



Author: Paul Deebel
Tel: +1 (610) 407 4891
E-mail: paul.deebel@vishay.com

DSMZ Ultra-High-Precision Z-Foil Surface-Mount Voltage Divider

The Key Benefits:

- Provides improved stability
 - TCR of ± 0.05 ppm/ $^{\circ}\text{C}$ from 0°C to $+60^{\circ}\text{C}$ and ± 0.2 ppm/ $^{\circ}\text{C}$ from -55°C to $+125^{\circ}\text{C}$
 - PCR tracking (“ ΔR due to self heating”) of 5 ppm at rated power
 - Load-life stability of $\pm 0.005\%$ for 2000 hours
 - Tolerance match of 0.01 %
- Offers a wide variety of resistance ratios
- Fast rise time of 1.0 ns without ringing
- Features a non-inductive, non-hot-spot design
- Available in custom versions to meet non-standard technical and application requirements



The Key Applications:

- Instrumentation and differential amplifiers, bridge networks, radio arms in bridge circuits, medical and test equipment, and military and aerospace systems

The News:

Vishay's New DSMZ Ultra-High-Precision Z-Foil Surface-Mount Voltage Divider Combines Typical TCR Tracking of < 0.1 ppm/ $^{\circ}\text{C}$ (0°C to $+60^{\circ}\text{C}$), PCR Tracking of 5 ppm at Rated Power, Tolerance Match of 0.01 %, and Electrostatic Discharge (ESD) Rating Above 25,000 V

Vishay Intertechnology, Inc. (NYSE: VSH) announces the new DSMZ ultra-high-precision Z-Foil surface-mount voltage divider, which features TCR of ± 0.05 ppm/ $^{\circ}\text{C}$ from 0°C to $+60^{\circ}\text{C}$ and ± 0.2 ppm/ $^{\circ}\text{C}$ from -55°C to $+125^{\circ}\text{C}$, PCR tracking (“ ΔR due to self heating”) of 5 ppm at rated power, tolerance match of 0.01 %, and load life stability of $\pm 0.005\%$.



- Features a matched pair of Bulk Metal[®] Z-Foil resistors in a single, surface-mount package
- Z-Foil improves stability by an order of magnitude compared to any other resistor technology
- Offers a high degree of accuracy in fixed-resistor applications
- Provides better performance and more efficient use of board space than discrete resistors and matched pairs

Key Device Specifications:

- TCR of ± 0.05 ppm/ $^{\circ}\text{C}$ from 0°C to $+60^{\circ}\text{C}$ and ± 0.2 ppm/ $^{\circ}\text{C}$ from -55°C to $+125^{\circ}\text{C}$
- TCR tracking of < 0.1 ppm/ $^{\circ}\text{C}$ (0°C to $+60^{\circ}\text{C}$)
- PCR tracking of 5 ppm at rated power
- 0.01 % tolerance match
- 4.06-mm by 2.69-mm footprint with a 1.60-mm profile
- ± 0.005 % load-life stability for 2000 hours at 70°C
- 100- Ω to 10-k Ω resistance range per resistor
- 0.05-W power rating per resistor at 70°C
- < -40 -dB current noise
- ESD rating above 25,000 V
- 1.0-ns rise time

The Perspective:

The new DSMZ voltage divider is built on Vishay's breakthrough "Z-based" foil technology, which outperforms all other resistor technologies available today for applications that require ultra-high precision and stability. Greatly reducing the resistive component's sensitivity to ambient temperature variations (TCR) and applied power changes (PCR), Z-Foil improves stability by an order of magnitude compared to any other resistor technology, allowing designers to guarantee a high degree of accuracy in fixed-resistor applications.

Availability: Samples and production quantities of the DSMZ voltage divider are available now via Vishay's Fastlane Prototype Service, with lead times of two to five days for prototype samples and six weeks for production orders.

Contacts

Worldwide Technical Support:

foil@vishay.com

Sales Contacts:

AMERICAS

foilsales.usa@vishay.com

UK/HOLLAND/SCANDANAVIA

foilsales.eunorth@vishay.com

FRANCE/ITALY/SWITZERLAND/SPAIN/GREECE

foilsales.eusouth@vishay.com

GERMANY/CZECH REP./AUSTRIA

foilsales.eucentral@vishay.com

JAPAN/ASIA

foilsales.asia@vishay.com

ISRAEL

foilsales.israel@vishay.com