



PowerPeg™ is an OEM Thermal Connector for integration with surface mount components in printed circuit board assemblies.

Thermal management design in SMT PCB assemblies is often constrained by manufacturing methods. PowerPeg thermal connectors are easy to solder due to their low mass. Large and complex coolers can be connected after soldering. This two-part system provides limitless possibilities for cooling systems in standardized PCB assemblies.

PowerPeg Thermal Connectors provide unmatched thermal transfer properties directly from the die pad of the component to an external dissipater.

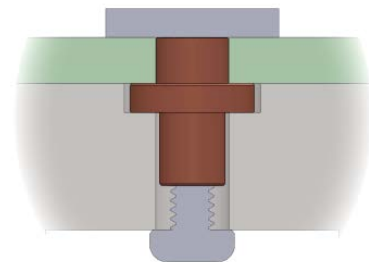
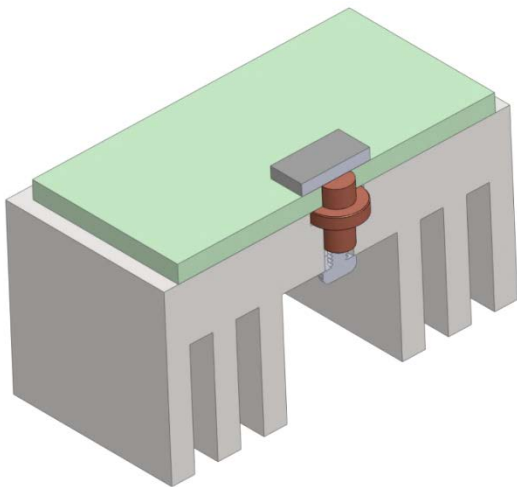
1. Principal of Operation

TCAP-4325 connects to the heat source through a plated via in the PCB directly beneath the die pad.

Thermal energy enters the Connector through the **Input Surface**. PowerPeg is designed to self-align with the top surface of the PCB during insertion.

Thermal energy exits the Connector through the **Output Surface**. 43 Series standard receptacles interface to the Output Surface through forced contact generated by the mounting screw.

The unique design and solid copper alloy construction provide high thermal conduction from input to output. The **PowerPeg system** of interchangeable parts standardizes the micro heatsink interface.

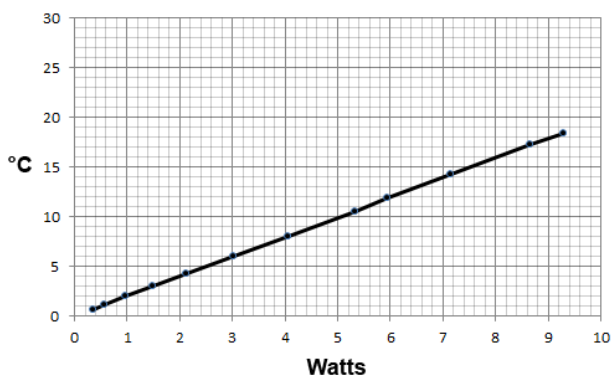


2. Specifications

Symbol	Parameter	Typical	Units
Θ_{JD}	Thermal Resistance from Junction to Dissipater	2.0	°C/W
M_{PP}	Mass	0.265	grams
C_{TH}	Heat Capacity	0.385	J/(g°C)
T_{MS}	Maximum torque applied to mounting screw	1	Inch Pounds
Mounting screw thread		0-80 UNF X 0.07"	
Surface plating		Gold over Nickel ASTM B733, ASTM B488	

3. Characteristics

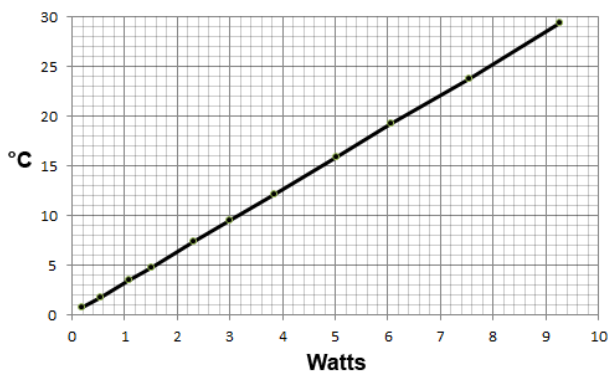
R_{th} - Bare Contact



Conditions

PCB: None
 Ambient Temp: 31°C
 Solder: 63Sn/37Pb
 Solder Gap: 0.003 Inches
 Thermal Grease: None

