

## EXTRUDED HEAT SINKS FOR POWER SEMICONDUCTORS



### 621/623 SERIES

#### Low-Profile Heat Sinks for All Metal-Case Power Semiconductors

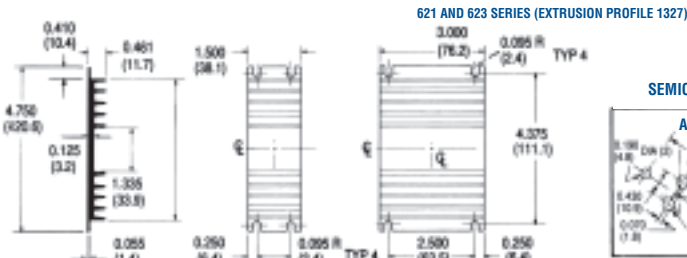
TO-3

| Standard P/N | Footprint Dimensions in. (mm) | Height in. (mm) | Mounting Hole Pattern | Thermal Performance at Typical Load |                   | Weight lbs. (grams) |
|--------------|-------------------------------|-----------------|-----------------------|-------------------------------------|-------------------|---------------------|
|              |                               |                 |                       | Natural Convection                  | Forced Convection |                     |
| 621A         | 4.750 (120.6) x 1.500 (38.1)  | 0.461 (11.7)    | (1) TO-3              | 75°C @ 15W                          | 2.0°C/W @ 250 LFM | 0.1000 (45.36)      |
| 621K         | 4.750 (120.6) x 1.500 (38.1)  | 0.461 (11.7)    | None                  | 75°C @ 15W                          | 2.0°C/W @ 250 LFM | 0.1000 (45.36)      |
| 623A         | 4.750 (120.6) x 3.000 (76.2)  | 0.461 (11.7)    | (1) TO-3              | 52°C @ 15W                          | 1.5°C/W @ 250 LFM | 0.2100 (95.26)      |
| 623K         | 4.750 (120.6) x 3.000 (76.2)  | 0.461 (11.7)    | None                  | 52°C @ 15W                          | 1.5°C/W @ 250 LFM | 0.2100 (95.26)      |

A general purpose yet efficient heat dissipator for TO-3 and virtually all other styles of metal case power semiconductor package types, the 621 and 623 Series low-profile flat back heat sinks find a wide variety of applications. The central channel between fins measures 1.300 in. (33.0) (min.) in

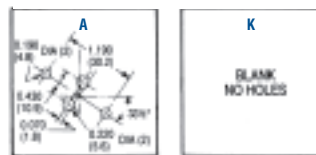
width, accommodating many types of packages. Mounting hole pattern "A" is predrilled for the standard TO-3 package. Material: Aluminum Alloy, Black Anodized.

### MECHANICAL DIMENSIONS

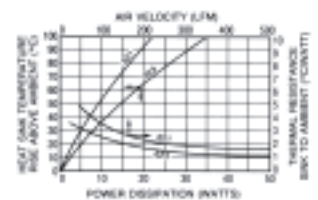


Dimensions: in. (mm)

