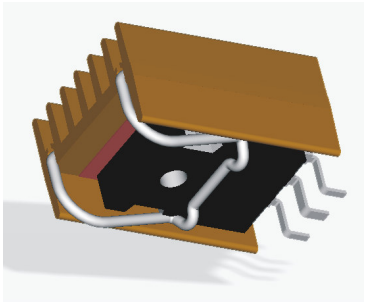
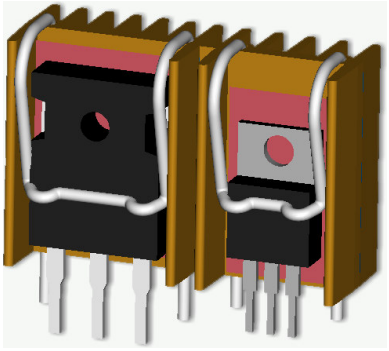
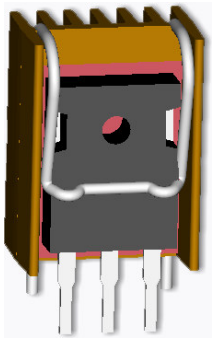
Universal Mountable, Auto-align Clip System™ Heat Sink

Design Realization offers another patented, low cost heat sink which can be either through-hole or surface mounted to meet the circuit design, cooling and space needs. The new heat sink comprises an extruded or stamped heat sink body, insulated feet (optional, for Double-sided PWB and through-hole mounting only) and an integral spring clip which has an auto-align feature and solderable leads. This type of heat sink provides ease of assembly and all-in-one solution. It can be configured to mount single or multiple devises, such as TO-220, TO-247, TO-264, TO-218 and D-Pak series power devices with either natural or forced convention cooling.







This wonderful concept has been patented and prototyped. The prototypes work just as great as thought (can be seen in the pictures). Fig. 1 shows the heat sink assemblies which are soldered to a copper plate by through-hole mounting or surface mounting. Fig. 2 shows the varieties of this type of heat sink assemblies. Fig. 3 shows the comparison for the exiting heat sink assembly from other manufacturer and ours.

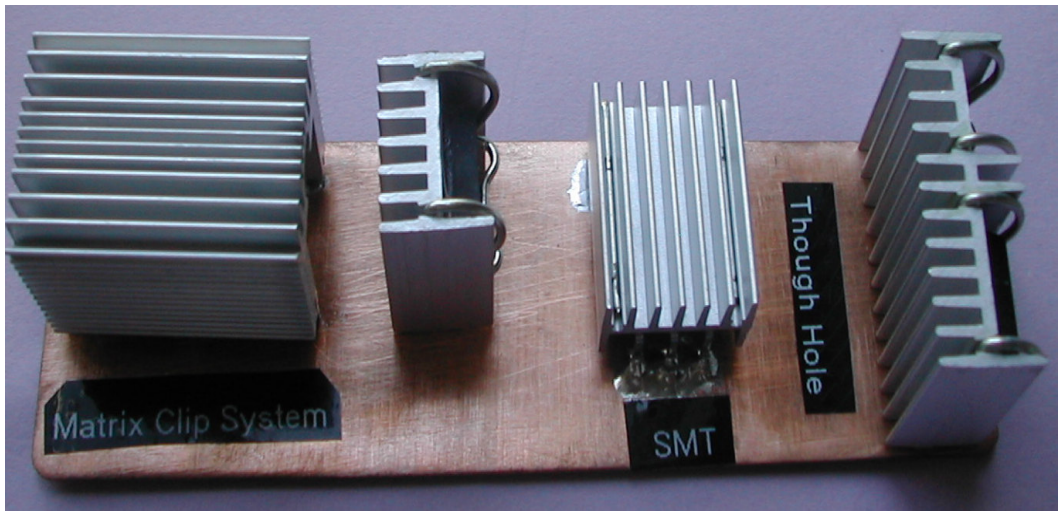


Fig. 1 Design Realization Proprietary heat sinks soldered on a copper plate. Simple, lower cost, small foot-print and higher power dissipation

Design Realization Inc. Proprietary Products, 197 Alhambra Way, Ft. Lauderdale, FL 33326
Tel: 954/304 - 0094, 954/353 - 4921, Fax: 954/ 584 - 6161, E-mail: sales@design-realization.com