R_{th} - Thermal Grease

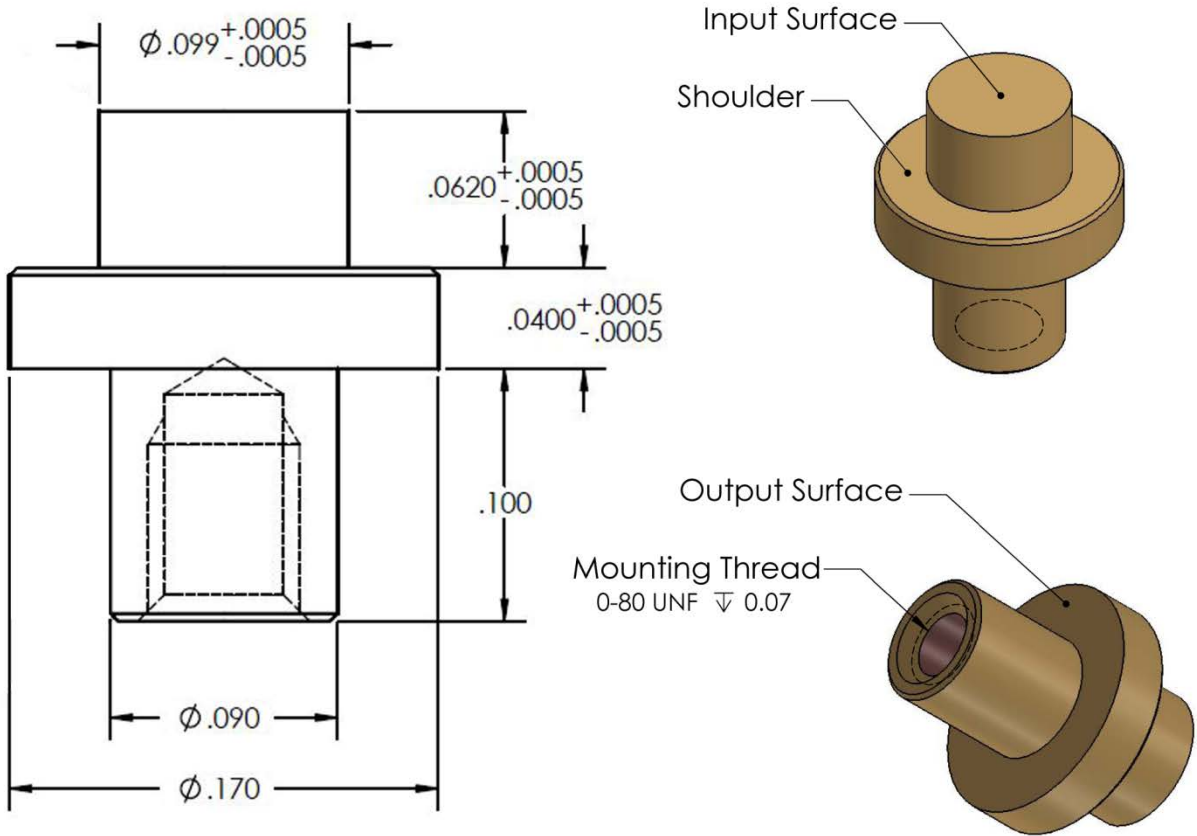


Conditions

PCB: None
 Ambient Temp: 31°C
 Solder: 63Sn/37Pb
 Solder Gap: 0.003 Inches
 Thermal Grease: Boron Nitride

4. Structural Features

INCHES



US Patent Number 8,929,077

5. Ordering Information



TCAP - 4325-TR

Termination TC- Connector TS- Standoff	Construction A- Copper B- Aluminum	Plating P- Gold N- Nickel	Output Dia. 43- 4.3mm	Input Dia. 25- 2.5mm	Packaging TR- Carrier Tape FP- Plastic Tray
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TEM Products Inc. provides custom thermal components made to specification.

