

Single phase 250Vac 3 to 10A Power Entry Module EMC Filters

https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rpa

https://product.tdk.com/en/search/emc/emc/power-line/tec_data/nf_rpe

<https://www.emea.lambda.tdk.com/uk/products/r-series>

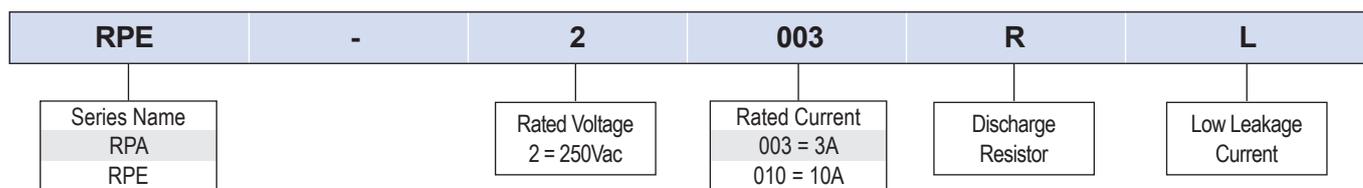


The RPA and RPE single-phase power entry module EMC filters are enclosed in a potted metal case and can be chassis mounted to accept an IEC320 line cord. They are rated for 250Vac with current ratings of 3A, 6A and 10A. The RPA series uses TDK's amorphous core material to provide both pulse and noise attenuation whereas the RPE uses the amorphous core for enhanced differential and common mode noise. Amorphous materials offer a higher resistance to saturation from high voltage pulses and greater long term reliability than semiconductor clamps. Connection to the filters are made via faston terminals #250 (t=0.8mm). Models with combinations of lower leakage current and an internal discharge resistor are also available.

| Features | Benefits |
|---|--|
| • Panel Mount with IEC320 Inlet | • Combines a Filter and Input Connector |
| • 3A to 10A Current Ratings | • Improved Noise Attenuation on Lower Current Models |
| • Low Leakage and/or Discharge Resistor Options | • System Flexibility |
| • Amorphous Core Technology | • Reduces High Voltage Pulse Core Saturation |
| • Safety Certified | • Global Use |

| Model Selector | | | | | | | | |
|----------------|-------------------|---------------------|--------------------|--------------------------------|----------------------------|-----------------------------------|---------------------------|--|
| Model | Rated Current (A) | HV Pulse Protection | Discharge Resistor | Leakage Current 250V/60Hz (mA) | Maximum DC Resistance (mΩ) | Attenuation frequency range (MHz) | | |
| | | | | | | Common mode at 25dB | Differential mode at 25dB | |
| RPA-2003 | 3 | Y | N | 0.5 | 150 | 2 to 30 | 3 to 30 | |
| RPA-2006 | 6 | Y | N | 0.5 | 100 | 3 to 30 | 5 to 30 | |
| RPA-2003R | 3 | Y | Y | 0.5 | 150 | 2 to 30 | 3 to 30 | |
| RPA-2006R | 6 | Y | Y | 0.5 | 100 | 3 to 30 | 5 to 30 | |
| Model | Rated Current (A) | HV Pulse Protection | Discharge Resistor | Leakage Current 250V/60Hz (mA) | Maximum DC Resistance (mΩ) | Attenuation frequency range (MHz) | | |
| | | | | | | Common mode at 10dB | Differential mode at 15dB | |
| RPA-2003L | 3 | Y | N | 0.01 | 150 | 0.4 to 10 | 1 to 30 | |
| RPA-2006L | 6 | Y | N | 0.01 | 100 | 0.5 to 8 | 2 to 30 | |
| RPA-2003RL | 3 | Y | Y | 0.01 | 150 | 0.4 to 10 | 1 to 30 | |
| RPA-2006RL | 6 | Y | Y | 0.01 | 100 | 0.5 to 8 | 2 to 30 | |
| Model | Rated Current (A) | HV Pulse Protection | Discharge Resistor | Leakage Current 250V/60Hz (mA) | Maximum DC Resistance (mΩ) | Attenuation frequency range (MHz) | | |
| | | | | | | Common mode at 25dB | Differential mode at 25dB | |
| RPE-2003 | 3 | N | N | 0.5 | 150 | 1 to 30 | 3 to 30 | |
| RPE-2006 | 6 | N | N | 0.5 | 100 | 2 to 30 | 5 to 30 | |
| RPE-2010 | 10 | N | N | 0.5 | 30 | 5 to 30 | 10 to 30 | |
| RPE-2003R | 3 | N | Y | 0.5 | 150 | 1 to 30 | 3 to 30 | |
| RPE-2006R | 6 | N | Y | 0.5 | 100 | 2 to 30 | 5 to 30 | |
| RPE-2010R | 10 | N | Y | 0.5 | 30 | 5 to 30 | 10 to 30 | |
| Model | Rated Current (A) | HV Pulse Protection | Discharge Resistor | Leakage Current 250V/60Hz (mA) | Maximum DC Resistance (mΩ) | Attenuation frequency range (MHz) | | |
| | | | | | | Common mode at 10dB | Differential mode at 15dB | |
| RPE-2003L | 3 | N | N | 0.01 | 150 | 0.3 to 5 | 1 to 30 | |
| RPE-2006L | 6 | N | N | 0.01 | 100 | 0.4 to 5 | 2 to 30 | |
| RPE-2010L | 10 | N | N | 0.01 | 30 | 1 to 5 | 3 to 30 | |
| RPE-2003RL | 3 | N | Y | 0.01 | 150 | 0.3 to 5 | 1 to 30 | |
| RPE-2006RL | 6 | N | Y | 0.01 | 100 | 0.4 to 5 | 2 to 30 | |
| RPE-2010RL | 10 | N | Y | 0.01 | 30 | 1 to 5 | 3 to 30 | |