#### SEMICONDUCTOR MOUNTING HOLES



#### NATURAL AND FORCED CONVECTION CHARACTERISTICS



### 301/302/303 SERIES

#### Compact Heat Sinks for Dual Stud-Mounted Semiconductor Cases

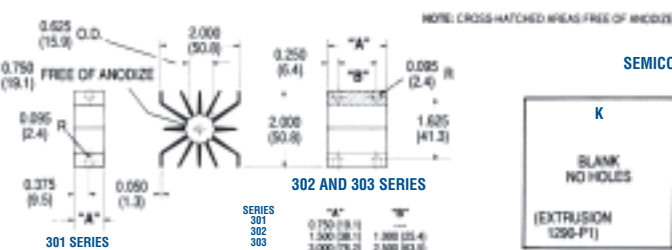
STUD-MOUNT

| Standard P/N | Outline Dimensions in. (mm) | Length "A" in. (mm) | Mounting Hole (s) Pattern and Number  | Thermal Performance at Typical Load |                   | Weight lbs. (grams) |
|--------------|-----------------------------|---------------------|---------------------------------------|-------------------------------------|-------------------|---------------------|
|              |                             |                     |                                       | Natural Convection                  | Forced Convection |                     |
| 301K         | 2.000 (50.8) x 2.000 (50.8) | 0.750 (19.1)        | None                                  | 70°C @ 15W                          | 2.5°C/W @ 250 LFM | 0.0580 (26.31)      |
| 301M         | 2.000 (50.8) x 2.000 (50.8) | 0.750 (19.1)        | (1) 10-32UNF, 0.625 in. thread depth  | 70°C @ 15W                          | 2.5°C/W @ 250 LFM | 0.0580 (26.31)      |
| 301N         | 2.000 (50.8) x 2.000 (50.8) | 0.750 (19.1)        | (1) 1/4-28UNF, 0.625 in. thread depth | 70°C @ 15W                          | 2.5°C/W @ 250 LFM | 0.0580 (26.31)      |
| 302M         | 2.000 (50.8) x 2.000 (50.8) | 1.500 (38.1)        | (1) 10-32UNF, 0.625 in. thread depth  | 50°C @ 15W                          | 1.8°C/W @ 250 LFM | 0.1330 (60.33)      |
| 302MM        | 2.000 (50.8) x 2.000 (50.8) | 1.500 (38.1)        | (2) 10-32UNF, 0.625 in. thread depth  | 50°C @ 15W                          | 1.8°C/W @ 250 LFM | 0.1330 (60.33)      |
| 302N         | 2.000 (50.8) x 2.000 (50.8) | 1.500 (38.1)        | (1) 1/4-28UNF, 0.625 in. thread depth | 50°C @ 15W                          | 1.8°C/W @ 250 LFM | 0.1330 (60.33)      |
| 302NN        | 2.000 (50.8) x 2.000 (50.8) | 1.500 (38.1)        | (2) 1/4-28UNF, 0.625 in. thread depth | 50°C @ 15W                          | 1.8°C/W @ 250 LFM | 0.1330 (60.33)      |
| 303M         | 2.000 (50.8) x 2.000 (50.8) | 3.000 (76.2)        | (1) 10-32UNF, 0.625 in. thread depth  | 37°C @ 15W                          | 1.3°C/W @ 250 LFM | 0.2680 (121.56)     |
| 303MM        | 2.000 (50.8) x 2.000 (50.8) | 3.000 (76.2)        | (2) 10-32UNF, 0.625 in. thread depth  | 37°C @ 15W                          | 1.3°C/W @ 250 LFM | 0.2680 (121.56)     |
| 303N         | 2.000 (50.8) x 2.000 (50.8) | 3.000 (76.2)        | (1) 1/4-28UNF, 0.625 in. thread depth | 37°C @ 15W                          | 1.3°C/W @ 250 LFM | 0.2680 (121.56)     |
| 303NN        | 2.000 (50.8) x 2.000 (50.8) | 3.000 (76.2)        | (2) 1/4-28UNF, 0.625 in. thread depth | 37°C @ 15W                          | 1.3°C/W @ 250 LFM | 0.2680 (121.56)     |

The large fin area in minimum total volume provided by the radial design of the 301/302/303 Series offers maximum heat transfer efficiency in natural convection. All types are available with one tapped mounting hole for rectifiers and other stud-mounting semiconductors; the

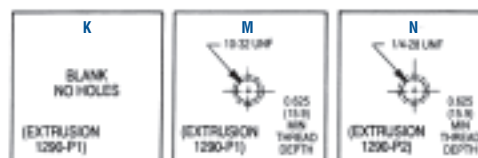
302 and 303 Series offer maximum cost savings with dual mounting locations ("MM" and "NN" mounting hole patterns) for two stud-mount devices. Material: Aluminum Alloy, Black Anodized.

### MECHANICAL DIMENSIONS

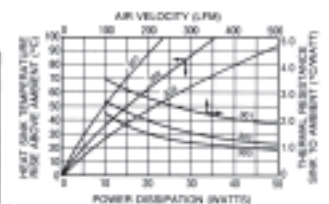


Dimensions: in. (mm)