Email requests to temproductsinc@gmail.com

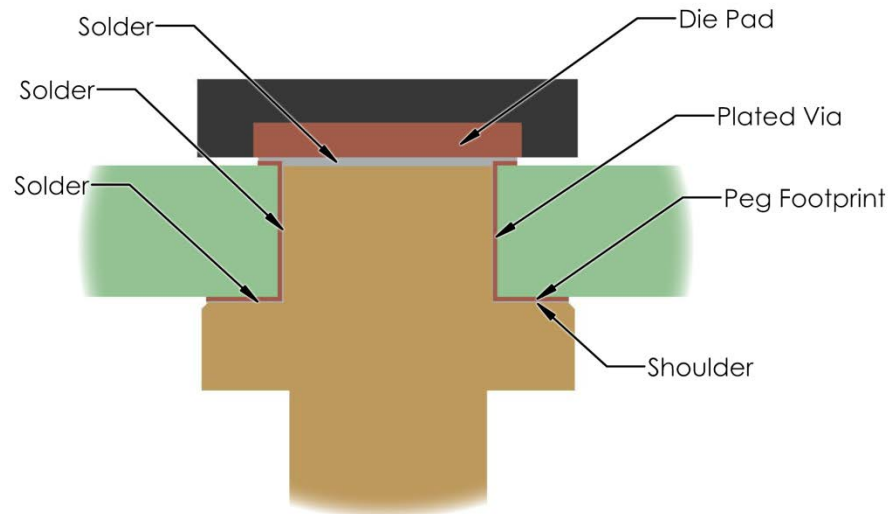


6. PCB Design

Soldering Considerations

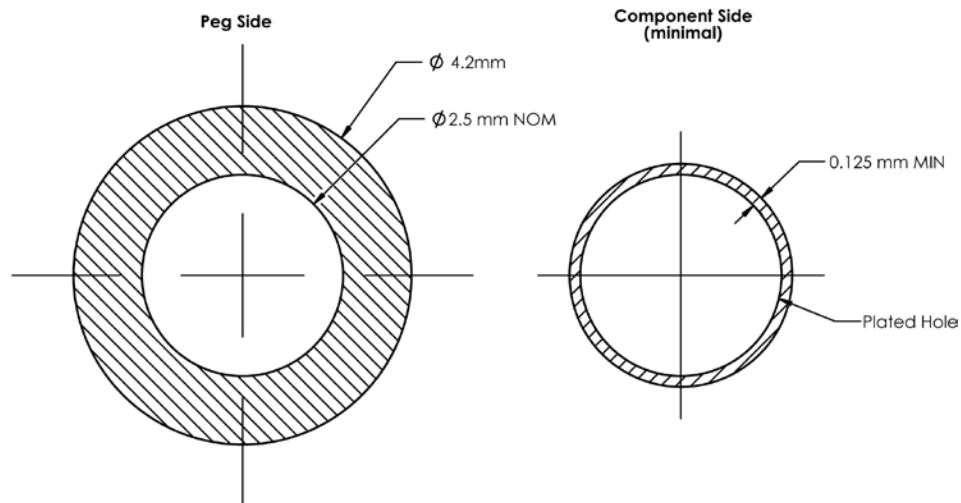
The Peg should be fused not only to the die pad of its corresponding component, but also to the inner surface of the plated via, and copper pad on the bottom layer.

For complete soldering instructions visit www.tem-products.com/powerpeg



Thermal Input

Follow manufacturer's specifications for component-side footprint, centering Peg under die pad for even flow. The figure below shows a bare minimum footprint.



