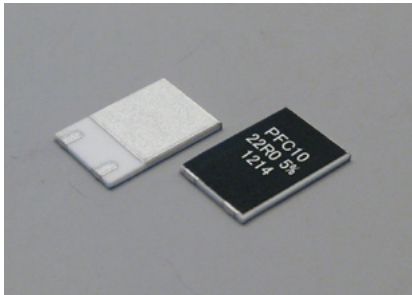


# PFC Series

Thick Film Power SMD Resistors



- TO-126 Pad Dimensions
- Extremely 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

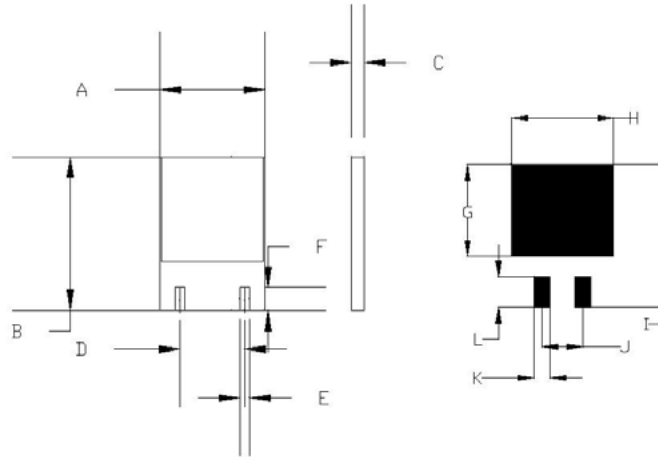
Type	PFC10 (TO-126)	
Power Rating with heatsink	25W ( 2.5W on Simple Solder Pad )	
Thermal Resistance Rthj-c	3.6 K/W	
Resistance Range	0.1 - 51K Ohms E12+ (includes 2.5, 4.0, 5.0, 8.0, and 16)	
Tolerances (others upon request)	1% / 5%	
Temperature Coefficient	100 ppm/K	
Operating Temperature	-55°C to 155°C	
Max Operating Voltage	$\sqrt{P * R}$	
Capacitance	1.44 pF	
Inductance	8.38 nH	
Withstanding Voltage	1500 VAC	
Insulation Resistance	Over 1,000 Megohm	
Resistor Material	Thick Film	
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
Vibration	$\pm 0.25\%$	IEC60068-2-6

## Ordering Information

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

## SPECIFICATIONS (continued)

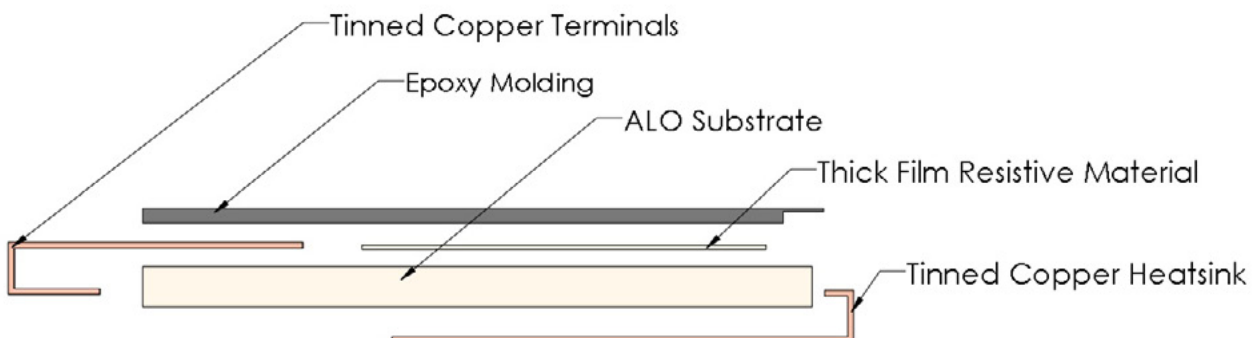
### Dimensions



**Note:** Back plate is isolated from both pins.

Dimension	PFC10 (TO-126)			
	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	0.2	0.004
E	0.75	0.05	0.030	0.002
F	1.78	0.05	0.070	0.002
G	8.51	-	0.335	-
H	8.80	-	0.346	-
I	14.10	-	0.555	-
J	5.08	-	0.2	-
K	2.00	-	0.079	-
L	3.8	-	0.150	-

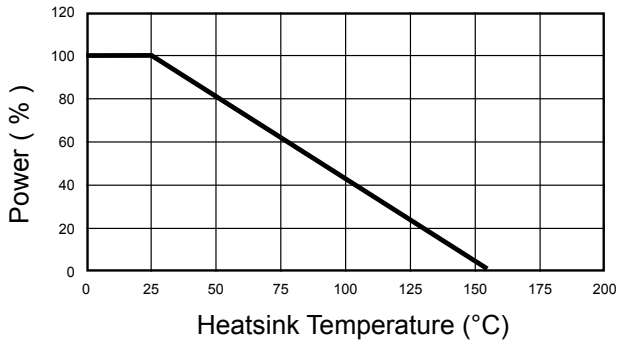
## CHIP CONSTRUCTION (EXPLODED VIEW)



## SPECIFICATIONS (continued)

### Derating

Power Derating Curve

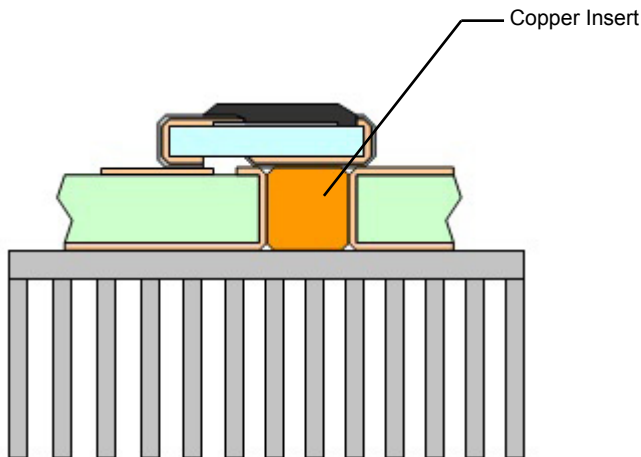


**Power Rating Notes -**

The PFC Series Resistors must be attached to a suitable heat-sink. The maximum internal resistor temperature is 155°C. To specify an appropriate heatsink use the following formula :

$$R_{0H} = \frac{T_{MAX} - (P \times R_{0R}) - T_A}{P}$$

Where:  $R_{0H}$  = Thermal Resistance of Heatsink ( K/W )  
 $R_{0R}$  = 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 25W 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.