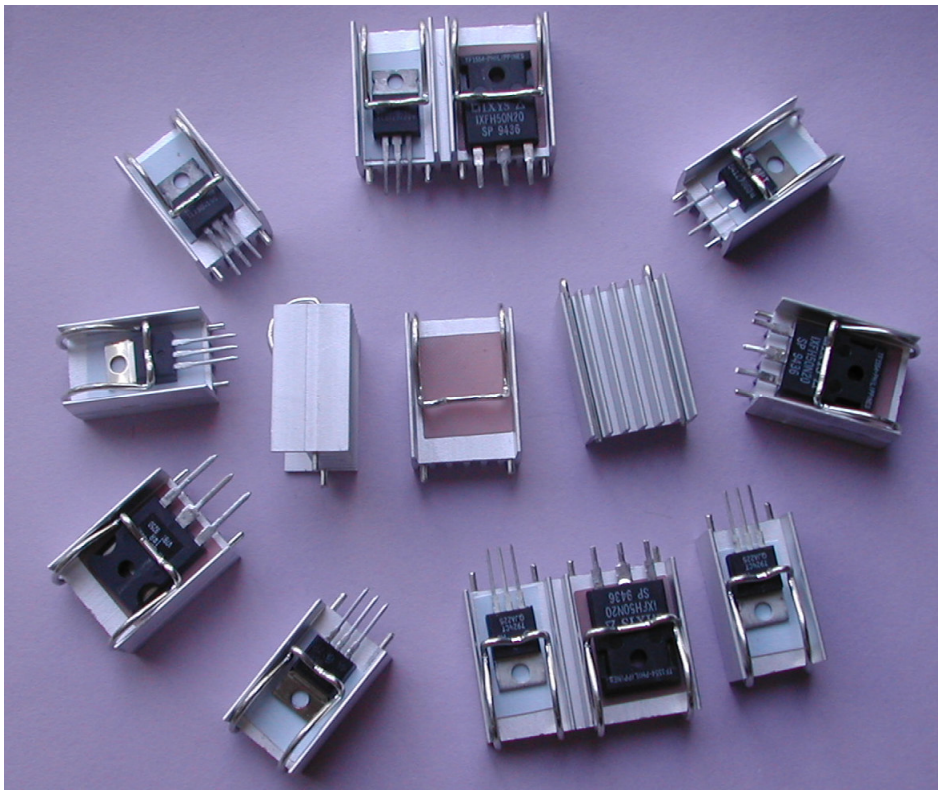


Fig. 2 Design Realization Universal Mountable, Auto Align Heat Sinks

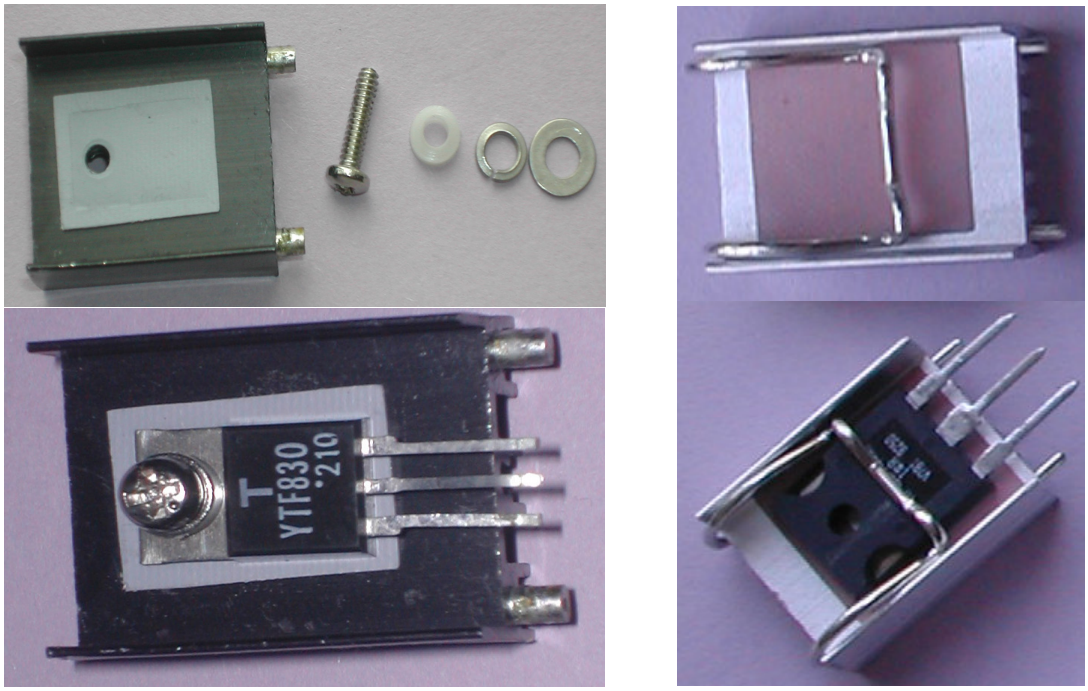


Fig. 3. (1) Existing heat sink (left) used in some power supplies, consisting of a screw, a threaded hole, a shoulder washer, a lock washer, a flat washer and two press-in pins. (2) Our heat sink (right), unitary construction, one for all

Features and Benefits

- **Minimum assembly cost and labor**
  Spring clip and auto-align feature makes fasteners and fixtures obsolete in assemblies.
- **Maximum Repeatability**
  Clamping force on devices by resilient spring can be loaded and unloaded repeatedly without degrading the clamping force.
- **Maximum Thermal Transfer**
  Maximum surface area per unit volume and consistent mounting force reduce thermal resistance
- **Maximum Resistance to Shock & Vibration**
  Light weight and resilient spring clip locks electronic component in place to provide maximum resistance to shock and vibration
- **Maximum Reliability**
