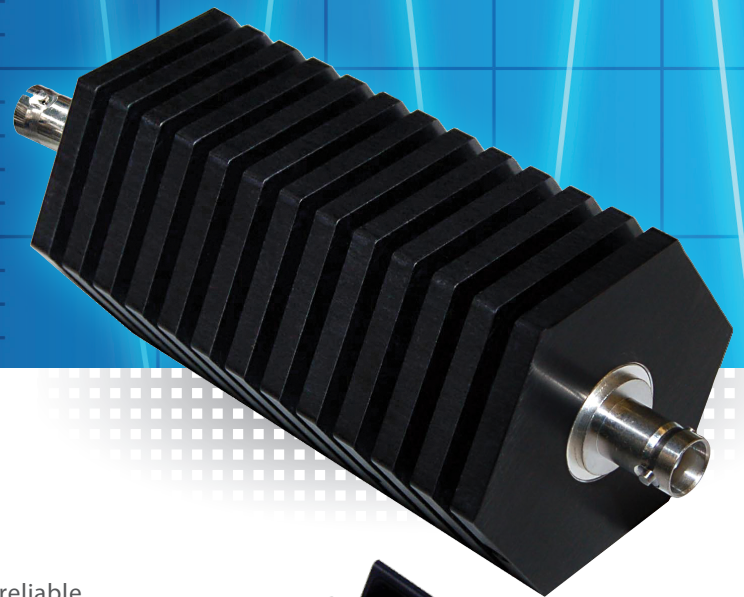


# CONVECTION COOLED Fully Shielded

## ATTENUATORS



### Superior Quality and Rugged Construction

Bird Convection Cooled RF Power Attenuators are a valuable and reliable accessory for reducing power levels, for isolating components under test, for harmonic signal analysis, and as comparison standards. They are world renowned for their high-quality, robust construction and conservative power ratings. These attenuators are fully shielded against production of extraneous radiation and the self-cooling design needs no cooling plate.

The broad line of available models offers full broadband operation and models to cover all LTE frequencies.

## Specifications

### SYSTEM

|                             |                        |
|-----------------------------|------------------------|
| Coolant Method              | Dry, Convection Cooled |
| Impedance                   | 50 Ohm                 |
| Operating Position          | Any                    |
| PIM                         | -110 dBc Min           |
| Standard Attenuation Values | 10, 20, 30, 40 dB      |
| AC Power                    | None                   |

### ENVIRONMENTAL

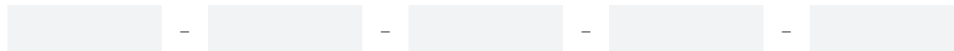
|                     |                                    |
|---------------------|------------------------------------|
| Ambient Temperature | -40 °C to 40 °C (-40 °F to 104 °F) |
| Humidity            | 95% max (non-condensing)           |

# CONVECTION COOLED ATTENUATORS

## PART NUMBER DEFINITION

**Example:** 2-A-MFB-10 = Model 2-A, 2 W, A-Type Attenuator with Male/Female BNC Connectors with an attenuation value of 10 dB.

Note: Not all combinations are valid. If assistance is needed consult the factory to define the model that is right for you.



| Power Rating (W)                         | Product Type                  | Connector Gender                                        | Connector*   | Attenuation Value (dB)                                                           |
|------------------------------------------|-------------------------------|---------------------------------------------------------|--------------|----------------------------------------------------------------------------------|
| <b>Denote required power rating in W</b> | <b>A, SA, WA</b> = Attenuator | <b>M/F</b> = Male/Female<br><b>F/F</b> = Female/ Female | <b>N</b> = N | <b>10</b> = 10 dB<br><b>20</b> = 20 dB<br><b>30</b> = 30 dB<br><b>40</b> = 40 dB |

