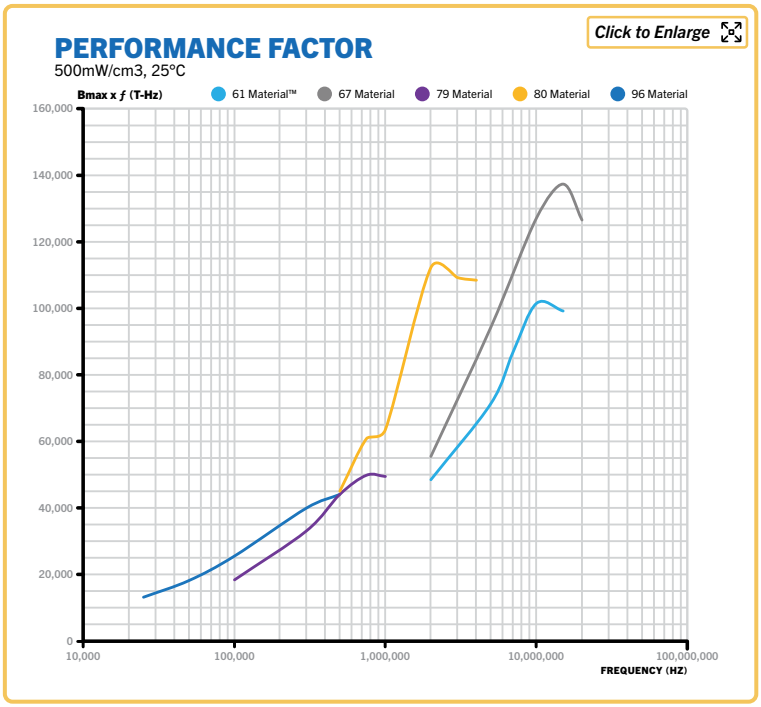
# HIGH FREQUENCY POWER MATERIALS






The need for High-Frequency Power Materials is growing rapidly with the adoption of new semiconductor technologies such as GaN and SiC, which push operating frequencies into the Megahertz range. As these switching frequencies increase, the losses associated with the magnetics incorporated into power supply designs can cause issues with efficiency and heat management. In addition, miniaturization has been a driving force in electronics design, and magnetics are typically one of the largest components in power supplies.

In response to these market demands, Fair-Rite® has developed a new line of High Frequency Power Magnetics as we continue to be **Your Signal Solution®**. We now offer materials that can operate up to 25 MHz with minimal power loss and temperature dependence.

The Fair-Rite® **79 Material** product line continues to expand and include new geometries for power supply designs. With operating frequencies up to **1 MHz**, this material is optimized for minimal losses at elevated temperatures.

Fair-Rite® **80 Material** Manganese-Zinc ferrite has been tuned to operate in SiC and GaN switching power supplies with a stable temperature response for designs up to **5 MHz**.

Our **67 Material** has superior performance up to **25 MHz**. With low-losses and good temperature stability, this material has found a new purpose in switching power supplies above 5 MHz. This material is highlighted in our HF Mini Power Kit, which allows you to test a variety of toroids or EQ cores in your design.

**61 Material** can be great alternative to 67 material in applications where higher permeability is valued over lower losses. This can lead to a high performance overall component in some applications by limiting losses in the winding and shifting them to the core material.

For more information on Fair-Rite® Power components, please visit our web site at **www.fair-rite.com**. For more specific questions use the **Ask the Advisor** section.

| MATERIAL PROPERTIES | 61 MATERIAL | 79 MATERIAL | 80 MATERIAL | 67 MATERIAL |
|---|---|---|---|---|
| MATERIAL TYPE | NiZn | MnZn | MnZn | NiZn |
| INITIAL PERMEABILITY | 125 | 1400 | 600 | 40 |
| CURIE TEMPERATURE | >300°C | > 225°C | > 280°C | > 425°C |
| OPTIMAL FREQUENCY RANGE | 5-15 MHz | 300 kHz -1 MHz | 1-4 MHz | 5-15 MHz |

## High Frequency Power Kits

**High Frequency Toroid Kit**
0199000039

**HF Mini Power Kit (For 67 Material)**
0199000044

**HF Mini Power Kit (For 79 Material)**
0199000047

**HF Mini Power Kit (For 80 Material)**
0199000048

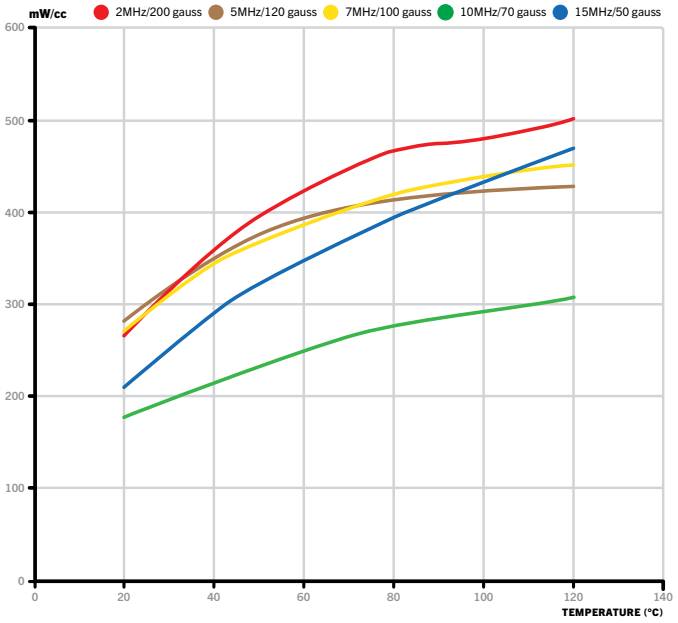

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# HIGH FREQUENCY POWER MATERIALS

