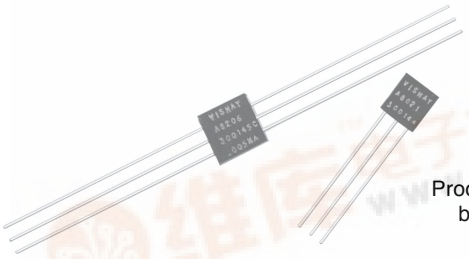
Bulk Metal® Foil Technology
Small Package, Ultimate Tracking Voltage Dividers



Product may not be to scale

FEATURES

- Temperature Coefficient of Resistance:

  (See Figures 1 and 2 in data sheet “7 Technical Reasons to Specify Bulk Metal® Foil Resistor Networks.”)
- TCR Tracking: to ± 0.5ppm/°C
- Ratio Stability: < ± 0.001% (10ppm) under load-life conditions
- Ratio Match Tolerance: to 0.005%
- Absolute Tolerance: to 0.005%

THROUGH HOLE

These voltage dividers are the first choice for accurate and stable division. Two resistors simultaneously etched into a piece of foil produce the maximum in TCR tracking without the need for curve matching of separate resistors. The size and very small footprint of the divider 300144 is also very important. This is the smallest foil divider available. A variety of ratios and impedance’s are already tooled and are shown in Table 1 on the following page. Small deviations from the ratios shown can be accommodated in the trim allowance already included in each side of the divider. Larger departures from the ratios shown may require new artwork.

The 300145 is a pair of 300144 elements back to back in a single molded package. Although performance between dividers is not quite as good as within each divider, it is the most accurate and stable full bridge or differential gain setting device made.

TABLE 1 - ORDERING INFORMATION - 300144

MODEL NUMBER	RESISTANCE VALUE*	ABSOLUTE TOLERANCE	RATIO MATCH TOLERANCE	TCR TRACKING
300144	R1 = 10KΩ	± 0.05%	± 0.01%	± 0.5 ppm/°C
	R2 = 10KΩ	± 0.05%	± 0.01%	± 0.5 ppm/°C

*Specify the resistance value for each resistor — even if all values are the same.

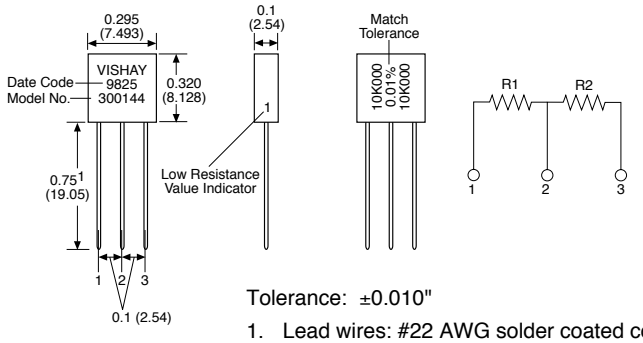
TABLE 2 - ORDERING INFORMATION - 300145

MODEL NUMBER	RESISTANCE VALUE*	ABSOLUTE TOLERANCE	RATIO MATCH TOLERANCE	TCR TRACKING
300145	R1 = 5KΩ	± 0.01% ABS	± 0.005% MA	± 1ppm/°C
	R2 = 10KΩ	± 0.01% ABS	± 0.005% MA	± 1ppm/°C
	R3 = 5KΩ	± 0.01% ABS	± 0.005% MA	± 1ppm/°C
	R4 = 10KΩ	± 0.01% ABS	± 0.005% MA	± 1ppm/°C

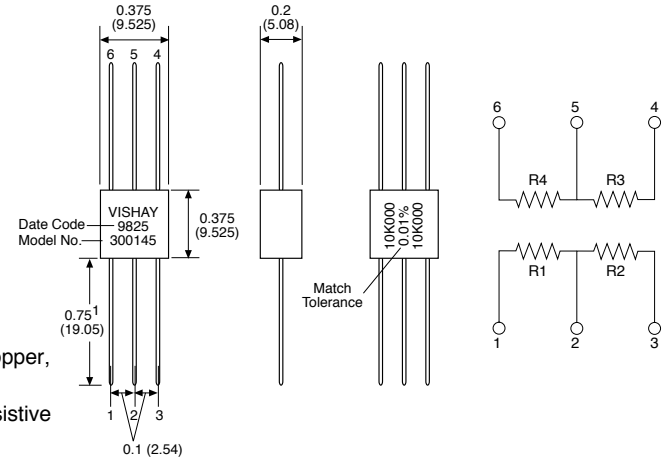
*Specify the resistance value for each resistor — even if all values are the same.

FIGURE 1 - STANDARD PRINTING AND DIMENSIONS in inches (millimeters)

Model 300144 and Schematic[2]



Model 300145 and Schematic[2]



Tolerance: ±0.010"

1. Lead wires: #22 AWG solder coated copper, 0.75" minimum length.
2. Each resistor contains 1 chip of two resistive elements.

TABLE 3 - MODELS 300144 AND 300145 SPECIFICATIONS

VISHAY MODEL	RESISTANCE RATIO AVAILABLE[1] (Ω)	POWER RATING [2, 4]	STANDARD RESISTANCE TOLERANCE		TCR TRACKING AVAILABLE TO	SHELF LIFE STABILITY (ppm/yr)
			ABSOLUTE AVAILABLE TO	RATIO MATCH AVAILABLE TO		
300144 and 300145 [3]	100/12.3K 500/500 500/15K 800/800 1K/1K 1K/2K 1.5K/3K 2K/2K 2K/3K 2K/4K 2K/20K 2.7K/10K 3K/6K 5K/5K 5K/10K 5.5K/7.7K 6K/6K 6K/20K 10K/10K 10K/20K 15K/15K 20K/20K	0.2W @ +85°C (for the entire resistive element R1 + R2) divided proportionally between the two elements.	± 0.005%	± 0.005%	< ± 0.5ppm/°C For Like Values < ± 1.0ppm/°C Standard	25

1. For resistance ratios not shown, contact Vishay's Applications Engineering Department.
   The 300144 can be made available in any required ratio between the resistance values of 100 ohms and 20Kohms, such that R1 can be any value between 100 ohms and 20Kohms and R2 can also be any value between 100 ohms and 20Kohms. New art work is required.
2. Power is proportional to the divider ratio.
   Example: In a 300144 (1K/10K dual), the power rating would be 18 mW on the 1K and 182mW on the 10K, for a total of 200mW on R1 + R2.

$$P1 = \left(\frac{R1}{R1 + R2}\right)P \qquad P2 = \left(\frac{R2}{R1 + R2}\right)P$$

3. Any value from 100 ohms to 20Kohms inclusive is available with some derating of power. (See data sheet "VHD200 and VHD144.")
4. Maximum working voltage is 200 Volts.

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