Part Numbering Scheme



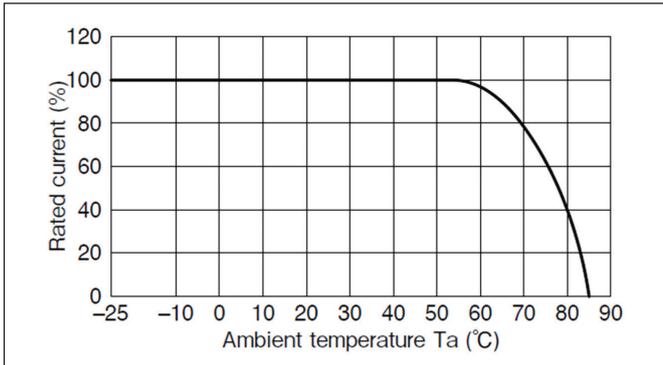
| Related Products | | | | | | | | | |
|---|--------------------|----------------------|---------------|---------------------|------------|----------------|-------|--------------------|------------|
| Type | Current Rating (A) | Series | Low Leakage | Faston on Terminals | Wire Leads | DIN Rail Mount | Fused | Discharge Resistor | Metal Case |
| Board mount line filter, HV Pulse | 0.5 - 6 | RSAG | | | | | | | |
| Board mount line filter | 0.5 - 6 | RSEG | | | | | | | |
| General purpose with faston terminals | 6 | RSEC | | | | | | | |
| General purpose | 0.5 - 6 | RSEL | Y | Y | Y | | | | Y |
| HV pulse protection | 0.5 - 6 | RSAL | Y | Y | Y | | | | |
| Power Entry Module with line filter | 3, 6, 10 | RPE | Y | | | | Y | Y | |
| Power Entry Module with line filter, HV Pulse | 3, 6, 10 | RPA | Y | | | | | Y | |
| Compact size with screw terminals | 6 - 30 | RSEV | | | | DIN-RSEV* | | | |
| Multipurpose | 3 - 300 | RSEN | Y (Up to 30A) | | | Y (Up to 30A) | | | |
| Multipurpose with HV pulse protection | 3 - 60 | RSAN | Y (Up to 30A) | | | Y (Up to 30A) | | | |
| High attenuation | 3 - 300 | RSHN | Y (Up to 30A) | | | Y (Up to 30A) | | | |
| High attenuation with pulse protection | 3 - 300 | RSMN | Y (Up to 30A) | | | Y (Up to 30A) | | | |
| Wide band, high attenuation | 6 - 30 | RSKN | | | | | | | |