#### SEMICONDUCTOR MOUNTING HOLES



#### NATURAL AND FORCED CONVECTION CHARACTERISTICS



## EXTRUDED HEAT SINKS FOR POWER SEMICONDUCTORS



### 401 & 403 SERIES

#### Double-Surface Heat Sinks for TO-3 Case Styles

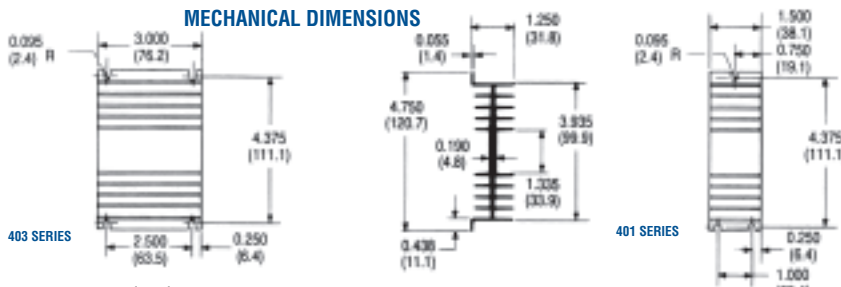
TO-3; Stud-Mount

| Standard P/N | Width in. (mm) | Overall Dimensions in. (mm) | Height in. (mm) | Semiconductor Mounting Hole Pattern | Thermal Performance at Typical Load<br>Natural Convection | Forced Convection | Weight<br>lbs. (grams) |
|--------------|----------------|-----------------------------|-----------------|-------------------------------------|-----------------------------------------------------------|-------------------|------------------------|
| 401A         | 4.750 (120.7)  | 1.500 (38.1)                | 1.250 (31.8)    | (1) TO-3                            | 80°C @ 30W                                                | 1.5°C/W @ 250 LFM | 0.1500 (68.04)         |
| 401F         | 4.750 (120.7)  | 1.500 (38.1)                | 1.250 (31.8)    | 0.270 in. (6.9)-Dia Hole            | 80°C @ 30W                                                | 1.5°C/W @ 250 LFM | 0.1500 (68.04)         |
| 401K         | 4.750 (120.7)  | 1.500 (38.1)                | 1.250 (31.8)    | None                                | 80°C @ 30W                                                | 1.5°C/W @ 250 LFM | 0.1500 (68.04)         |
| 403A         | 4.750 (120.7)  | 3.000 (76.2)                | 1.250 (31.8)    | (1) TO-3                            | 55°C @ 30W                                                | 0.9°C/W @ 250 LFM | 0.3500 (158.76)        |
| 403F         | 4.750 (120.7)  | 3.000 (76.2)                | 1.250 (31.8)    | 0.270 in. (6.9)-Dia Hole            | 55°C @ 30W                                                | 0.9°C/W @ 250 LFM | 0.3500 (158.76)        |
| 403K         | 4.750 (120.7)  | 3.000 (76.2)                | 1.250 (31.8)    | None                                | 55°C @ 30W                                                | 0.9°C/W @ 250 LFM | 0.3500 (158.76)        |

With fins oriented vertically in cabinet sidewall applications, 401 and 403 Series heat sinks are recommended for critical space applications where maximum heat dissipation is required for high-power TO-3 case styles. Forced convection performance is also exemplary with these double surface fin types. Semiconductor mounting hole style "F" offers a single centered 0.270

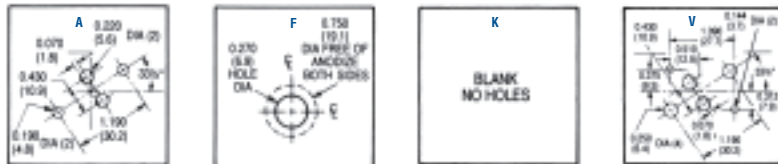
in. (6.9)-diameter mounting hole (with a 0.750 in. (19.1)-diameter area free of anodize) for mounting stud-type diodes and rectifiers. Hole pattern "V" available upon request. Material: Aluminum Alloy, Black Anodized.

#### MECHANICAL DIMENSIONS



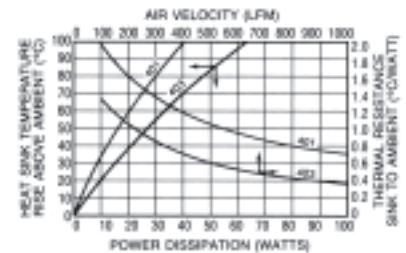
Dimensions: in. (mm)