  Resilient spring action locks electronic component in place and few parts in assembly. Prevent short circuit by eliminating metal particles generated from hardware or thread tapping.
- **Design Flexibility**
  Provide the maximum flexibility for various mounting options: through hole or surface mounting, vertical or horizontal mounting and customizing the dimensions to meet the design needs without costly tooling alteration.

Material:

Heat Sink: Extruded: Aluminum Alloy 6063-T5 or equivalents
Stamped: Aluminum Alloy 5052- H32 or equivalents

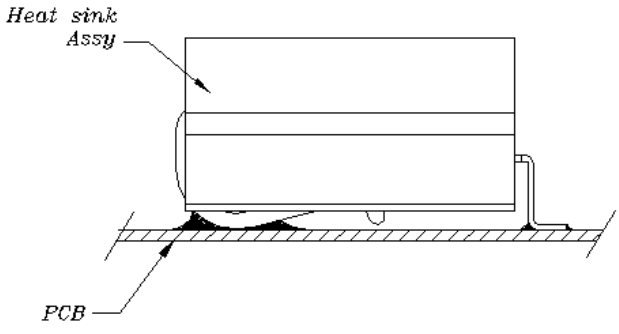
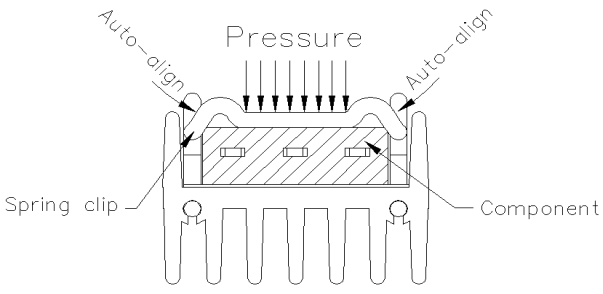
Spring Clip: Music Wire Per ASTM A228

Insulator (Optional): Sil-Pad 900-S, 800-S, K6,
or equivalents.

Finish:

Heat Sink: Clear or Yellow Chromate per Mil-5541-C, or Black Anodize per Mil-8625, Type II, Class 2, or Unfinished

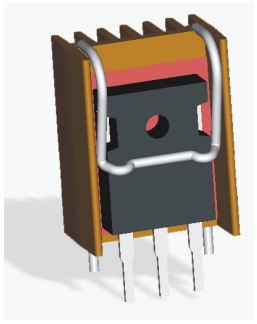
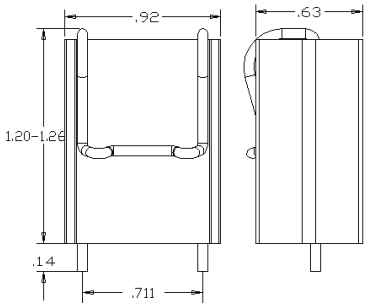
Spring Clip: Bright Tin Plated per Mil-10727 over copper strike.

