Number | Ferrite thickness | Total thickness | Standard Ferrite Size | |
|-------------|-------------------|-----------------|-----------------------|-----------|
| | | | Tile | Sheet |
| FFSX-0.1 | 0.1 | 0.21 | 50 x 60 | 180 x 200 |
| FFSX-0.2 | 0.2 | 0.31 | 50 x 60 | 180 x 200 |
| FFSX-0.3 | 0.3 | 0.41 | 50 x 60 | 180 x 200 |

Unit: mm

Operating Temperature: -40°C~+85°C

FFPC Series – flexible ferrite cores

- 0.3mm thick, flexible ferrite cores that will not shatter if dropped
- Ideal for applications that cannot accept the weight and bulkiness of solid ferrite cores
- Adhesive on one side for easy installation



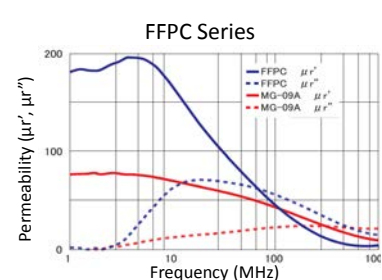
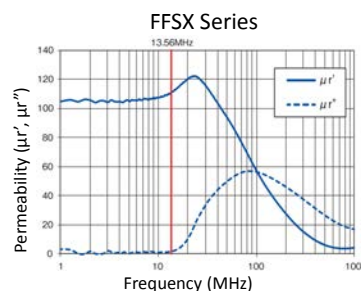
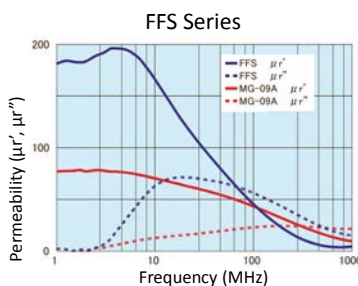
- ① PET/Mylar layer
- ② Ferrite layer
- ③ Adhesive layer

| Part Number | Ferrite Dimension | | PET/Mylar Dimension | |
|----------------|-------------------|----|---------------------|------|
| | A | B | C | D |
| FFPC-0.3-10-5 | 10 | 5 | 32.5 | 6.5 |
| FFPC-0.3-10-10 | 10 | 10 | 30 | 11 |
| FFPC-0.3-12-8 | 12 | 8 | 38.5 | 9.5 |
| FFPC-0.3-14-14 | 14 | 14 | 38 | 15 |
| FFPC-0.3-22-8 | 22 | 8 | 60.5 | 9.5 |
| FFPC-0.3-22-14 | 22 | 14 | 54 | 15 |
| FFPC-0.3-27-14 | 27 | 14 | 70.5 | 15.5 |
| FFPC-0.3-44-14 | 44 | 14 | 98 | 15 |