* Separate mounting bracket
[Click here for TDK-Lambda three phase filters.](#)

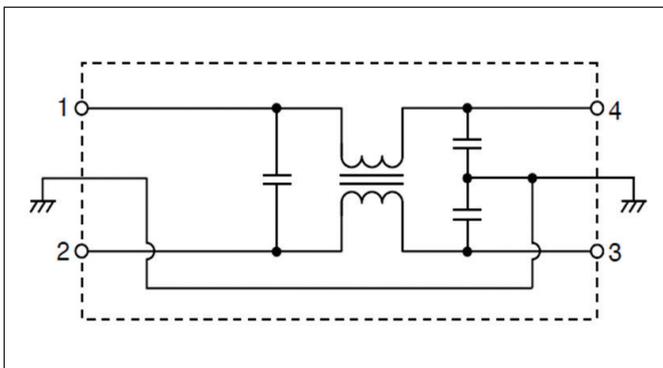
| Specification | | |
|-------------------------------------|---------|--|
| Model | | |
| Input | | |
| Rated Voltage | Vac/Vdc | 250 (Safety certified for AC input only) |
| Input Frequency | Hz | 47 - 63 |
| Leakage Current (250Vac, 60Hz) | mA | See model selector |
| Safety Certifications and Markings | - | UL1283, CSA C22.2 No.8 (cUL), EN60939-1/-2 (ENEC14), conforms to RoHS Directive |
| Environmental | | |
| Operating Temperature | °C | -25 to +85, derating above 55. See derating curve below |
| Storage Temperature | °C | -25 to +85 |
| Humidity (non condensing) | %RH | Operating: 15 - 85, Storage 5 - 85 |
| Cooling | - | Convection |
| Withstand Voltage | Vac | 1,500 input to earth |
| Isolation Resistance (For 1 minute) | MΩ | >100 at 500Vdc |
| Vibration | - | 10-55Hz Amplitude 1.5mm, Sweep for 1 min. X, Y and Z directions for 2 hours each |
| Other | | |
| Weight (Typ) | g | 40 |
| Size (LxWxH excluding flange) | mm | 52.9 x 27.9 x 20.1 |
| Size (LxWxH excluding flange) | Inches | 2.08 x 1.1 x 0.79 |
| Connectors | - | Faston #250 (t=0.8mm) |
| Case Material | - | Metal (potted) |
| MTBF - MIL-HDBK-217F NOTICE2 GF | Hours | |
| Warranty | Years | 5 |

Notes
 See website for detailed specifications, test methods and installation manual.
[RPA Technical files](#)
[RPE Technical files](#)

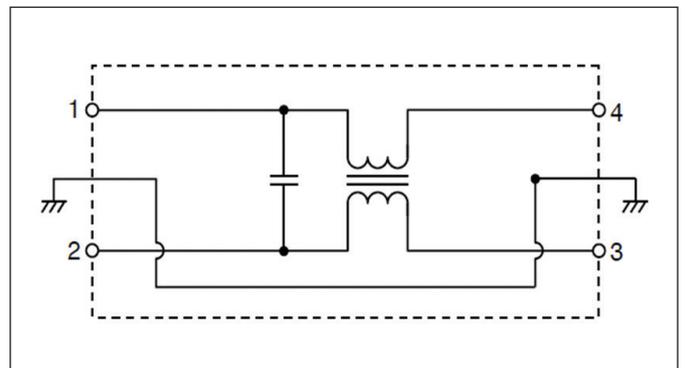
Derating Curve (All models)