#### SEMICONDUCTOR MOUNTING HOLES



401 AND 403 SERIES  
(EXTRUSION  
PROFILE 1024)

#### NATURAL AND FORCED CONVECTION CHARACTERISTICS



### 413/421/423 SERIES

#### Low-Height Double-Surface Heat Sinks for TO-3 Case Styles and Diodes

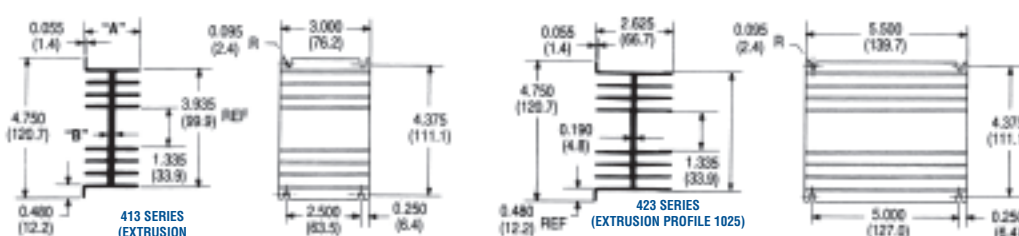
TO-3; DO-5; Stud-Mount

| Standard P/N | Width in. (mm) | Nominal Dimensions<br>Length in. (mm) | Height "A" in. (mm) | Semiconductor Mounting Hole Pattern | Thermal Performance at Typical Load<br>Natural Convection | Forced Convection  | Weight<br>lbs. (grams) |
|--------------|----------------|---------------------------------------|---------------------|-------------------------------------|-----------------------------------------------------------|--------------------|------------------------|
| 413A         | 4.750 (120.7)  | 3.000 (76.2)                          | 1.875 (47.6)        | (1) TO-3                            | 72°C @ 50W                                                | 0.85°C/W @ 250 LFM | 0.6300 (285.77)        |
| 413F         | 4.750 (120.7)  | 3.000 (76.2)                          | 1.875 (47.6)        | 0.270 in. (6.9)-Dia Hole            | 72°C @ 50W                                                | 0.85°C/W @ 250 LFM | 0.6300 (285.77)        |
| 413K         | 4.750 (120.7)  | 3.000 (76.2)                          | 1.875 (47.6)        | None                                | 72°C @ 50W                                                | 0.85°C/W @ 250 LFM | 0.6300 (285.77)        |
| 421A         | 4.750 (120.7)  | 3.000 (76.2)                          | 2.625 (66.7)        | (1) TO-3                            | 58°C @ 50W                                                | 0.7°C/W @ 250 LFM  | 0.6300 (285.77)        |
| 421F         | 4.750 (120.7)  | 3.000 (76.2)                          | 2.625 (66.7)        | 0.270 in. (6.9)-Dia Hole            | 58°C @ 50W                                                | 0.7°C/W @ 250 LFM  | 0.6300 (285.77)        |
| 421K         | 4.750 (120.7)  | 3.000 (76.2)                          | 2.625 (66.7)        | None                                | 58°C @ 50W                                                | 0.7°C/W @ 250 LFM  | 0.6300 (285.77)        |
| 423A         | 4.750 (120.7)  | 5.500 (140.2)                         | 2.625 (66.7)        | (1) TO-3                            | 47°C @ 50W                                                | 0.5°C/W @ 250 LFM  | 1.1700 (530.71)        |
| 423K         | 4.750 (120.7)  | 5.500 (140.2)                         | 2.625 (66.7)        | None                                | 47°C @ 50W                                                | 0.5°C/W @ 250 LFM  | 1.1700 (530.71)        |

Space-saving double surface 413, 421, and 423 Series utilize finned surface area on both sides of the power semiconductor mounting surface to provide maximum heat dissipation in a compact profile. Ready to install on popular power components in natural and forced convection applications. Apply Wake-

field Type 126 silicone-free thermal compound or Wakefield DeltaPad™ interface materials for maximum performance. Material: Aluminum Alloy, Black Anodized.

#### MECHANICAL DIMENSIONS

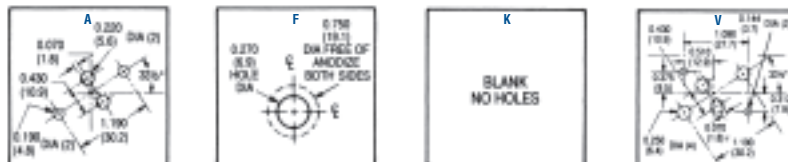


413 SERIES  
(EXTRUSION  
PROFILE 2276)

421 SERIES  
(EXTRUSION  
PROFILE 1025)

423 SERIES  
(EXTRUSION PROFILE 1025)

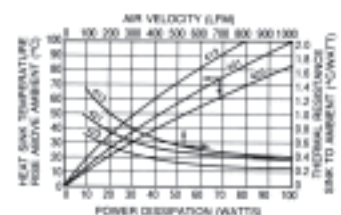
#### SEMICONDUCTOR MOUNTING HOLES



| SERIES | "A"          | "B"         |
|--------|--------------|-------------|
| 413    | 1.875 (47.6) | 0.290 (5.1) |
| 421    | 2.625 (66.7) | 0.190 (4.8) |

Dimensions: in. (mm)

#### NATURAL AND FORCED CONVECTION CHARACTERISTICS



## EXTRUDED HEAT SINKS FOR POWER SEMICONDUCTORS



### 431 & 433 SERIES

#### High-Performance Heat Sinks for 30-100W Metal Power Semiconductors

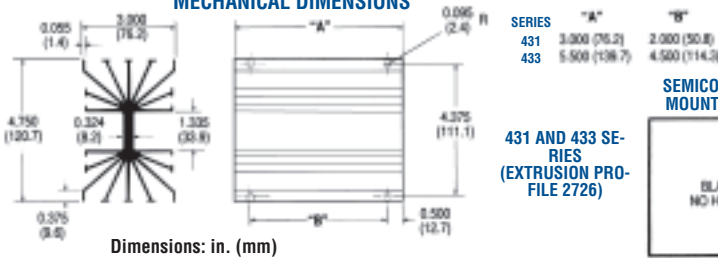
TO-3; Stud-Mount

| Standard P/N | Width in. (mm) | Nominal Dimensions Length "A" in. (mm) | Height in. (mm) | Semiconductor Mounting Hole Pattern | Thermal Performance at Typical Load |                    | Weight lbs. (grams) |
|--------------|----------------|----------------------------------------|-----------------|-------------------------------------|-------------------------------------|--------------------|---------------------|
|              |                |                                        |                 |                                     | Natural Convection                  | Forced Convection  |                     |
| 431K         | 4.750 (120.7)  | 3.000 (76.2)                           | 3.000 (76.2)    | None                                | 55°C @ 50W                          | 0.40°C/W @ 250 LFM | 0.7800 (353.81)     |
| 433K         | 4.750 (120.7)  | 5.500 (139.7)                          | 3.000 (76.2)    | None                                | 42°C @ 50W                          | 0.28°C/W @ 250 LFM | 1.4900 (675.86)     |

Need maximum heat dissipation from a TO-3 rectifier heat sink in minimum space? The Wakefield 431 and 433 Series center channel double-surface heat sinks offer the highest performance-to-weight ratio for minimum volume occupied for TO-3, diode, and stud-mount metal power semiconductors in the 30- to

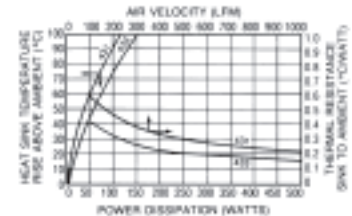
100-watt operating range. Additional interface resistance reduction for maximized overall performance can be achieved with proper application of Wakefield Type 126 silicone-free thermal compound. Material: Aluminum Alloy, Black Anodized.