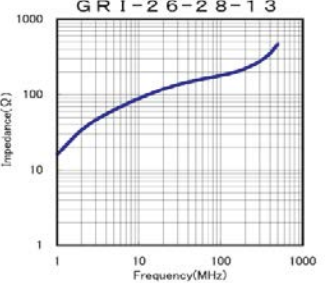
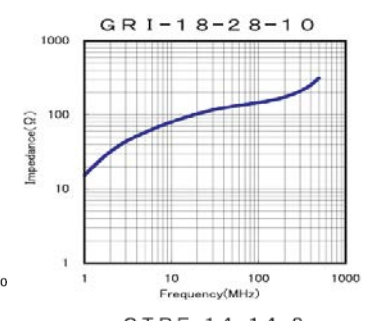
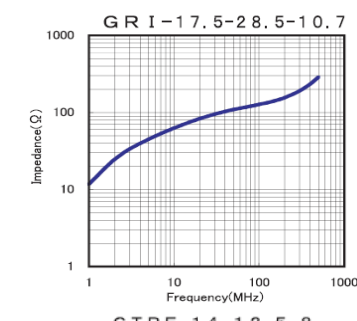
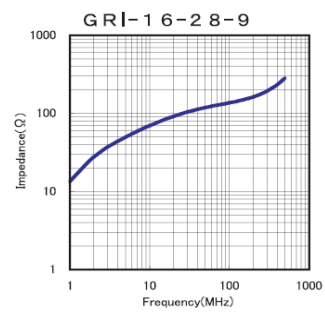
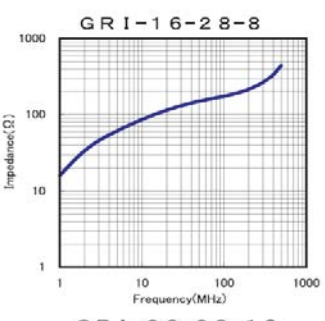
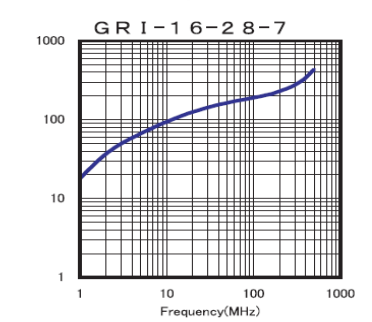
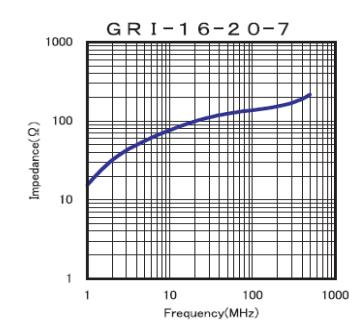
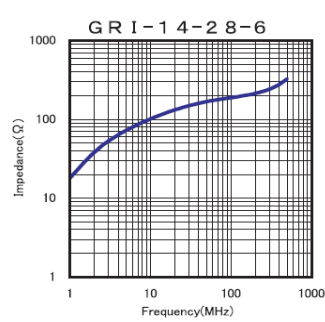
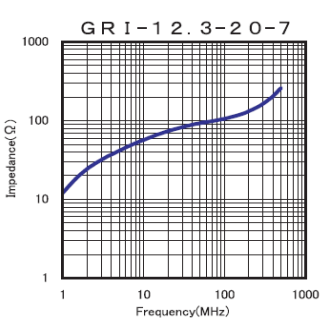
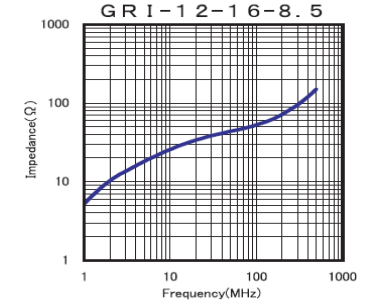
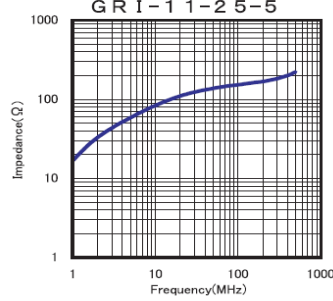
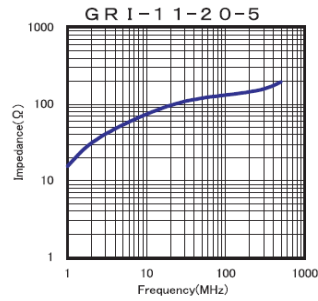
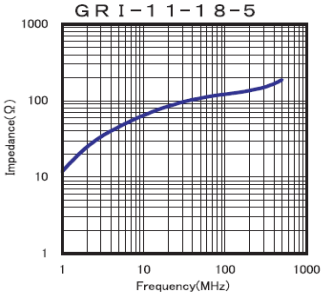
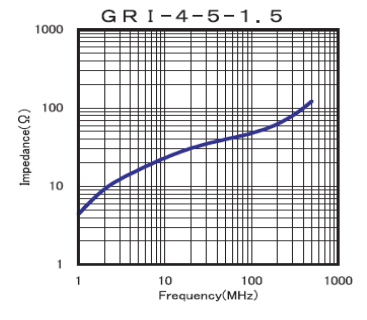
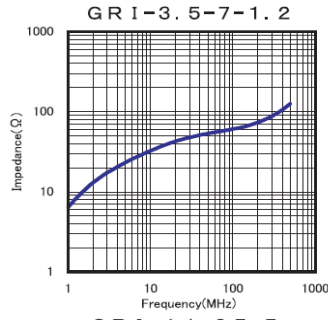
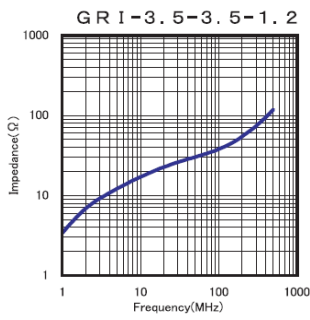
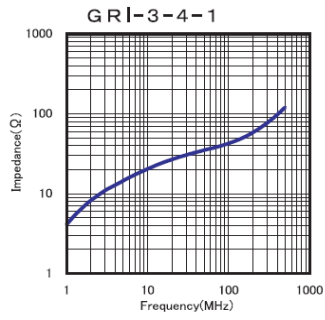
Unit: mm