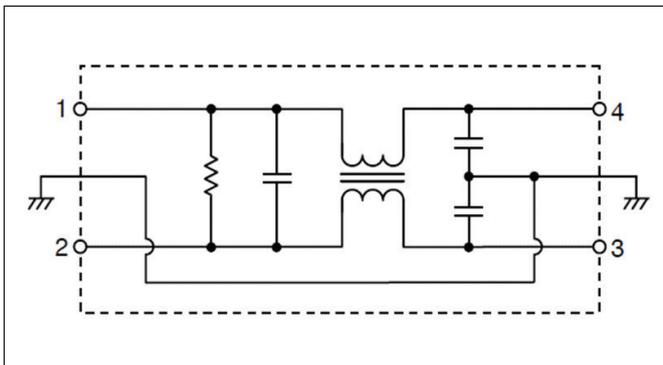
Schematic RPA/RPE-2xxx



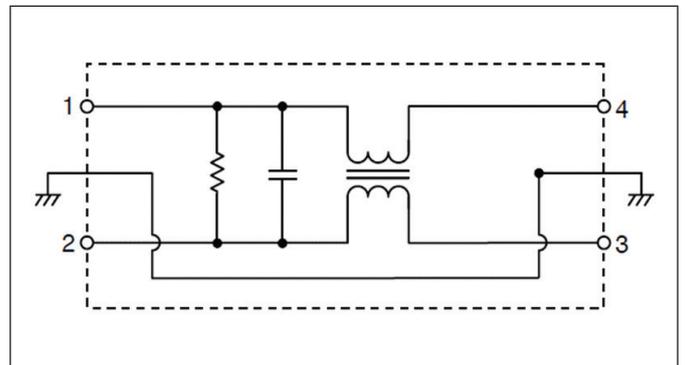
Schematic RPA/RPE-2xxxL



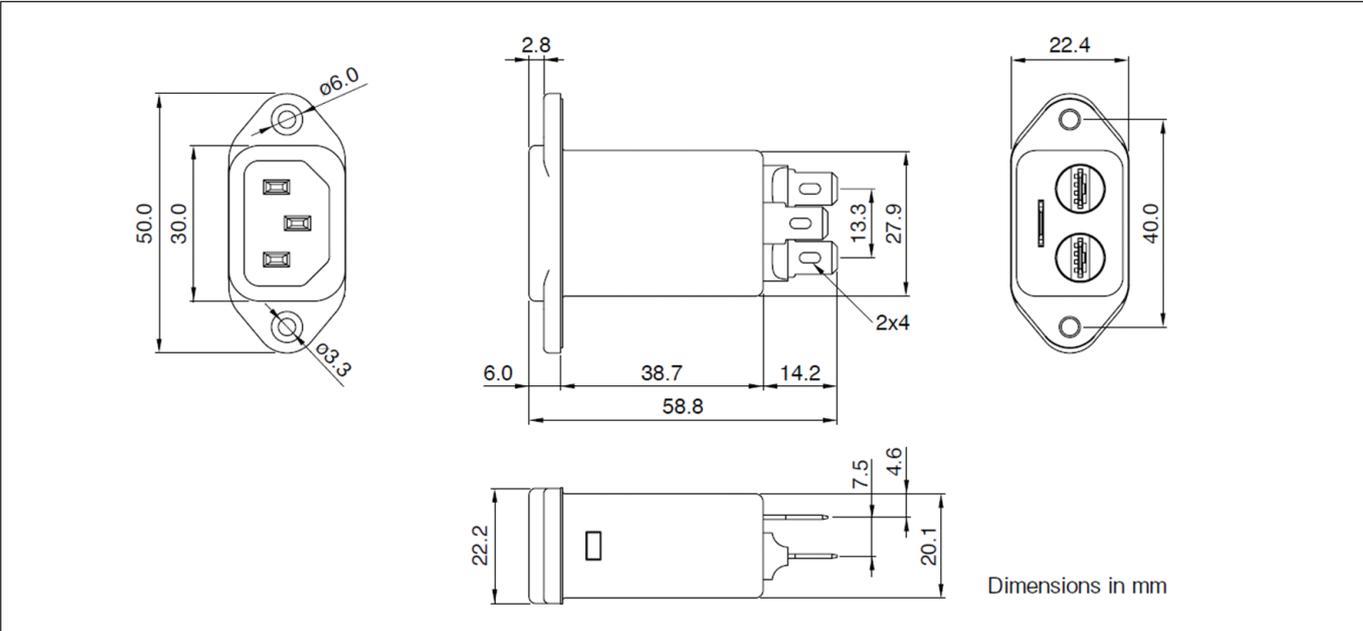
Schematic RPA/RPE-2xxxR



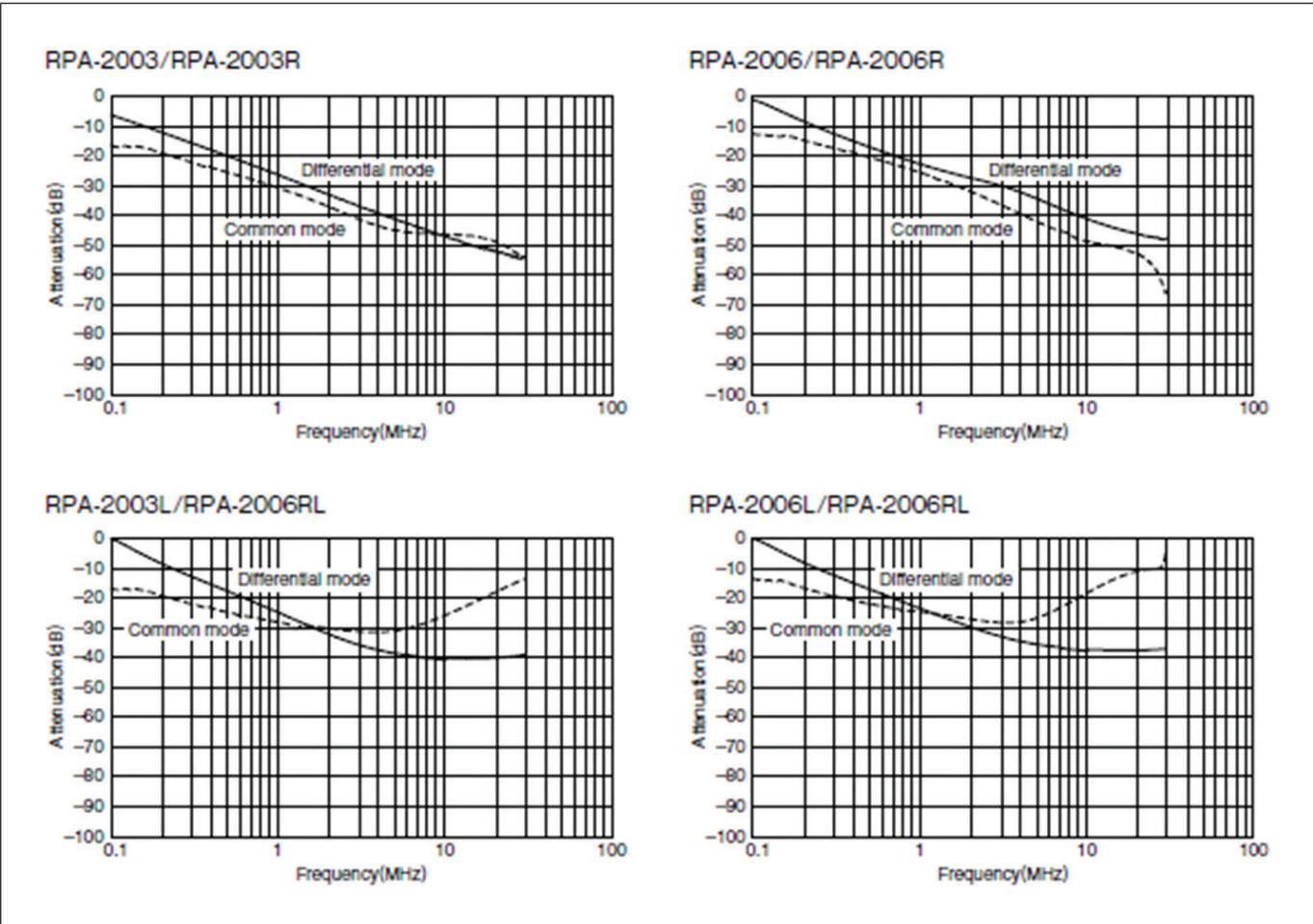
Schematic RPA/RPE-2xxxRL