#### MECHANICAL DIMENSIONS



Dimensions: in. (mm)

#### NATURAL AND FORCED CONVECTION CHARACTERISTICS



### 435 SERIES

#### Lightweight Quadruple Mount Heat Sink for TO-3 Case Styles

TO-3

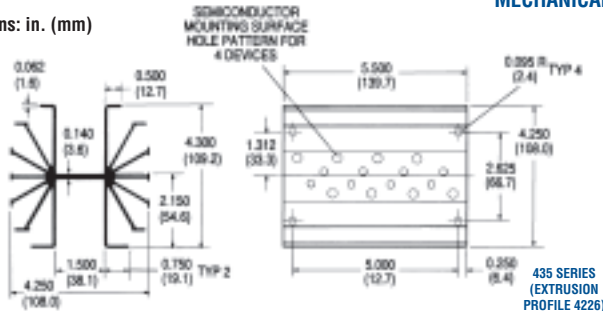
| Standard P/N | Width in. (mm) | Nominal Dimensions Length in. (mm) | Height in. (mm) | Semiconductor Mounting Hole Pattern | Thermal Performance at Typical Load |                                          | Weight lbs. (grams) |
|--------------|----------------|------------------------------------|-----------------|-------------------------------------|-------------------------------------|------------------------------------------|---------------------|
|              |                |                                    |                 |                                     | Natural Convection                  | Forced Convection                        |                     |
| 435AAAA      | 4.250 (108.0)  | 5.500 (139.7)                      | 4.300 (109.2)   | (4) TO-3                            | 37°C @ 50W<br>54°C @ 80W            | 0.38°C/W @ 250 LFM<br>0.24°C/W @ 600 LFM | 1.1500 (521.64)     |

This lightweight high-performance heat sink is designed to mount and cool efficiently one to four TO-3 style metal case power semiconductors. The Type 435AAAA is the standard configuration available from stock, predrilled for mounting four TO-3 style devices. Increased performance can be achieved with the proper

selection and installation of a Wakefield Type 175 DeltaPad Kapton™ interface material for each power semiconductor or, for maximum reduction of case-to-sink interface loss, the application of Wakefield Type 126 silicone-free thermal compound. Material: Aluminum Alloy, Black Anodized.

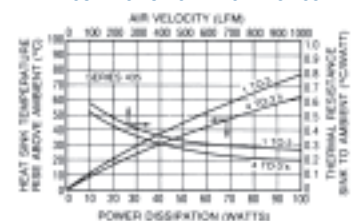
#### MECHANICAL DIMENSIONS

Dimensions: in. (mm)



435 SERIES  
(EXTRUSION  
PROFILE 4226)

#### NATURAL AND FORCED CONVECTION CHARACTERISTICS



### 441 SERIES

#### High-Performance Natural Convection Heat Sinks for Rectifiers and Diodes

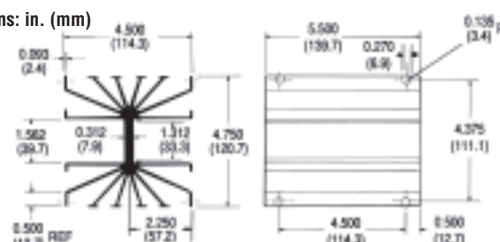
Stud-Mount

| Standard P/N | Width in. (mm) | Nominal Dimensions Length in. (mm) | Height in. (mm) | Semiconductor Mounting Hole Pattern | Thermal Performance at Typical Load |                                          | Weight lbs. (grams) |
|--------------|----------------|------------------------------------|-----------------|-------------------------------------|-------------------------------------|------------------------------------------|---------------------|
|              |                |                                    |                 |                                     | Natural Convection                  | Forced Convection                        |                     |
| 441K         | 4.750 (120.7)  | 5.500 (139.7)                      | 4.500 (114.3)   | None                                | 34°C @ 50W<br>47°C @ 80W            | 0.30°C/W @ 250 LFM<br>0.19°C/W @ 600 LFM | 1.9700 (893.59)     |

Designed for vertical mounting within a power supply enclosure or equipment cabinet without forced airflow available. This Wakefield 441 Series heat sink will dissipate up to 100 watts efficiently in natural convection with a maximum 55°C heat sink temperature rise above ambient. When applied in a forced convec-

tion environment, the 441K Type will achieve thermal resistance of 0.18°C/W (sink to ambient) at 1000 LFM. Supplied with no predrilled device mounting hole pattern. Material: Aluminum Alloy, Black Anodized.