Operating temperature: -40 ~ 85°C

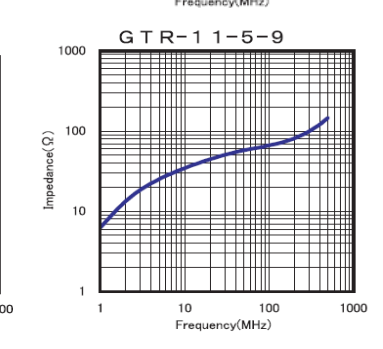
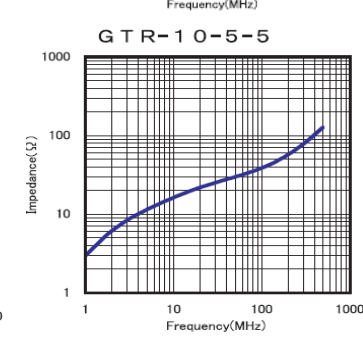
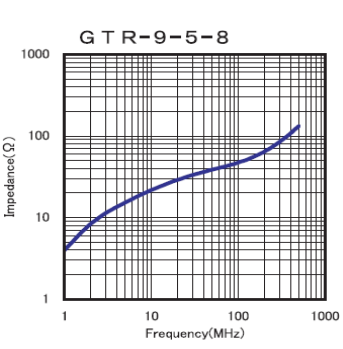
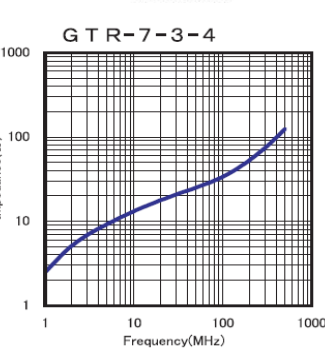
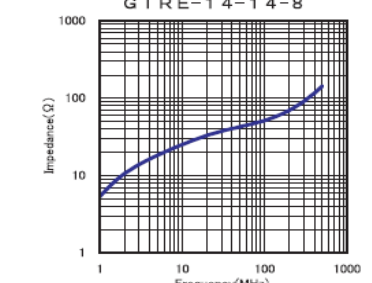
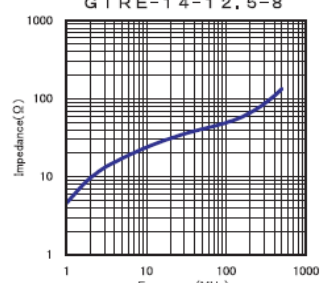
Ferrite Sheet Permeability Graphs