Outline Drawing & Pin Out

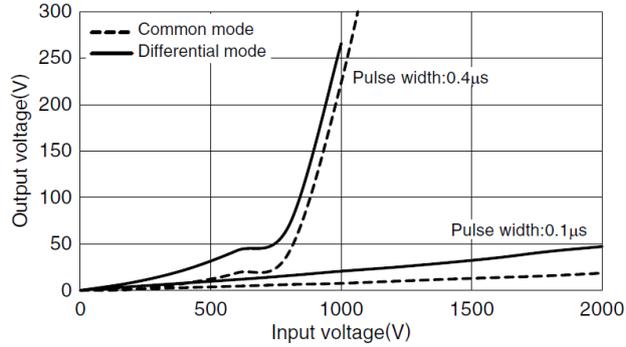


RPA Attenuation vs. Frequency

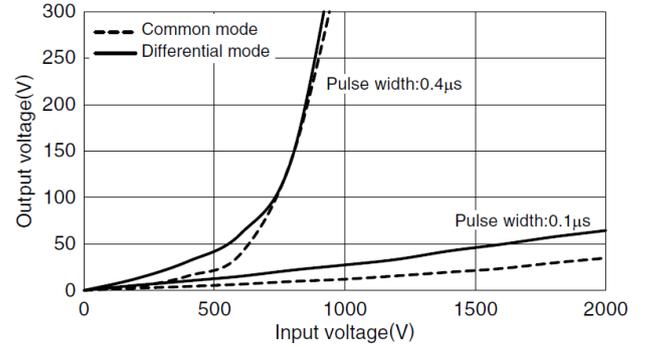


RPA Pulse Attenuation Characteristics

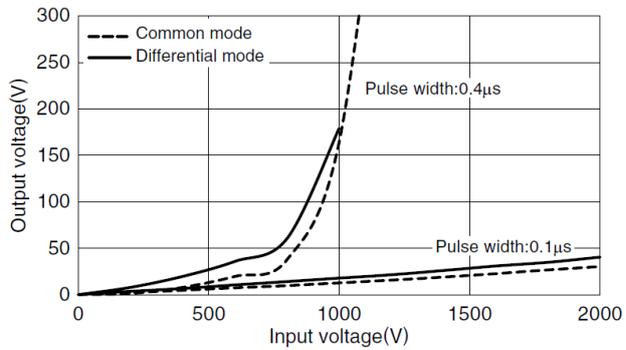
RPA-2003/RPA-2003R



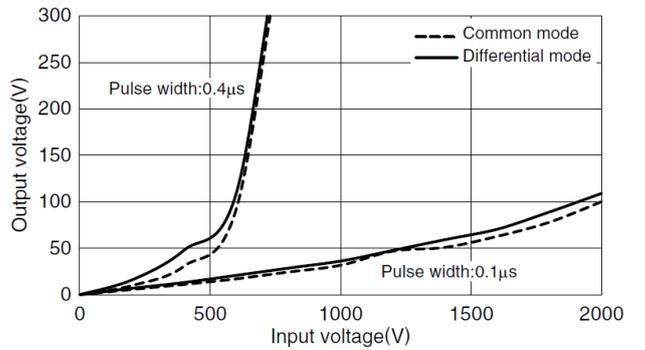
