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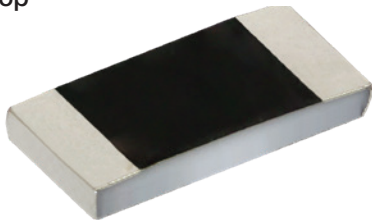
DID YOU KNOW? PHPA FOR AUTOMOTIVE APPLICATIONS

Precision High Power and Moisture-Resistant Thin Film Surface-Mount Chip Resistors for Automotive Applications

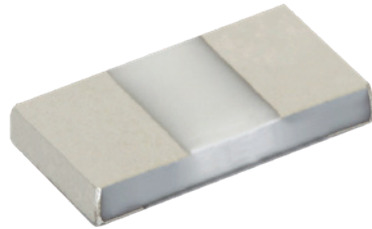
Most thin film chip resistors have a low power capability. To accommodate higher power applications – including those in the automotive sector, which require AEC-Q200 testing protocols to ensure automotive resistor standards are met – several chips must be used in series. Furthermore, in applications exposed to hazardous or unstable environmental conditions, resistors need to be fabricated with resistive materials that can handle the elements.

Vishay’s AEC-Q200 approved PHPA thin film series is fabricated with tantalum nitride (Ta₂N), which offers superior moisture resistance and high thermal stability within harsh or hazardous environmental conditions. In addition, the devices’ power capability far exceeds the industry standard. For example, while a typical thin film resistor in the 1206 case size is capable of 0.25 W, the PHPA series in the 1206 case size can handle up to 1 W, or 4x the power.

Top



Bottom



Case Size	Power Handling	
	Watts	
	Standard	PHPA
1206	0.25	1
2512	1	2.5

PHPA 1206 can handle the power of a standard 2512 size chip in 76 % less space

The PHPA series presents the following advantages for all new product designs:

- Superior moisture and sulfur resistance, and film stability, of tantalum nitride
- Reduced component count on the PCB by using one PHPA resistor instead of three to four resistors in series
- Increased design flexibility with higher power capability alongside the high precision of thin film technology
- Reduction in piece placement / assembly costs
- Improved board-level reliability due to enlarged backside terminations that reduce the thermal resistance between the top-side resistor layer and solder joint

More details on the performance and specifications of the PHPA series can be found in the Useful Links below. For further technical inquiries, please contact ThinFilm@Vishay.com.

Datasheet: www.vishay.com/ppg?60160

Why it Matters: www.vishay.com/doc?48751

Infographic: www.vishay.com/doc?48733

3D Models: www.vishay.com/doc?60161