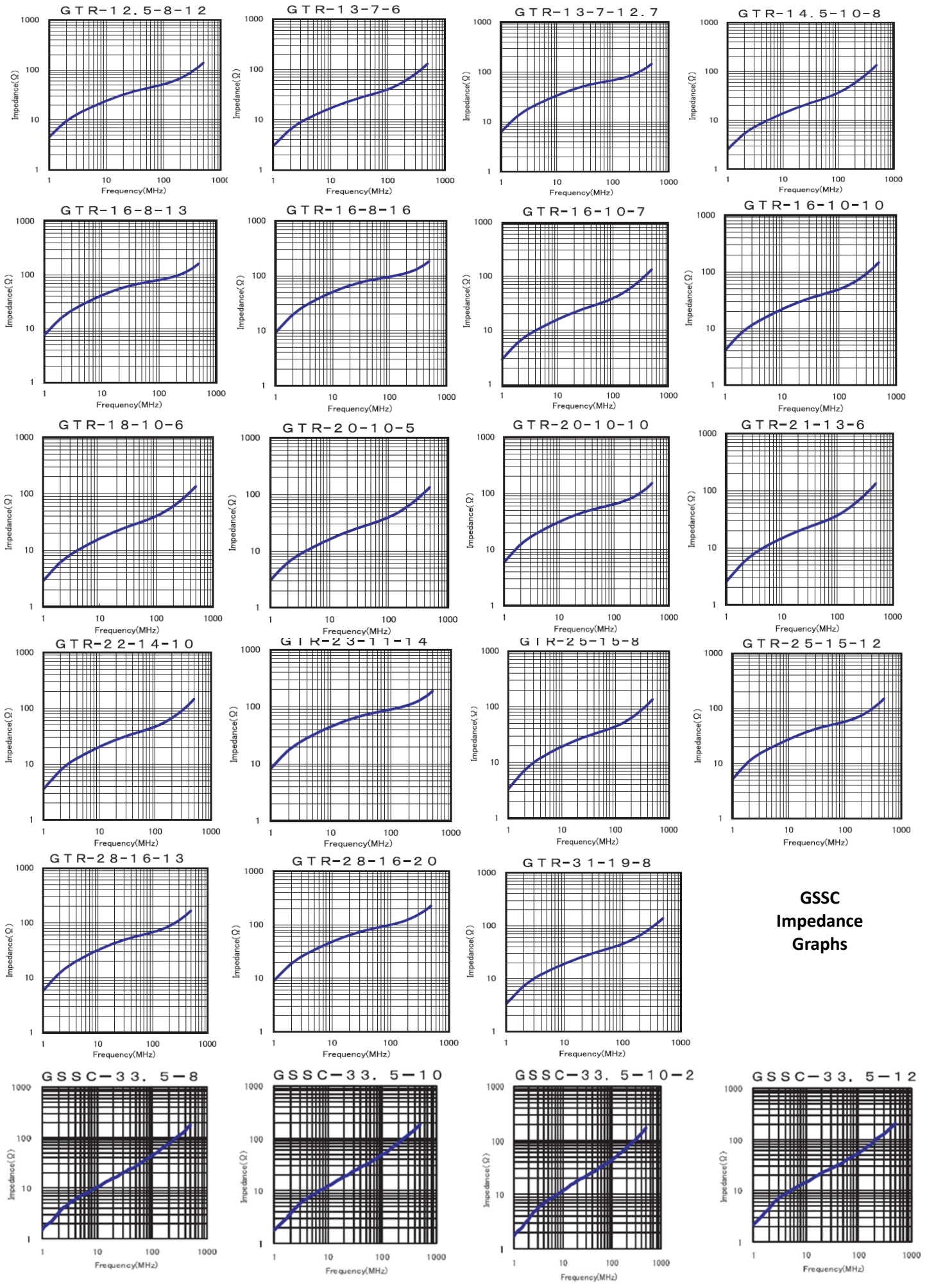


GRI Impedance Graphs

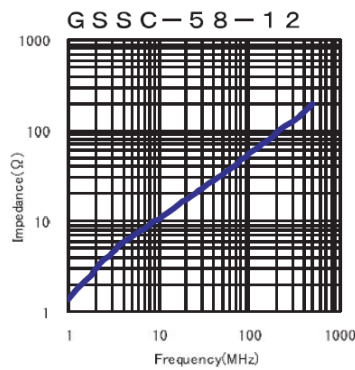
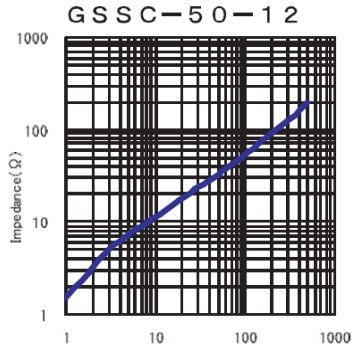
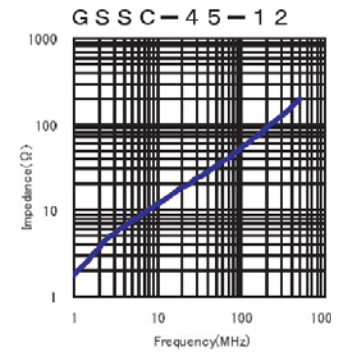
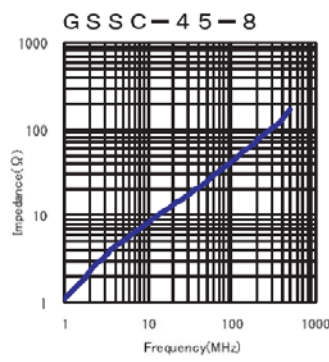
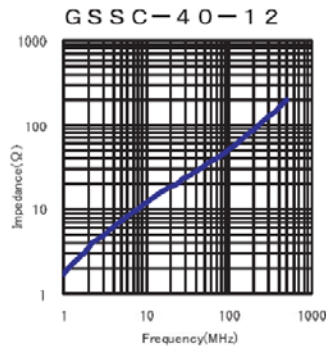