RPA-2006/RPA-2006R



RPA-2003L/RPA-2006RL

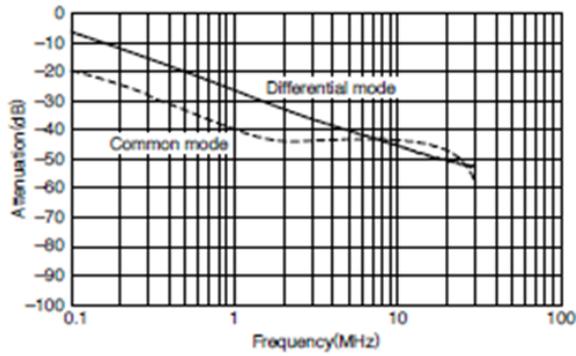


RPA-2006L/RPA-2006RL

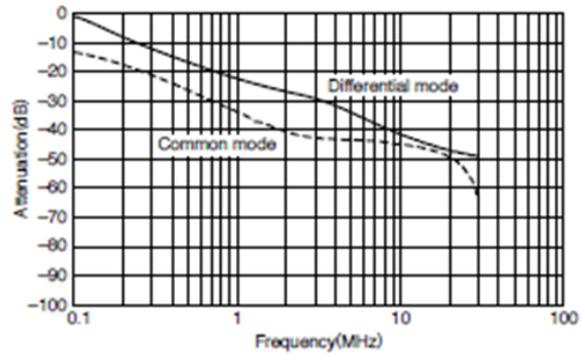


RPE Attenuation vs. Frequency

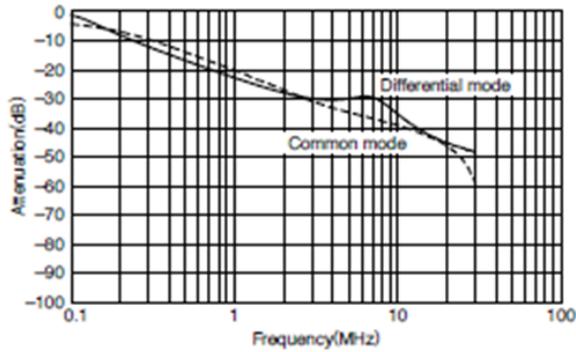
RPE-2003/RPE-2003R



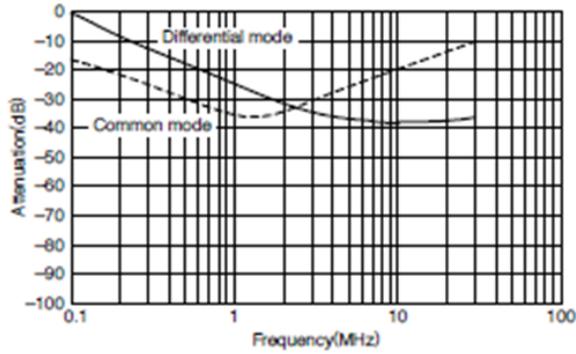