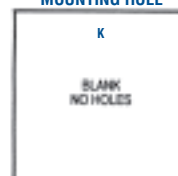
Dimensions: in. (mm)



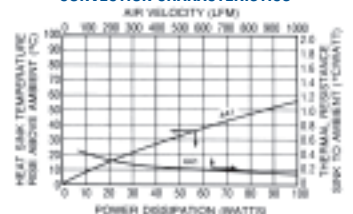
441 SERIES  
(EXTRUSION  
PROFILE 1273)

#### MECHANICAL DIMENSIONS

##### SEMICONDUCTOR MOUNTING HOLE



#### NATURAL AND FORCED CONVECTION CHARACTERISTICS



## EXTRUDED HEAT SINKS FOR POWER SEMICONDUCTORS



## 465 & 476 SERIES

### High-Power Heat Sinks for Medium Hex-Type Rectifiers and Diodes

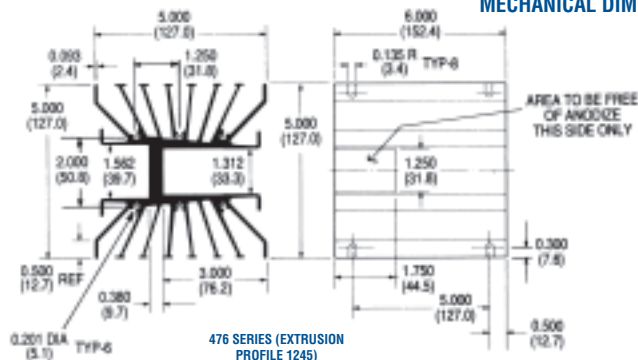
### Stud-Mount

| Standard<br>P/N | Nominal Dimensions |                    |                    | Hex Style<br>Type | Mounting<br>Hole Pattern                 | Thermal Performance at Typical Load |                    | Weight<br>lbs. (grams) |
|-----------------|--------------------|--------------------|--------------------|-------------------|------------------------------------------|-------------------------------------|--------------------|------------------------|
|                 | Width<br>in. (mm)  | Length<br>in. (mm) | Height<br>in. (mm) |                   |                                          | Natural Convection                  | Forced Convection  |                        |
| 465K            | 4.000 (101.6)      | 5.000 (127.0)      | 4.000 (101.6)      | 1.060 in. Hex     | None                                     | 38°C @ 50W                          | 0.27°C/W @ 500 LFM | 1.9300 (875.45)        |
| 476K            | 5.000 (127.0)      | 6.000 (152.4)      | 5.000 (127.0)      | 1.250 in. Hex     | None                                     | 25°C @ 50W                          | 0.19°C/W @ 500 LFM | 2.8200 (1279.15)       |
| 476W            | 5.000 (127.0)      | 6.000 (152.4)      | 5.000 (127.0)      | 1.250 in. Hex     | 0.765 in.<br>(19.4) Dia.<br>Center Mount | 25°C @ 50W                          | 0.19°C/W @ 500 LFM | 2.8000 (1270.08)       |

Wakefield Engineering has designed four standard heat sink types for ease of installation and efficient heat dissipation for industry standard hex-type rectifiers and similar stud-mount power devices: 465, 476, 486, and 489 Series. The 465 and 476 Series shown here are de-

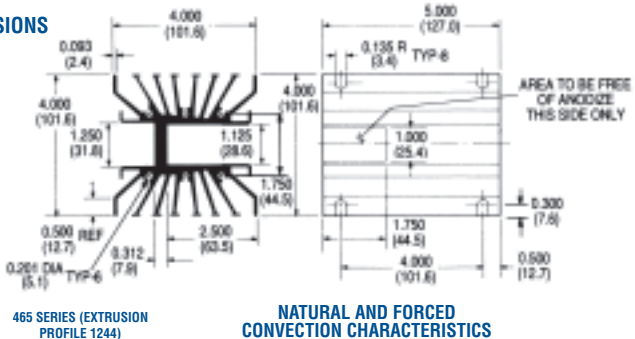
signed for 1.060 in. Hex (465 Type) and 1.250 in. Hex (476 Type). The 476W Type is available predrilled for an 0.765 in. (19.4) dia, mounting hole, Material: Aluminum Alloy, Black anodized.

## MECHANICAL DIMENSIONS

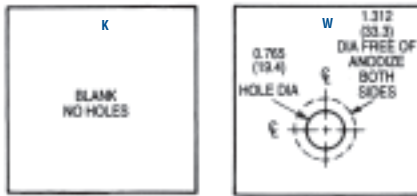
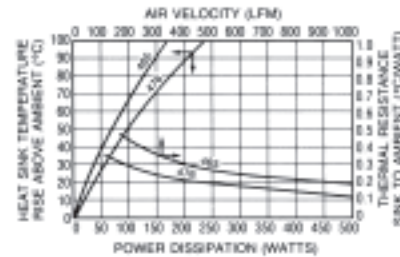