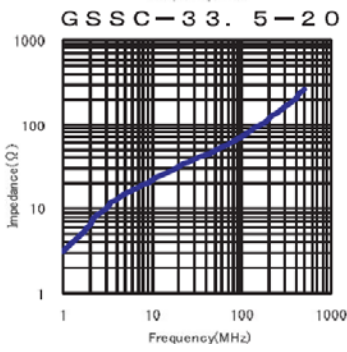


GTR Impedance Graphs

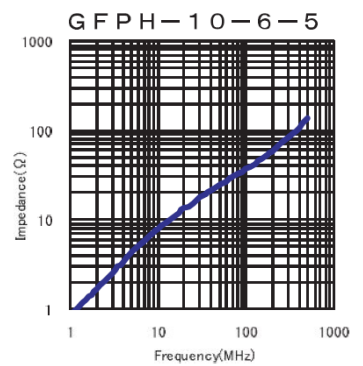




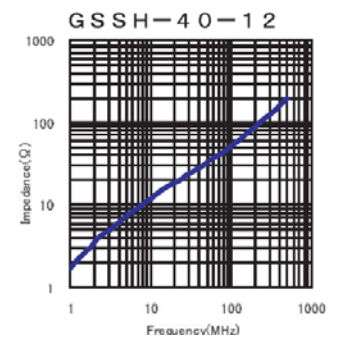
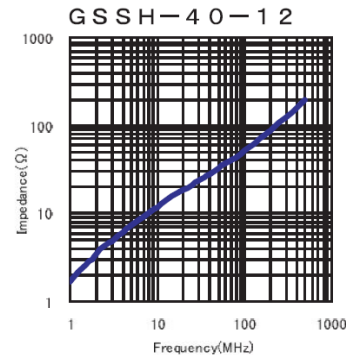
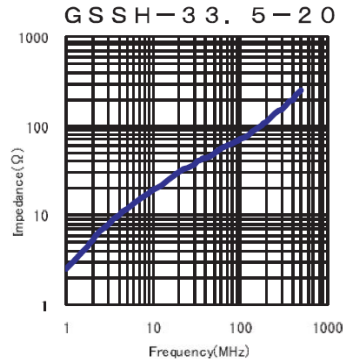
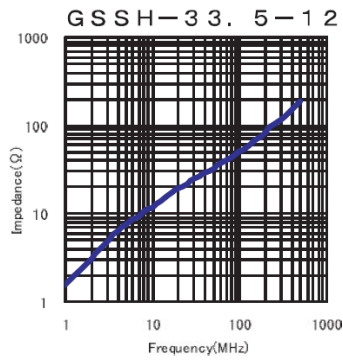
**GSSC
Impedance
Graphs**



