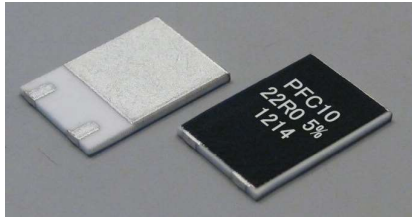


PFC Series

Thick Film Power SMD Resistors



- D-PAK Foot Pattern
- Very Low Profile
- Resistances from 0.1 Ohm to 51kOhms
- Power Rating to 25 Watts
- Resistance Tolerances to $\pm 1\%$
- TCR to $\pm 100\text{ppm}/^\circ\text{C}$
- Isolated Back Plate

SPECIFICATIONS

| Type | PFC10 | |
|----------------------------------|--|---|
| Power Rating with heatsink | 25W (2.5W on Simple Foot Print) | |
| Short Time Overload | 35 W | |
| Thermal Resistance Rthj-c | 3.6 K/W | |
| Resistance Range | 0.1 - 51K Ohms E24+ (includes 2.5, 4.0, 5.0, 8.0, and 16) | |
| Tolerances (others upon request) | 1% / 5% | |
| Temperature Coefficient | 100 ppm/K | |
| Operating Temperature | -55°C to 155°C | |
| Max Operating Voltage | $\sqrt{P * R}$ | |
| Capacitance | 1.44 pF | |
| Inductance | 15 nH | |
| Withstanding Voltage | 1500 VAC | |
| Insulation Resistance | Over 1,000 Megohm | |
| Resistor Material | Thick Film | |
| Moisture Sensitivity Level | MSL-1 | |
| Test Conditions | Results | |
| Load Life | $\pm 1\%$ | 90 min ON, 30 min OFF, 1000 hrs @ 25C |
| Humidity | $\pm 1\%$ | 90-95% RH, 0.1W, 1000 hrs @ 40C |
| Temperature Cycle | $\pm 0.25\%$ | -55C for 30 min, +155C for 30 min, 5 cycles |
| Solder Heat | $\pm 0.1\%$ | 350C $\pm 5\text{C}$ for 3 seconds |
| Lead Solderability | Over 95% of surface | 230 $\pm 5\text{C}$ for 3 seconds |
| Vibration | $\pm 0.25\%$ | IEC60068-2-6 |

Ordering Information

Part Description: Part Type - Resistance - Tolerance
PFC10 10 Ohms 1%

Note: PFC10 can operate 35W rating with back solder pad temperature of 25°C

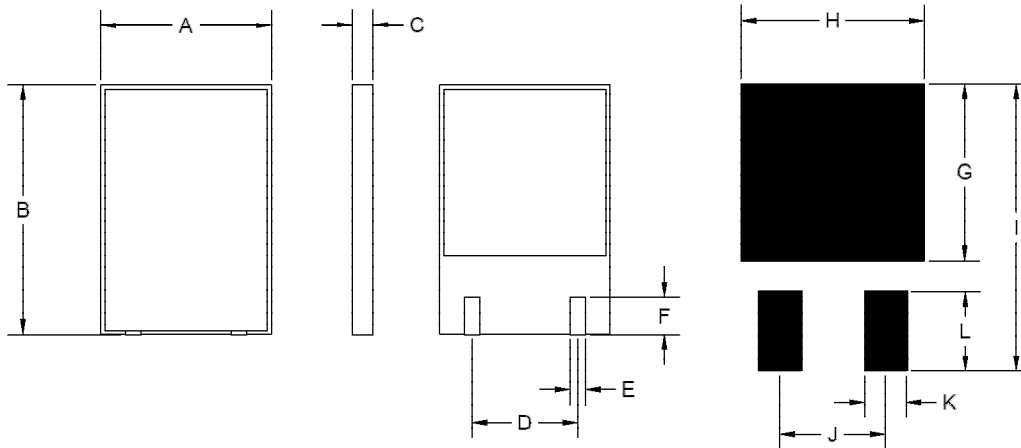
PFC Series

Thick Film Power SMD Resistors



DIMENSIONS

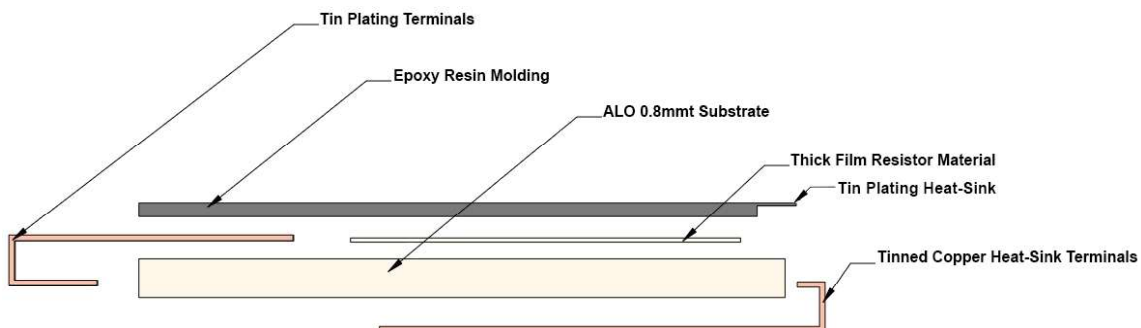
Solder Pad Layout



Note: Back solder pad is isolated from both pins.