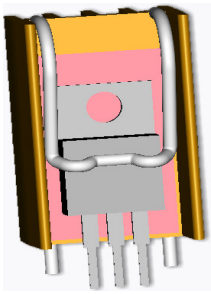
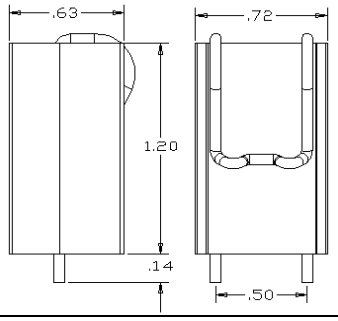
Surface Mounting Profile	Auto-Align Mechanism
	

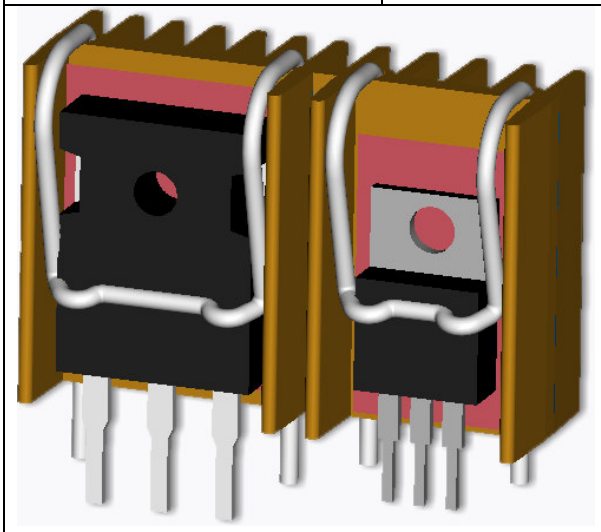
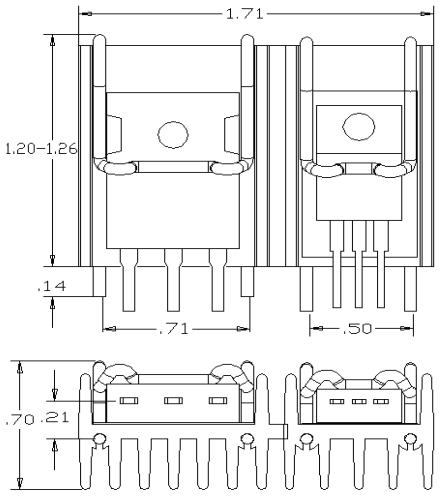
Design Realization Inc. Proprietary Products, 197 Alhambra Way, Ft. Lauderdale, FL 33326
Tel: 954/304 - 0094, 954/353 - 4921, Fax: 954/ 584 - 6161, E-mail: sales@design-realization.com

Products Applications and Specifications

Patent Pending

Basic P/N: WV-T247-101	Mechanical Dimensions (in.)	Surface Area (in^2):	8.4
		Weight (oz):	3.7
		Clip Force (lbf):	13.2
		Mounting:	Thru Hole, vertical
		Thermal Resistance, Natural Convection **$R_{s\text{-}a}$ =7 ˚C/W**	

Basic P/N: WV-T220-101	Mechanical Dimensions (in.)	Surface Area (in^2):	6.5
		Weight (oz):	2.7
		Clip Force (lbf):	13.2
		Mounting:	Thru Hole, vertical
		Thermal Resistance Natural Convection **$R_{s\text{-}a}$ =10 ˚C/W**	

Basic P/N: WH-DTO-101	Mechanical Dimensions (in.)	Surface Area (in^2):	3.4
			

Surface Area(in^2):	15 (H=1.1)	Mounting:	Thru Hole, vertical	Thermal Resistance @ N.C.
Weight (oz):	6.4(H=1.1)		Or SMT	**$R_{s\text{-}a}$ =6 ˚C/W**