\*Call for custom connector options not shown

| Product Type | Power Rating | Connector | VSWR & Frequency Range                                                                                        | Dimensions                                           | Weight           | Finish                  |
|--------------|--------------|-----------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------|------------------|-------------------------|
| 2-A          | 2 W          | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 4 GHz                                                             | 2.4 in x 0.8 in Dia.<br>(61 mm x 21 mm Dia.)         | 3.1 oz<br>88 g   | Tri-Alloy               |
| 2-6A         | 2 W          | N         | 1.25:1 from DC to 6 GHz                                                                                       | 1.8 in x 0.9 in Dia.<br>(46 mm x 23 mm Dia.)         | 2.5 oz<br>71 g   | Stainless Steel         |
| 2-18A        | 2 W          | N         | 1.15:1 from DC to 4 GHz<br>1.20:1 from 4 to 8 GHz<br>1.25:1 from 8 to 12.4 GHz<br>1.35:1 from 12.44 to 18 GHz | 1.8 in x 0.9 in Dia.<br>(46 mm x 23 mm Dia.)         | 2.5 oz<br>71 g   | Stainless Steel         |
| 3-A          | 3 W          | BNC       | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 4 GHz                                                             | 1.5 in x 0.6 in Dia.<br>(39 mm x 16 mm Dia.)         | 3.1 oz<br>88 g   | Nickel Plated           |
| 5-A          | 5 W          | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 4 GHz                                                             | 2.6 in x 0.8 in Dia.<br>(67 mm x 21 mm Dia.)         | 3.1 oz<br>88 g   | Tri-Alloy               |
| 5-6A         | 5 W          | N         | 1.25:1 from DC to 6 GHz                                                                                       | 2.4 in x 0.9 in Dia.<br>(61 mm x 23 mm Dia.)         | 3.0 oz<br>86 g   | Black Anodized Aluminum |
| 5-18A        | 5 W          | N         | 1.15:1 from DC to 4 GHz<br>1.25:1 from 4 to 12.4 GHz<br>1.35:1 from 12.4 to 18 GHz                            | 2.5 in x 0.9 in Dia.<br>(64 mm x 23 mm Dia.)         | 3.5 oz<br>100 g  | Stainless Steel         |
| 10-A         | 10 W         | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 4 GHz                                                             | 2.8 in x 2.3 in Dia.<br>(72 mm x 59 mm Dia.)         | 5.0 oz<br>142 g  | Black Anodized Aluminum |
| 10-6A        | 10 W         | N         | 1.20:1 from DC to 6 GHz<br>1.30:1 from 4 to 6 GHz                                                             | 2.5 in x 0.9 in Dia.<br>(64 mm x 23 mm Dia.)         | 3.5 oz<br>100 g  | Black Anodized Aluminum |
| 10-18A       | 10 W         | N         | 1.20:1 from DC to 4 GHz<br>1.30:1 from 4 to 12.4 GHz<br>1.45:1 from 12.4 to 18 GHz                            | 2.5 in x 0.9 in Dia.<br>(64 mm x 23 mm Dia.)         | 3.5 oz<br>100 g  | Black Anodized Aluminum |
| 25-A         | 25 W         | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 4 GHz                                                             | 5.3 in x 2.3 in Dia.<br>(135 mm x 59 mm Dia.)        | 9.0 oz<br>256 g  | Black Anodized Aluminum |
| 25-6A        | 25 W         | N         | 1.20:1 from 1 to 6 GHz                                                                                        | 4.2 in x 2.3 in x 2.3 in<br>(107 mm x 59 mm x 59 mm) | 13.5 oz<br>383 g | Black Anodized Aluminum |
| 25-18A       | 25 W         | N         | 1.20:1 from DC to 4 GHz<br>1.30:1 from 4 to 12.4 GHz<br>1.40:1 from 12.4 to 18 GHz                            | 4.2 in x 2.3 in x 2.3 in<br>(107 mm x 59 mm x 59 mm) | 13.5 oz<br>383 g | Black Anodized Aluminum |

