



# DID YOU KNOW?

## HIGH POWER CHIP RESISTORS

The electronic components industry is seeing an increase in new surface-mount high power devices. This creates opportunities to reduce the overall size of electronics. Vishay Dale has three high power thick film chip resistor families (as defined below) to meet various customer needs.

**PHP** - Alumina-based high power thin film chip resistors

**RCP** - Aluminum nitride based thick film chip resistors

**PCAN** - Aluminum nitride based thin film chip resistors

### These components offer the following advantages:

1. Reduced component count on the PC board (use one high power SMT chip resistor instead of five or six standard chip resistors)
2. Increased design flexibility (a PC board layout with one or two components offers more flexibility than multiple components)
3. Reduced overall weight of the PC board and the overall size of the finished product
4. Reduced assembly (placement) costs
5. Improved reliability due to fewer solder joints

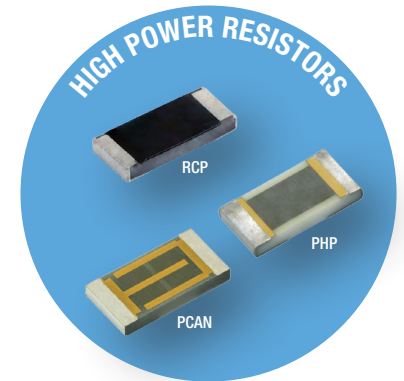
### Some highlights include:

1. Multiple case sizes
2. Good high frequency performance (RCP)
3. Tight tolerance and wide resistance range (PCAN, PHP)
4. Standard tin / lead and lead (pb)-free terminations for easy usage

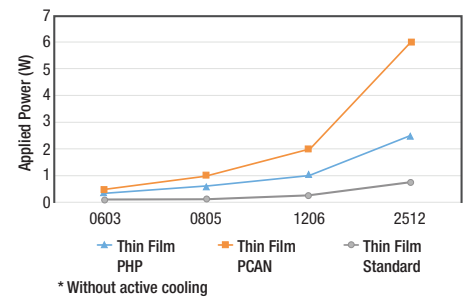
When using high power SMT chip resistors, it is important to consider and utilize various thermal management techniques to effectively manage the heat generated by these components. For more information on this topic, please refer to the published article: [“The Heat Is on: High Power Surface-Mount Resistors.”](#)

More details on the performance of these high power resistors can be found in the infographic [“High Power Resistors.”](#) These products are typically used in the following market segments:

- Telecommunications
- Industrial
- Military
- Automotive



PHP AND PCAN THIN FILM RESISTORS RATED POWER AT 70 °C



RCP (AlN) THICK FILM CHIP RESISTOR POWER RATING