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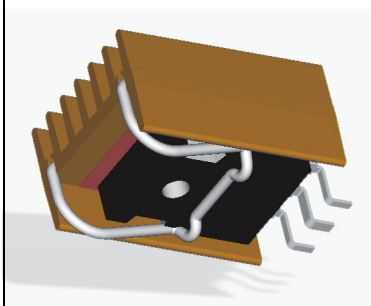
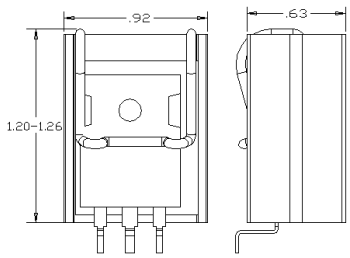
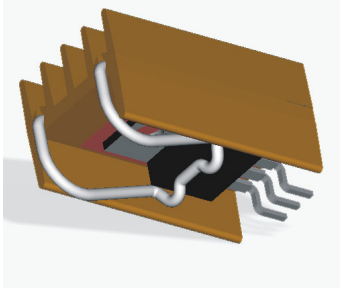
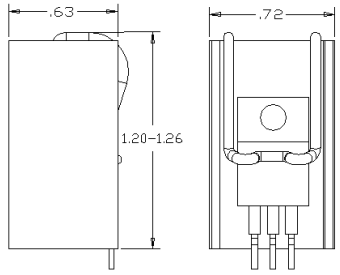
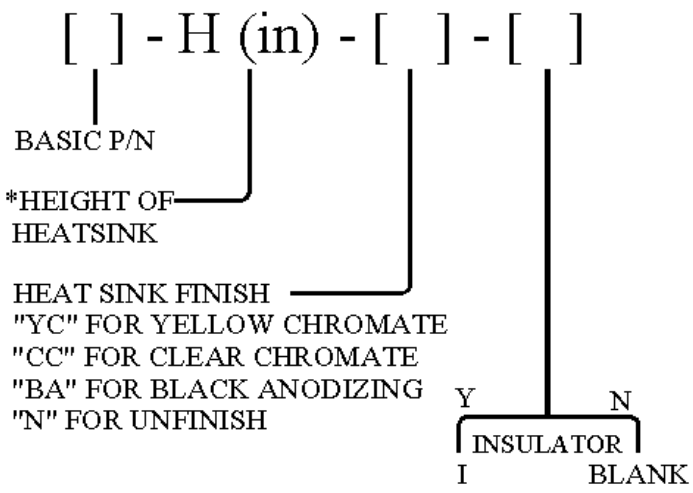
Basic P/N: WH-T247-101	Mechanical Dimensions (in.)	Surface Area (in^2):	8.4
		Weight (oz):	2.7
		Clip Force (lbf):	13.2
		Mounting:	Surface horizontal
		Thermal Resistance, Natural Convection **R_{s-a} =7 ˚C/W**	
Basic P/N: WH-T220-101	**Mechanical Dimensions (in.)**	**Surface Area (in^2):**	**6.5**
		Weight (oz):	3.7
		Clip Force (lbf):	13.2
		Mounting:	Surface horizontal
		Thermal Resistance Natural Convection **R_{s-a} =10 ˚C/W**	

Auto-align Clip Heat Sink Part Number Specification



Notes:

1). Customer can specify the Height of the Heat Sink
2). Insulator Pad size is the max size of the component + .20 in. (5.08mm). e.g. TO-247 max size is 20.30x15.90mm, so the insulator is 25.38x20.98mm.
3). Insulator Pad material to specified by customer.
4). The thermal resistance value may subject to change in different environments.

