



DID YOU KNOW? WIDE TERMINAL THIN FILM CHIP RESISTORS

Today's industrial and automotive electronics require components with high power ratings, thermal robustness, and reliability, all in smaller and smaller case sizes.

For resistors, removing the heat created by power dissipation in the resistive film is critical. The majority of the heat is removed by conduction through the solder joint into the PCB and further to the ambient. Due to their much larger contact size, wide terminal thin film chip resistors offer advantages when compared to standard geometry parts of the same footprint. In addition, the wide terminal geometry reduces the distance between contacts, thereby reducing the internal thermal resistance and the stress during thermal cycling. The resulting performance benefits of wide terminal resistors are:

Superior Power Rating: The improved power dissipation of wide terminal chip resistors allows for higher power ratings compared to that of standard geometry components of the same footprint. Hence, with wide terminal resistors, the number of components required can be significantly reduced or a smaller footprint can be selected.

Extreme Thermocycling Robustness: Changes in temperature cause mechanical stress on the solder joint due to different thermal expansion of the resistor and the PCB. This cycling stress leads to a degradation, and finally cracking, of the solder joint. The shorter the resistor length between the solder joints is — such as in wide terminal chip resistors — the lower the thermocycling stress and the higher the thermocycling robustness.

Excellent Long-Term Stability: The improved heat removal from the resistive film also limits the temperature rise for a given power load. In combination with best-in-class thin film technology, the MCW series offers the best possible resistance stability over lifetime.

Wide terminal thin film chip resistors are the optimum choice for reliable electronics in industrial and automotive applications such as:

- Power measurement and control in professional lighting applications
- Inverters for electric and hybrid-electric vehicles
- Engine and gear box control units
- Braking and steering systems
- Energy management
- Power supplies