## SEMICONDUCTOR MOUNTING HOLES

**Dimensions: in. (mm)**



## NATURAL AND FORCED CONVECTION CHARACTERISTICS



## 486 & 489 SERIES

### Heat Sinks for High-Power Hex-Type Rectifiers and Diodes

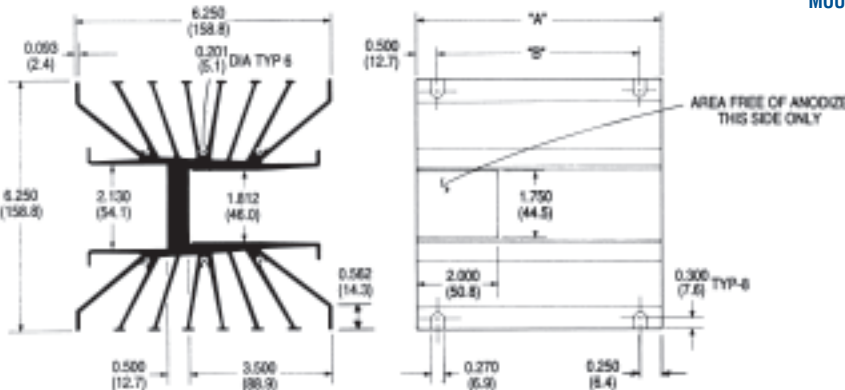
### Stud-Mount

| Standard P/N | Nominal Dimensions |                 |                 |                | Mounting Hole Pattern | Thermal Performance at Typical Load |                                          | Weight lbs. (grams) |
|--------------|--------------------|-----------------|-----------------|----------------|-----------------------|-------------------------------------|------------------------------------------|---------------------|
|              | Width in. (mm)     | Length in. (mm) | Height in. (mm) | Hex Style Type |                       | Natural Convection                  | Forced Convection                        |                     |
|              |                    |                 |                 |                |                       |                                     |                                          |                     |
| 486K         | 6.250 (158.8)      | 6.000 (152.4)   | 6.250 (158.8)   | 1.750 in. Hex  | None                  | 24°C @ 50W<br>86°C @ 250W           | 0.20°C/W @ 250 LFM<br>0.13°C/W @ 500 LFM | 4.2100 (1909.66)    |
| 489K         | 6.250 (158.8)      | 9.000 (228.6)   | 6.250 (158.8)   | 1.750 in. Hex  | None                  | 19°C @ 50W<br>75°C @ 250W           | 0.15°C/W @ 250 LFM<br>0.10°C/W @ 500 LFM | 6.1400 (2785.10)    |

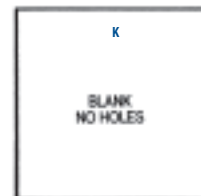
These two heat sink types accept industry standard 1.750 in. (44.5) hex-type devices for mounting and efficient heat dissipation. Each type is provided with a 1.750 in. (44.5) x 2.000

in. (50.8) area on the semiconductor base mounting surface which is free of anodize. Material: Aluminum Alloy, Black Anodized.

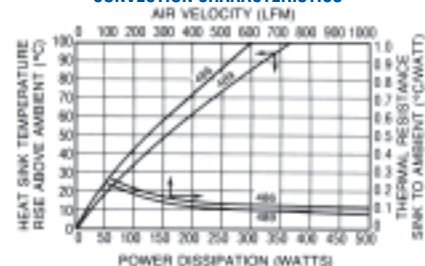
## MECHANICAL DIMENSIONS



## SEMICONDUCTOR MOUNTING HOLE



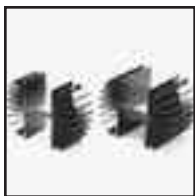
## NATURAL AND FORCED CONVECTION CHARACTERISTICS



**486 AND 489 SERIES (EX-  
TRUSION  
PROFILE 1541)**

**Dimensions: in. (mm)**

## EXTRUDED HEAT SINKS FOR POWER SEMICONDUCTORS



## 490 SERIES

## King Size Heat Sinks for High-Power Rectifiers

### GENERAL PURPOSE

| Standard<br>P/N | Nominal Dimensions |                        |                    | Semiconductor<br>Mounting Hole Pattern | Thermal Performance at Typical Load |                    | Weight<br>lbs. (grams) |
|-----------------|--------------------|------------------------|--------------------|----------------------------------------|-------------------------------------|--------------------|------------------------|
|                 | Width<br>in. (mm)  | Length "A"<br>in. (mm) | Height<br>in. (mm) |                                        | Natural Convection                  | Forced Convection  |                        |
| 490-35K         | 9.250 (235.0)      | 3.500 (88.9)           | 6.750 (171.5)      | None                                   | 84°C @ 200W                         | 0.18°C/W @ 600 LFM | 3.2400 (1469.66)       |
| 490-6K          | 9.250 (235.0)      | 6.000 (152.4)          | 6.750 (171.5)      | None                                   | 60°C @ 200W                         | 0.13°C/W @ 600 LFM | 5.4700 (2481.19)       |
| 490-12K         | 9.250 (235.0)      | 12.000 (304.8)         | 6.750 (171.5)      | None                                   | 45°C @ 200W                         | 0.09°C/W @ 600 LFM | 10.6200 (4817.23)      |