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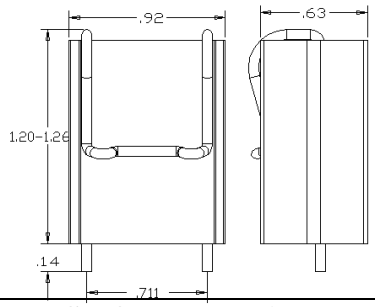
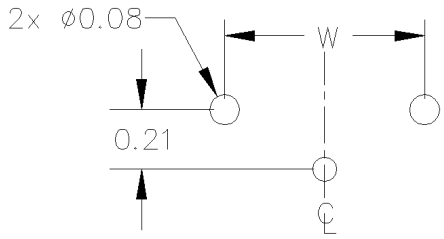
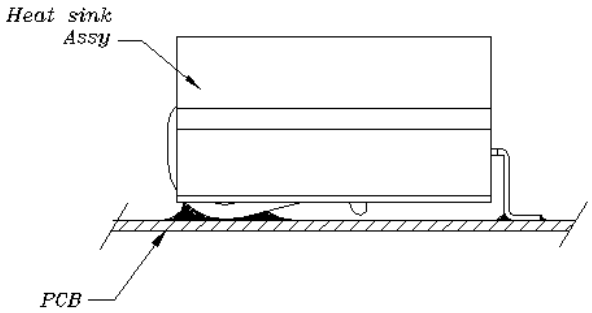
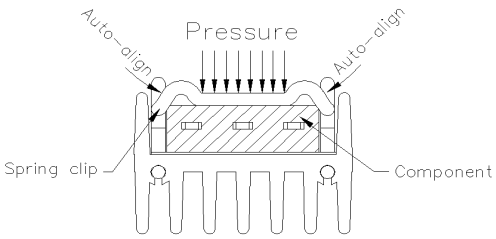
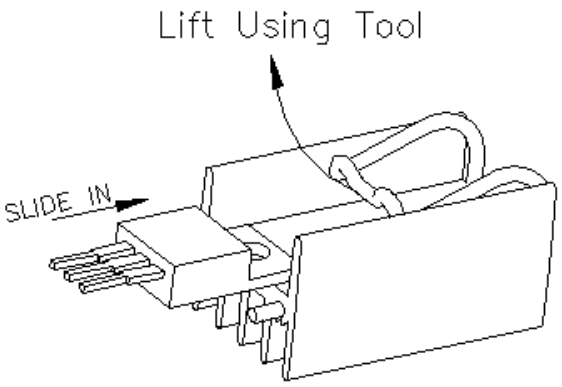
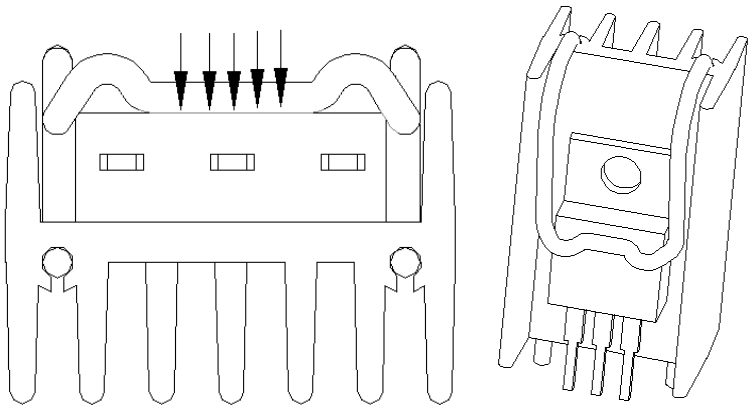
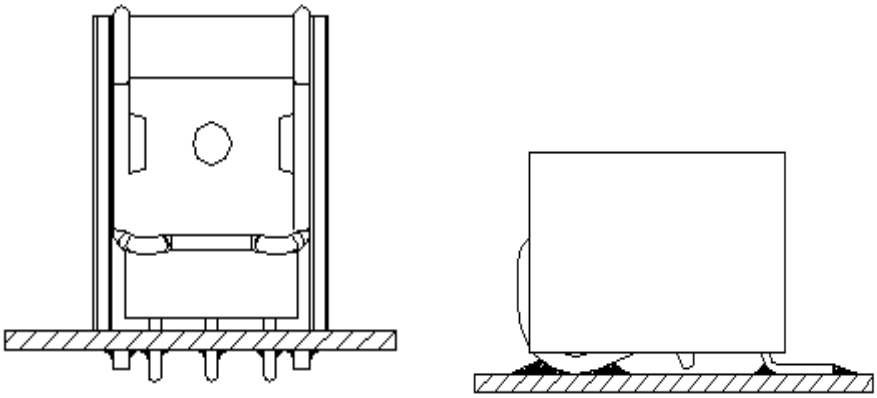
Mounting Specifications