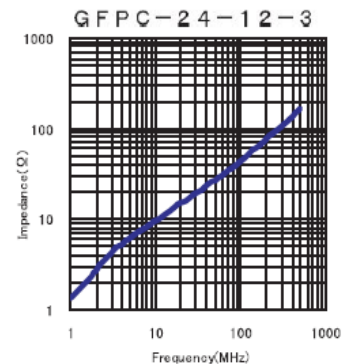
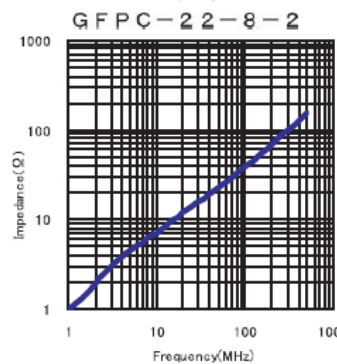
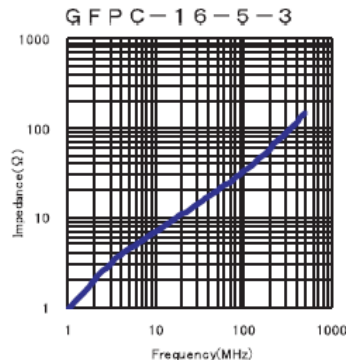
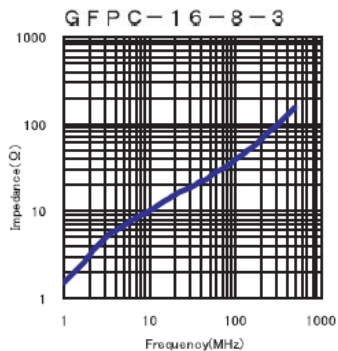
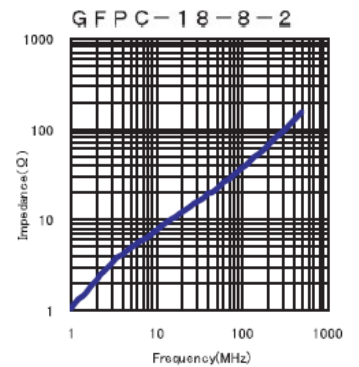
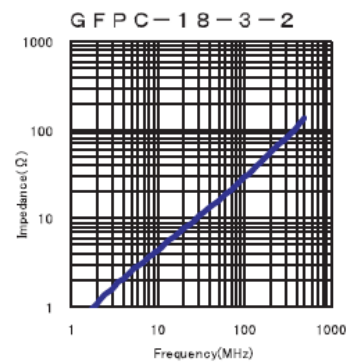
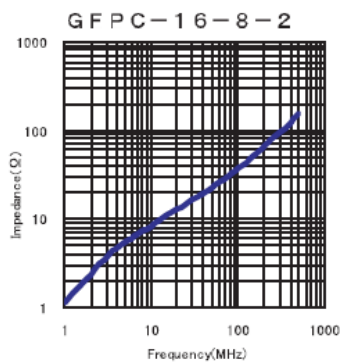
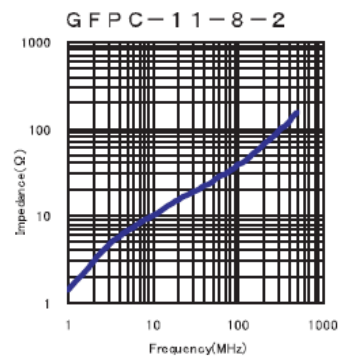