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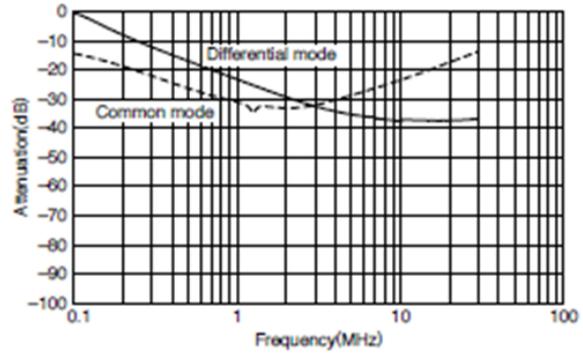
RPE-2010/RPE-2010R



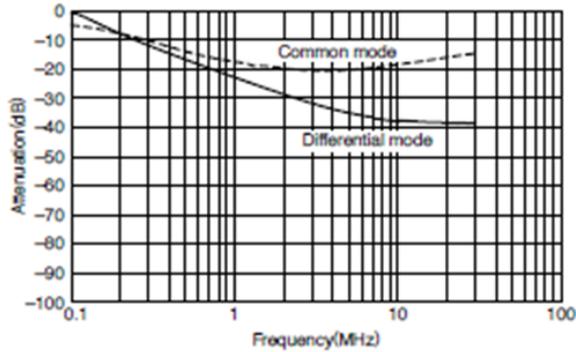
RPE-2003L/RPE-2003RL



RPE-2006L/RPE-2006RL



RPE-2010L/RPE-2010RL





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