Through-hole Mounting	PCB Foot-print
	
Surface Mounting	**Auto-Align Mechanism**
	

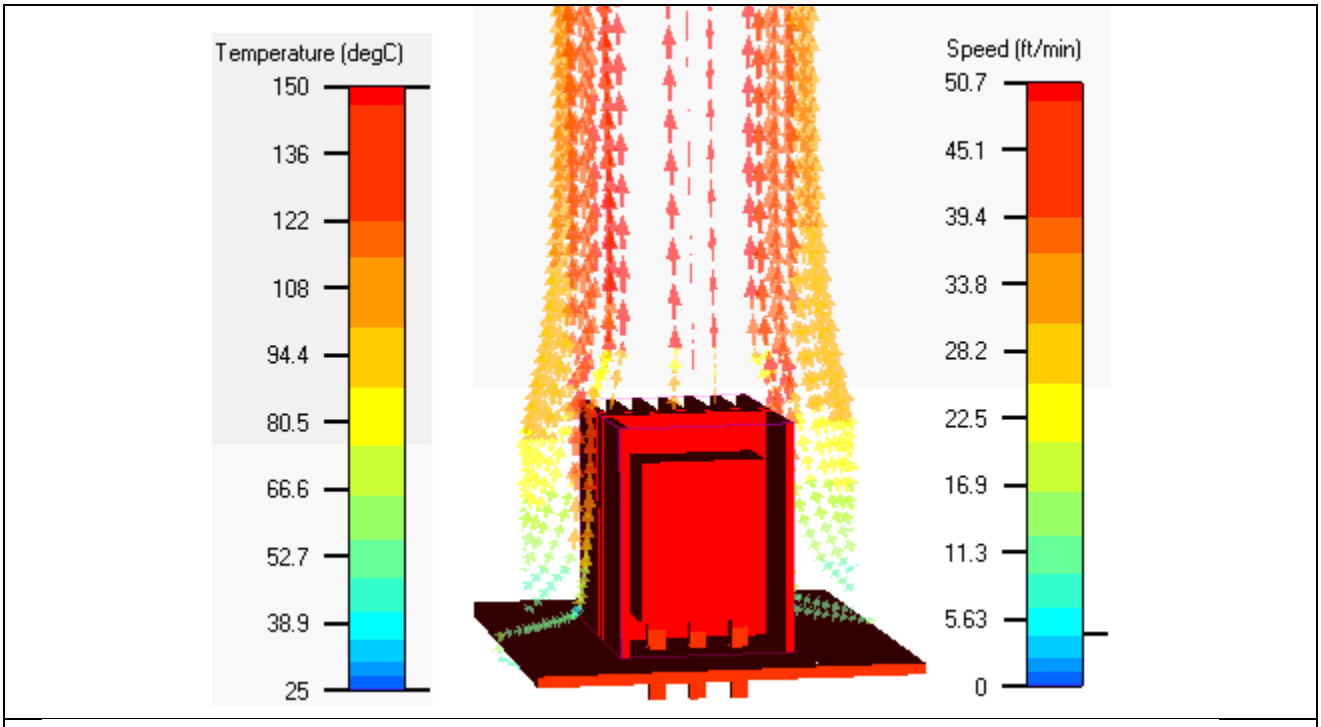
Assembly Illustrations

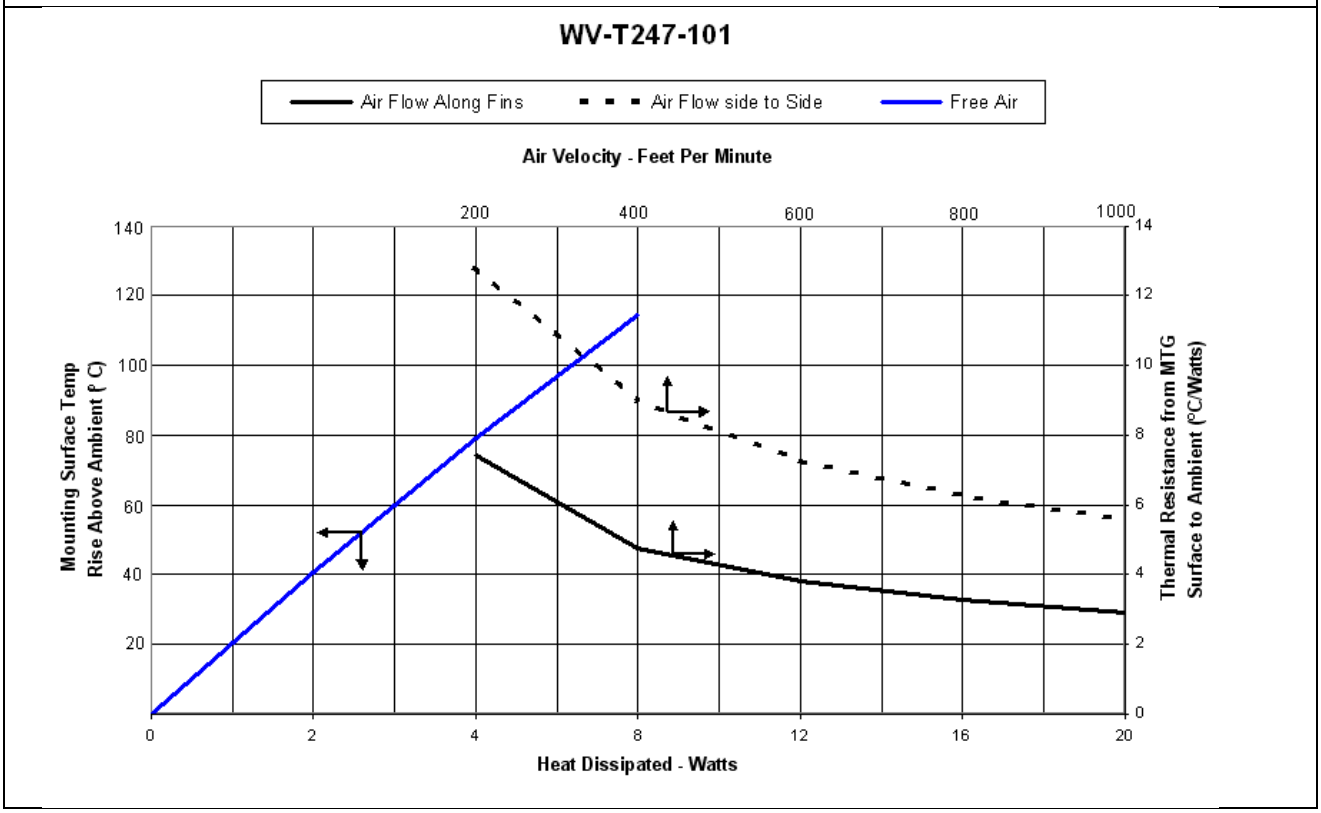
A. Install	

B. Ready	
C. Assemble On PCBs	

Special Notes: This product is protected by the US Patent