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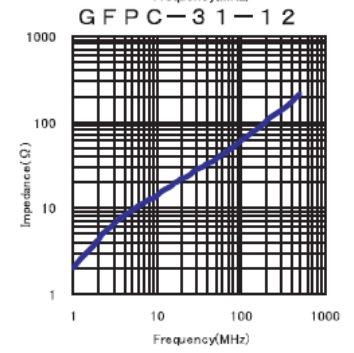
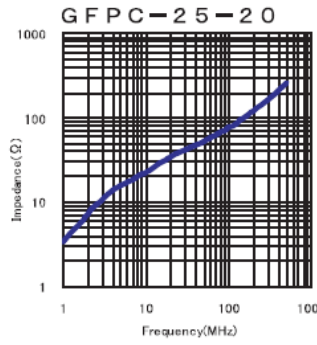
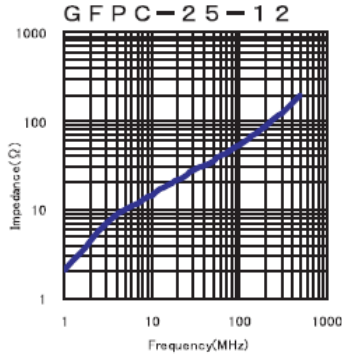
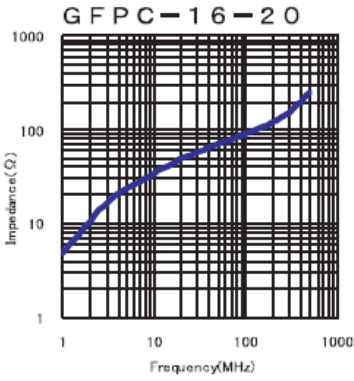
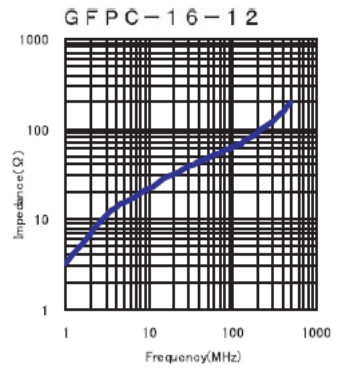
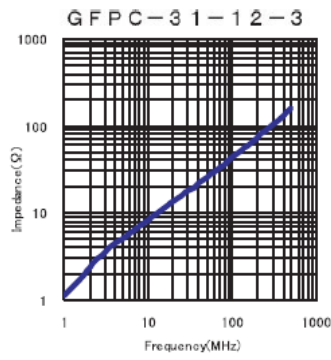
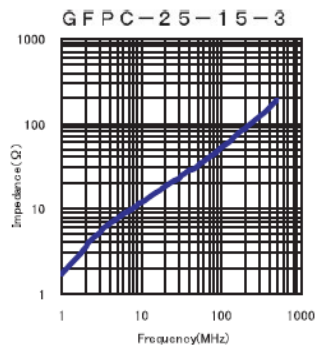
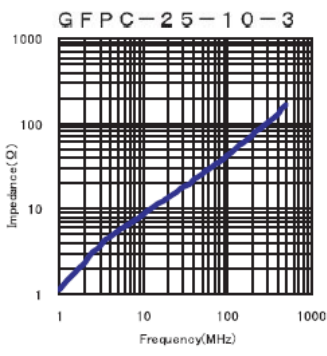