CONVECTION COOLED

# ATTENUATORS

| Product Type | Power Rating | Connector | VSWR & Frequency Range                                                             | Dimensions                                               | Weight               | Finish                  |
|--------------|--------------|-----------|------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------|-------------------------|
| 50-A         | 50 W         | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 3.0 GHz                                | 6.4 in x 2.3 in Dia.<br>(163 mm x 59 mm Dia.)            | 1.0 lb<br>(454 g)    | Black Anodized Aluminum |
| 50-6A        | 50 W         | N         | 1.20:1 from DC to 6 GHz                                                            | 4.7 in x 3.0 in x 3.0 in<br>(120 mm x 77 mm x 77 mm)     | 1.7 lb<br>(772 g)    | Black Anodized Aluminum |
| 50-18A       | 50 W         | N         | 1.25:1 from DC to 6 GHz<br>1.35:1 from 6 to 12.4 GHz<br>1.45:1 from 12.4 to 18 GHz | 4.7 in x 3.0 in x 3.0 in<br>(120 mm x 77 mm x 77 mm)     | 1.7 lb<br>(772 g)    | Black Anodized Aluminum |
| 75-A         | 75 W         | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 3.0 GHz                                | 7.3 in x 2.3 in Dia.<br>(186 mm x 59 mm Dia.)            | 1.6 lb<br>(726 g)    | Black Anodized Aluminum |
| 100-A        | 100 W        | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 3.0 GHz                                | 7.3 in x 2.6 in x 6.4 in<br>(186 mm x 67 mm x 163 mm)    | 3.6 lb<br>(1.6 kg)   | Black Anodized Aluminum |
| 100-6A       | 100 W        | N         | 1.20:1 from DC to 2 GHz<br>1.35:1 from 2 to 4 GHz<br>1.40:1 from 4 to 6 GHz        | 6.4 in x 2.7 in x 3.8 in<br>(163 mm x 69 mm x 97 mm)     | 2.4 lb<br>(1.7 kg)   | Black Anodized Aluminum |
| 100-SA       | 100 W        | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 2.4 GHz                                | 8.4 in x 2.8 in x 2.8 in<br>(214 mm x 72 mm x 72 mm)     | 3.0 lb<br>(1.4 kg)   | Black Anodized Aluminum |
| 150-A        | 150 W        | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 3.0 GHz                                | 6.7 in x 2.6 in x 11.9 in<br>(171 mm x 67 mm x 303 mm)   | 6.6 lb<br>(3.0 kg)   | Black Anodized Aluminum |
| 150-SA       | 150 W        | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 2.4 GHz                                | 9.1 in x 4.0 in x 5.0 in<br>(232 mm x 102 mm x 127 mm)   | 5.5 lb<br>(2.5 kg)   | Black Anodized Aluminum |
| 150-WA       | 150 W        | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 2.4 GHz                                | 5.6 in x 5.4 in x 4.3 in<br>(143 mm x 138 mm x 110 mm)   | 2.5 lb<br>(1.2 kg)   | Black Anodized Aluminum |
| 300-A        | 300 W        | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 2.4 GHz                                | 7.3 in x 5.4 in x 10.9 in<br>(186 mm x 138 mm x 277 mm)  | 12.0 lb<br>(5.5 kg)  | Black Anodized Aluminum |
| 300-WA       | 300 W        | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 2.4 GHz                                | 9.0 in x 5.4 in x 4.8 in<br>(229 mm x 138 mm x 122 mm)   | 4.6 lb<br>(2.1 kg)   | Black Anodized Aluminum |
| 500-WA       | 500 W        | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 2.5 GHz                                | 12.4 in x 5.4 in x 4.8 in<br>(315 mm x 138 mm x 122 mm)  | 7.9 lb<br>(3.6 kg)   | Black Anodized Aluminum |
| 600-A        | 600 W        | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 2.4 GHz                                | 12.7 in x 9.4 in x 9.6 in<br>(323 mm x 239 mm x 244 mm)  | 21.5 lb<br>(9.8 kg)  | Black Anodized Aluminum |
| 1000-A       | 1000W        | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 2.4 GHz                                | 13.6 in x 12.8 in x 9.6 in<br>(346 mm x 326 mm x 244 mm) | 26.5 lb<br>(12.0 kg) | Black Anodized Aluminum |
| 1000-WA      | 1000 W       | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 2.4 GHz                                | 19.6 in x 10.6 in x 4.8 in<br>(498 mm x 270 mm x 122 mm) | 26.5 lb<br>(12.0 kg) | Black Anodized Aluminum |
| 1500-WA      | 1500 W       | N         | 1.10:1 from DC to 1 GHz<br>1.25:1 from 1 to 2.4 GHz                                | 20.4 in x 10.7 in x 5.9 in<br>(519 mm x 272 mm x 150 mm) | 30.0 lb<br>(13.6 kg) | Black Anodized Aluminum |