Law. Any companies or individual who try to infringe would be punished according to the Law.

WV series Heat Sink Thermal Performances





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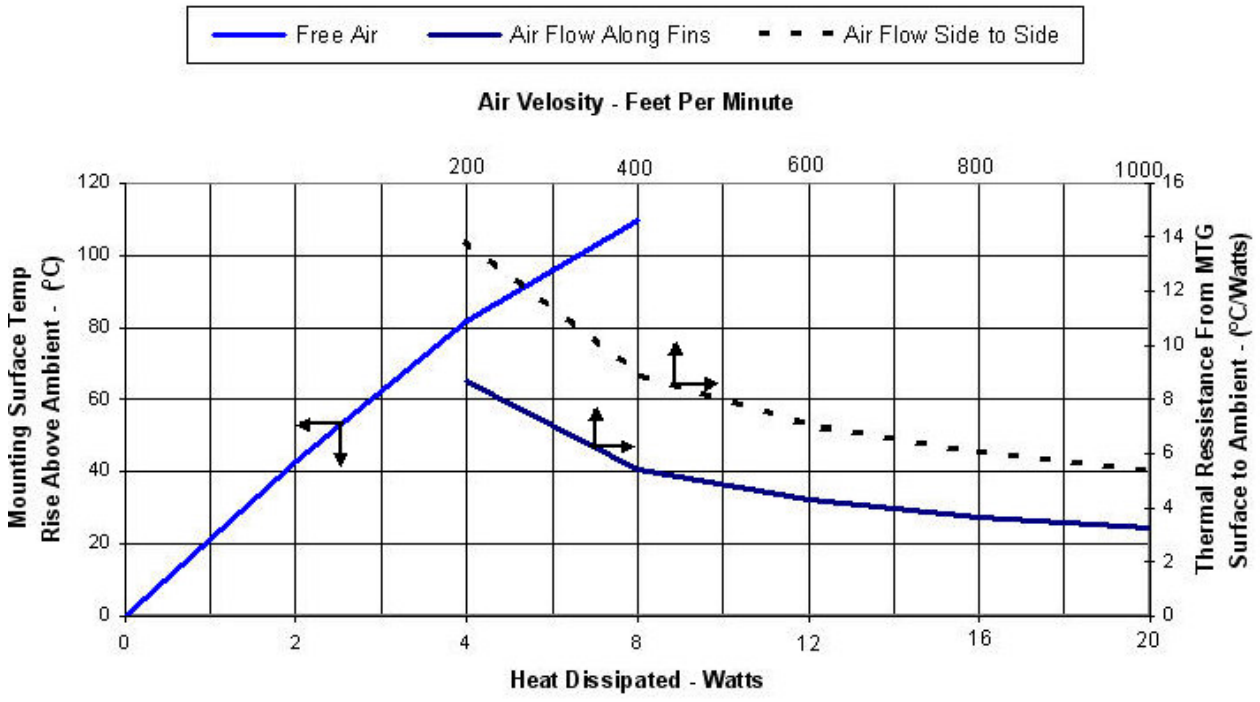
WV-T220-101



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