GSSH Impedance Graphs

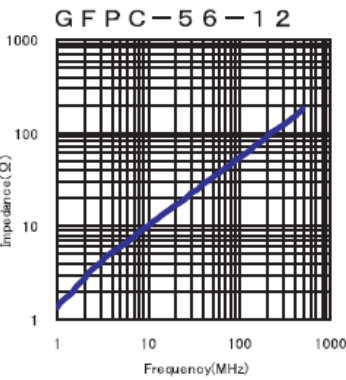
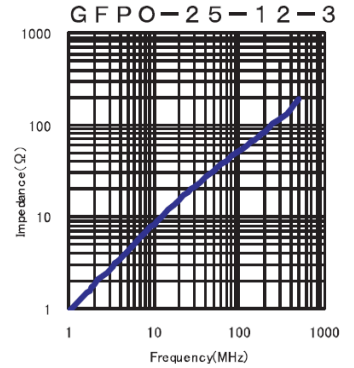
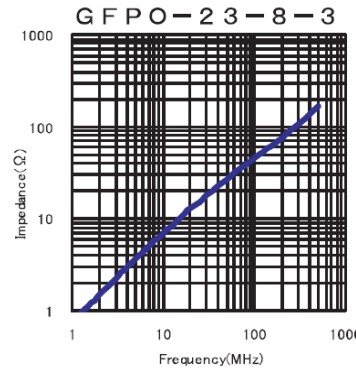
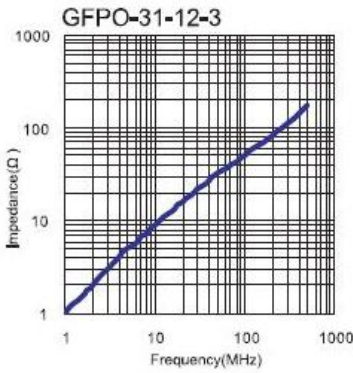
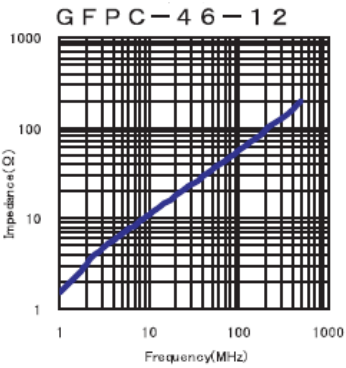


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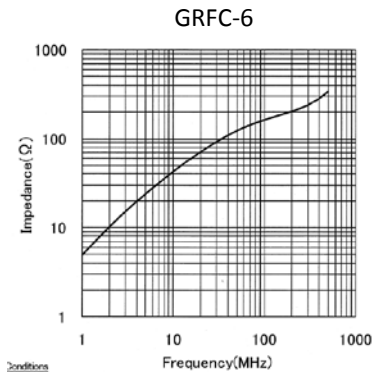
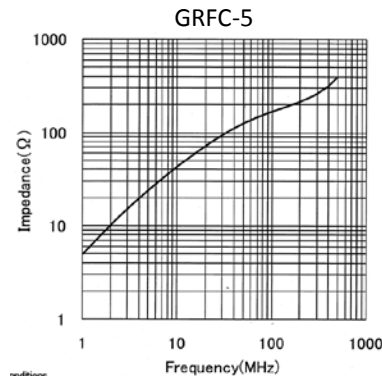




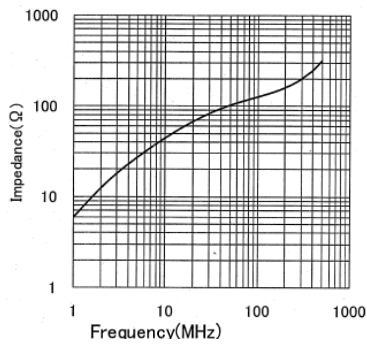
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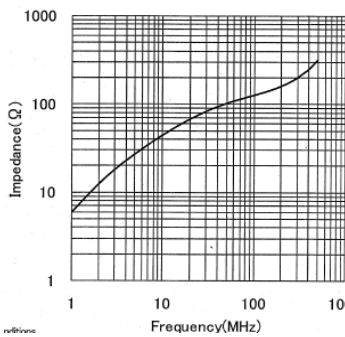
GRFC Impedance Graphs



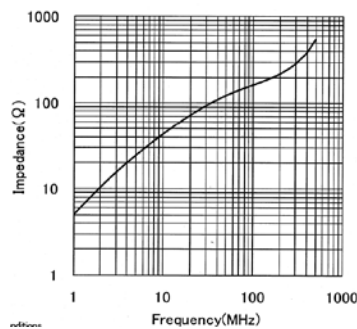
GRFC-8



GRFC-9



GRFC-13



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