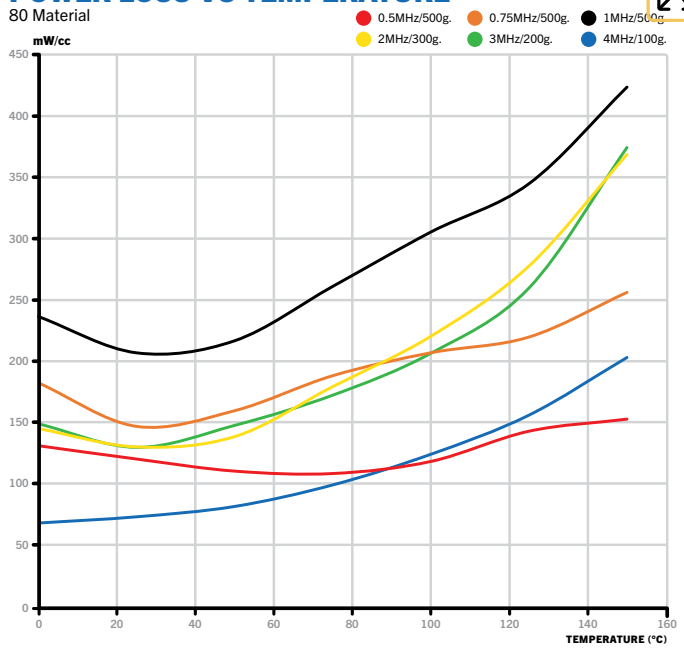
## POWER LOSS VS TEMPERATURE

61 Material™



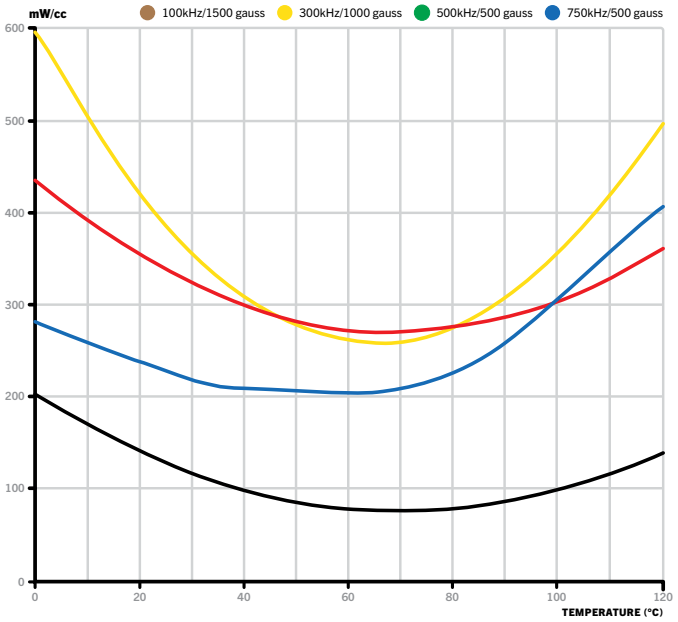

## POWER LOSS VS TEMPERATURE

80 Material



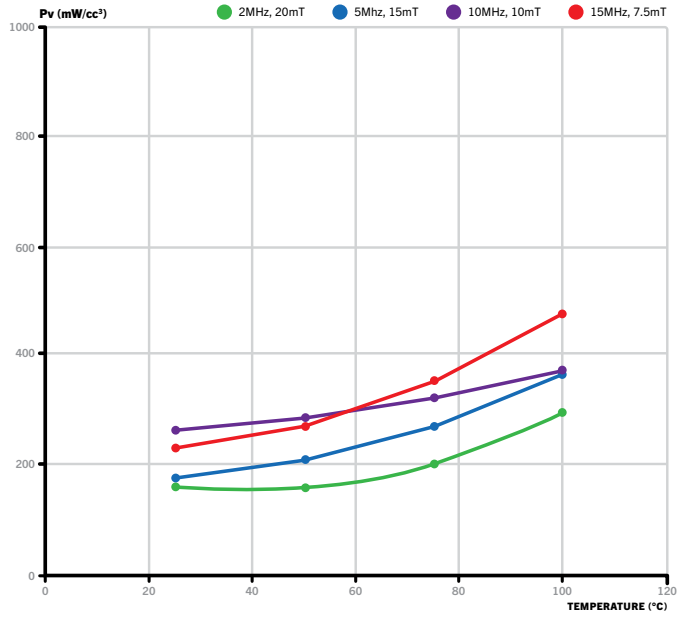

## POWER LOSS VS TEMPERATURE

79 Material




## POWER LOSS DENSITY VS TEMPERATURE

67 Material




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R05 06/19/2025
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