7. Dissipater Design

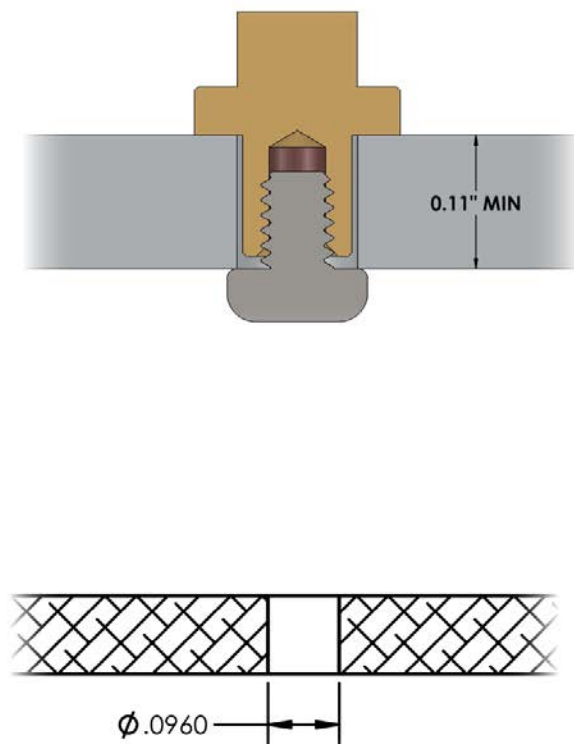
TCAP-4325 accommodates a wide range of dissipaters. The TCAP-4325 is compatible with any 43 Series dissipaters from TEM Products Inc.

The TCAP-4325 is precision-made and specially designed with industry in mind. PowerPeg receptacle is designed to accommodate fluctuations in PCB dimensions. The receptacle allows for +/- 0.003" variation without hazard of misalignment or PCB stress. The thermal output structure accommodates fluctuations in PCB dimensions by interfacing on a single plane.

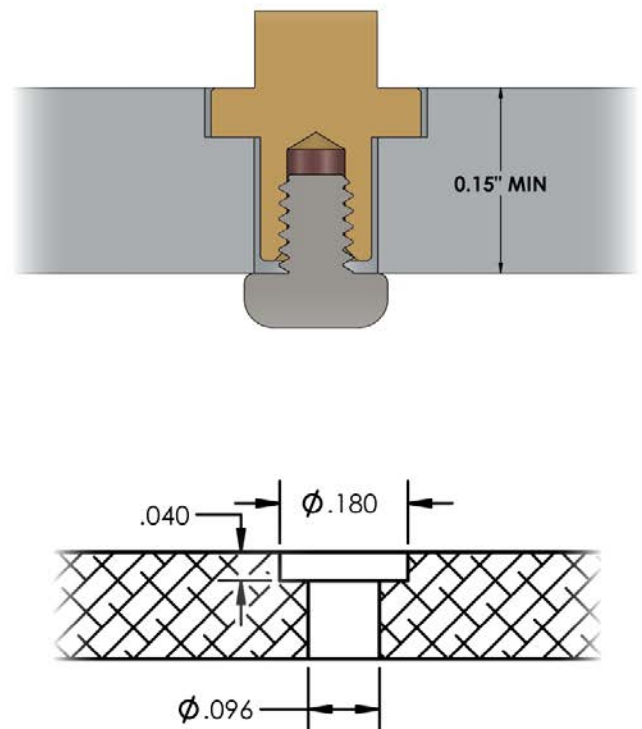
The figures below show two examples of common arrangements. The bottom surface of the PCB can be mounted flush with the surface of the dissipater by creating a receptacle in the dissipater. Alternatively the PCB can be spaced away from the dissipater in order to allow placement of SMT components on both sides of the PCB.

Thermal grease is not required.