| Dimension | mm | tol. (±mm) | inches | tol. (±inches) |
|-----------|------|------------|--------|----------------|
| A | 8.2 | 0.2 | 0.323 | 0.008 |
| B | 12.0 | 0.2 | 0.472 | 0.008 |
| C | 1.0 | 0.05 | 0.039 | 0.002 |
| D | 5.08 | 0.1 | 0.200 | 0.004 |
| E | 0.75 | 0.05 | 0.030 | 0.002 |
| F | 1.8 | 0.05 | 0.070 | 0.002 |
| G | 8.5 | - | 0.335 | - |
| H | 8.8 | - | 0.346 | - |
| I | 14.1 | - | 0.555 | - |
| J | 5.08 | - | 0.200 | - |
| K | 2.0 | - | 0.079 | - |
| L | 3.8 | - | 0.150 | - |

CHIP CONSTRUCTION (EXPLODED VIEW)



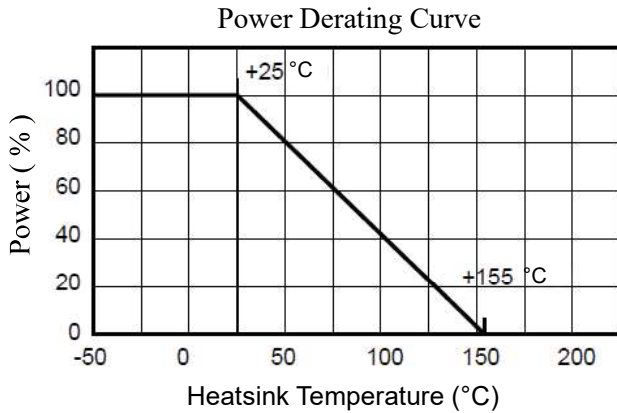
PFC Series

Thick Film Power SMD Resistors



MOUNTING

Derating



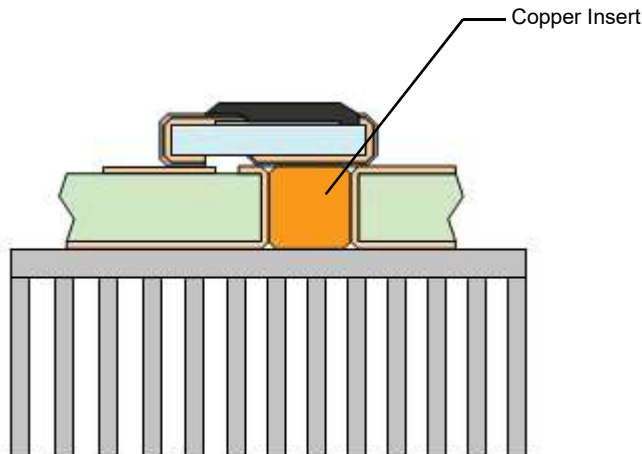
Power Rating Notes -

The PFC Series Resistors must be attached to a suitable heatsink. The maximum internal resistor temperature is 155°C.

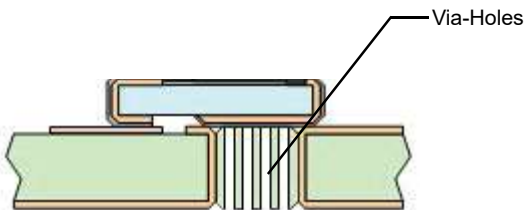
To specify an appropriate heatsink use the following formula :

$$R_{\theta H} = \frac{T_{MAX} - (P * R_{\theta R}) - T_A}{P}$$

Where: $R_{\theta H}$ = Thermal Resistance of Heatsink (K/W)
 $R_{\theta R}$ = Thermal Resistance of Resistor (K/W)
 T_{MAX} = Maximum Temperature of Resistor
 T_A = Ambient Temperature of Heatsink (°C)
 P = Power Through Resistor (W)



Copper insert improves thermal conductivity to heatsink. Power ratings of 35W can be achieved through active cooling of the heatsink. For more general information on heatsinking please see our training module on heatsinking by clicking here.



Plastic Tape Specifications

Standard Package contains 500 pcs/reel, diameter 254mm reel in paper box.

Digikey Package contains 500 pcs/reel, diameter 254mm reel in paper box.