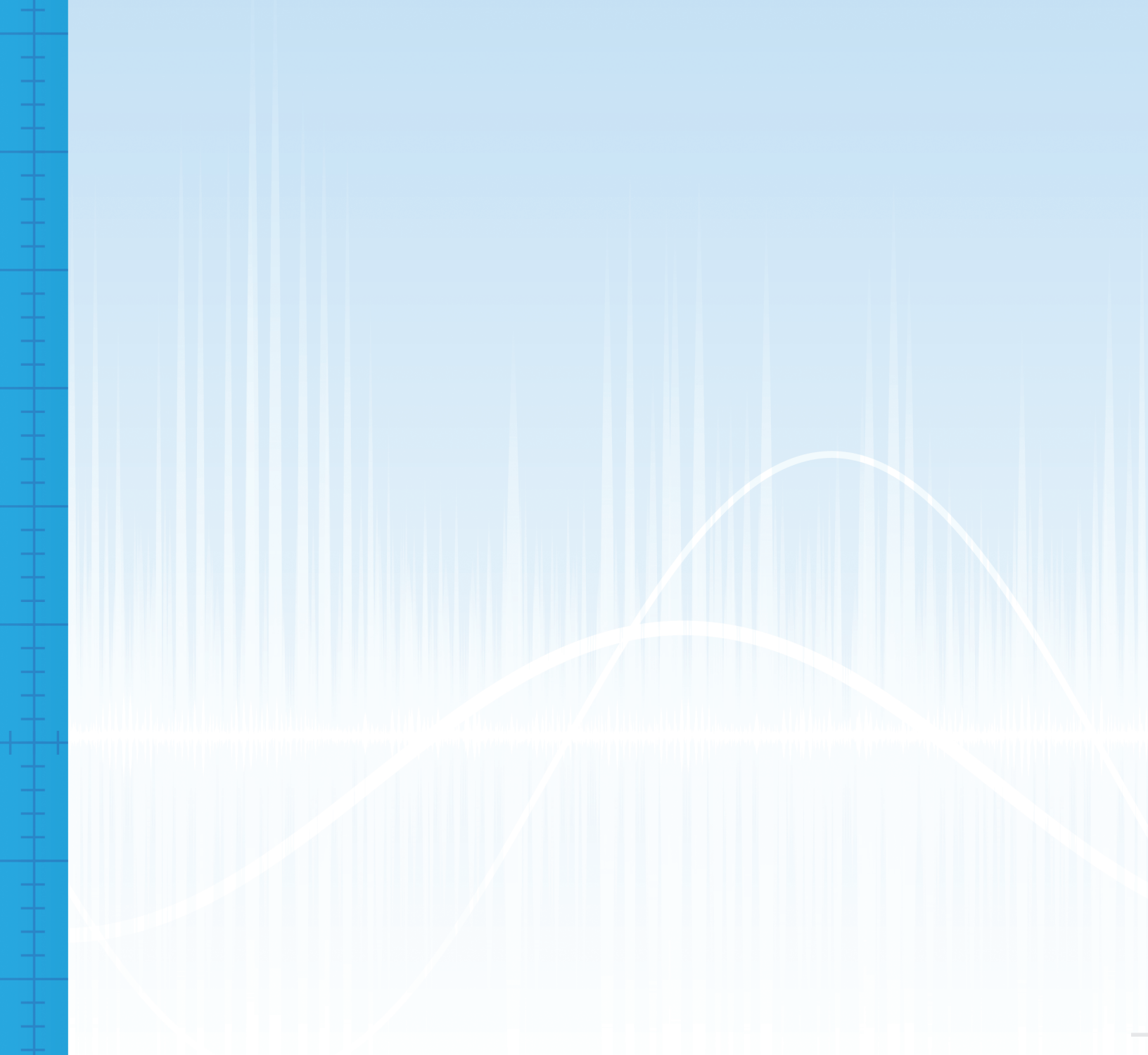
Note: Custom attenuators not listed on this datasheet may be available by special order and require a quote for availability. Please contact Bird for more information.

\*Attenuators 1000W and above are not available with attenuation values less than 10 dB

\*\*Specification change: All 1000W and 1500W attenuators with 10 dB values (e.g., 1000-A-MFN-10) now reflect updated performance requirements.

| Frequency (MHz)            | DC   | 500  | 1000  | 2000  | 2400  |
|----------------------------|------|------|-------|-------|-------|
| Attenuation (dB)           | -9.5 | -100 | -10.5 | -11.3 | -11.6 |
| Attenuation Accuracy ±(dB) | 0.4  | 0.4  | 0.4   | 0.6   | 0.6   |

Note: These updates reflect improved accuracy in high-frequency performance characterization and align with recent validation testing. Customers should reference these new values when designing for applications above 1 GHz.



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