Standoff Receptacle



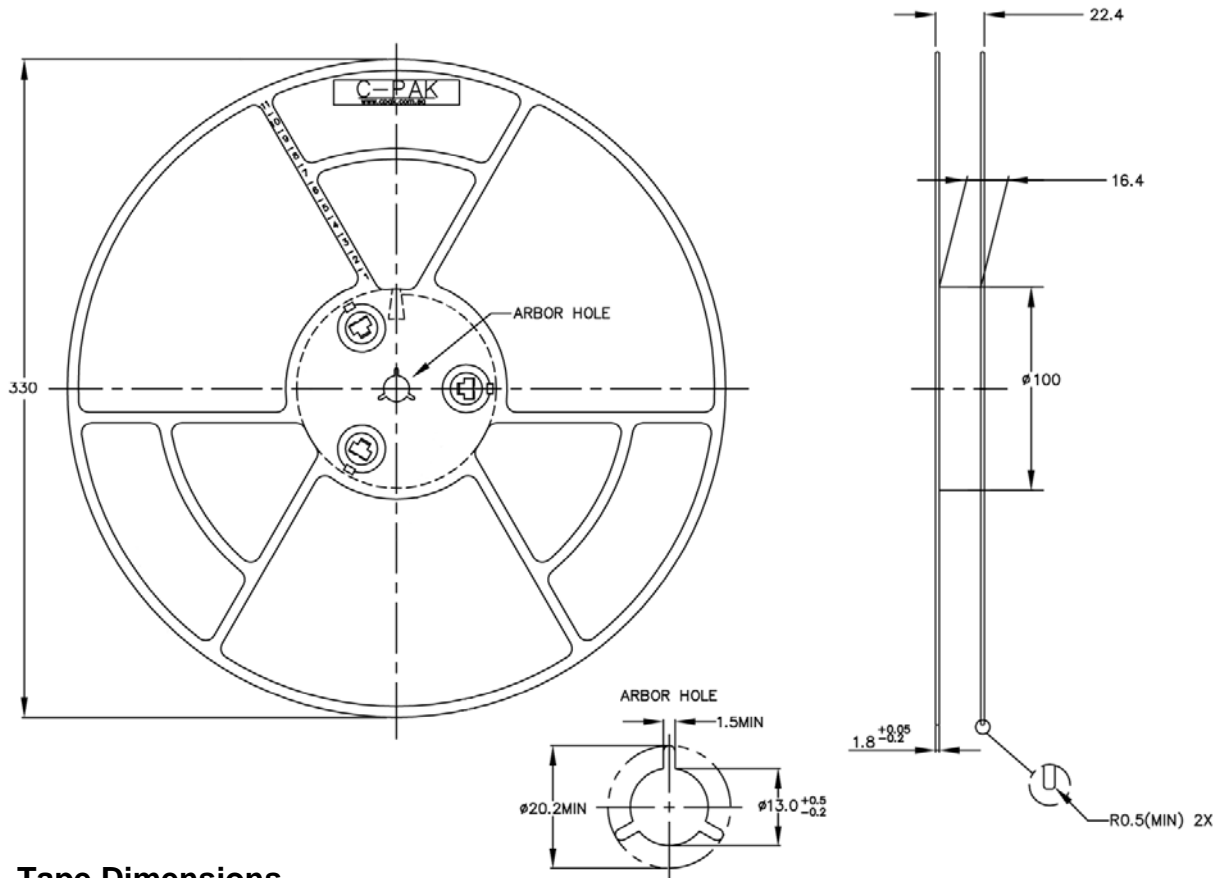
Recessed Receptacle



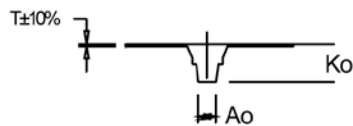
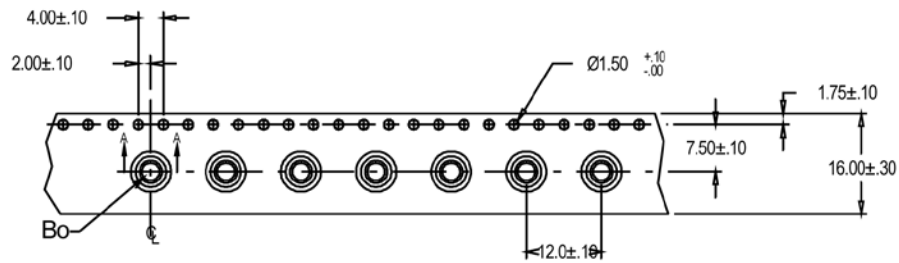
8. Packaging

Reel Dimensions

UNIT : MM



Tape Dimensions



Ao	2.79	0.110	±.25 MM ±.010 INCH
Bo	2.79	0.110	
Ko	5.72	0.225	
DIM	MM	INCH	TOL.