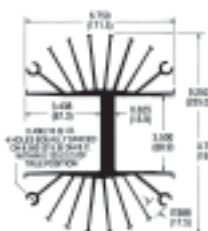
The 490 Series can be used to mount a single high-power rectifier or a grouping of smaller power devices. The semiconductor device mounting surface is free of anodize on the entire surface on one side only; finish overall is black anodize. Use Type 109 mounting brackets (see accessories section) for mounting to enclosure wall and for electrical isolation. The anodize-

free mounting surface is milled for maximum contact area. The 490 Series Can also be drilled for mounting and cooling IGBTs and other isolated power modules. Material: Aluminum Alloy, Black Anodized.

## MECHANICAL DIMENSIONS

**490 SERIES**  
**(EXTRUSION PROFILE 2131)**

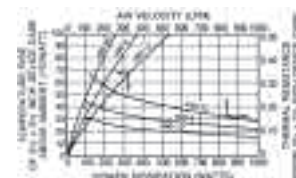
Dimensions: in. (mm)



## SEMICONDUCTOR MOUNTING HOLE



## NATURAL AND FORCED CONVECTION CHARACTERISTICS



**PERFORMANCE. LOW PROFILE HEAT SINKS FOR POWER MODULES & IGBT'S**



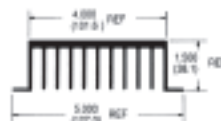
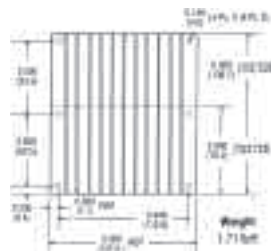
## 394, 395, 396 SERIES

| Standard P/N | Overall Dimensions: in. (mm) |                 |                | Device Base Mounting Area (mm) | Base Mounting Holes | Thermal Resistance at Typical Load                         |                                                      |
|--------------|------------------------------|-----------------|----------------|--------------------------------|---------------------|------------------------------------------------------------|------------------------------------------------------|
|              | Length in. (mm)              | Height in. (mm) | Width in. (mm) |                                |                     | Natural Convection ( $\theta_{sa}$ ) <sup>(1)</sup> (°C/W) | Forced Convection ( $\theta_{sa}$ ) (°C/W @ 500 LFM) |
| 394-1AB      | 3.000 (76.2)                 | 1.500 (38.1)    | 5.000 (127.0)  | 101 x 76                       | 4                   | 1.85                                                       | 0.90                                                 |
| 394-2AB      | 5.500 (139.7)                | 1.500 (38.1)    | 5.000 (127.0)  | 101 x 139                      | 6                   | 1.51                                                       | 0.60                                                 |
| 395-1AB      | 3.000 (76.2)                 | 2.500 (63.5)    | 5.000 (127.0)  | 50 x 76                        | 4                   | 1.10                                                       | 0.50                                                 |
| 395-2AB      | 5.500 (139.7)                | 2.500 (63.5)    | 5.000 (127.0)  | 50 x 139                       | 6                   | 0.90                                                       | 0.32                                                 |
| 396-1AB      | 3.000 (76.2)                 | 1.380 (35.1)    | 5.000 (127.0)  | 50 x 76                        | 4                   | 1.85                                                       | 1.07                                                 |
| 396-2AB      | 5.500 (139.7)                | 1.380 (35.1)    | 5.000 (127.0)  | 50 x 139                       | 6                   | 1.51                                                       | 0.64                                                 |

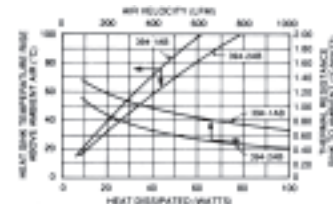
**Note:** 1. Thermal resistance values shown are for black anodized finish at 50°C rise above ambient.

## MECHANICAL DIMENSIONS

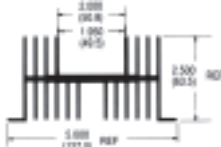
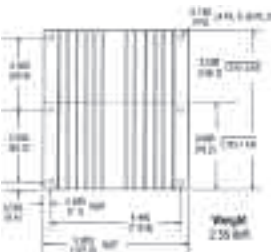
### 394 SERIES (EXTRUSION PROFILE 7332)



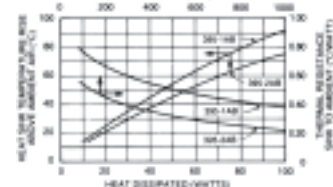
## NATURAL AND FORCED CONVECTION CHARACTERISTICS



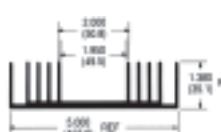
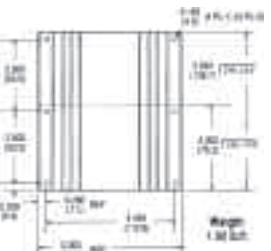
### 395 SERIES (EXTRUSION PROFILE 7330)



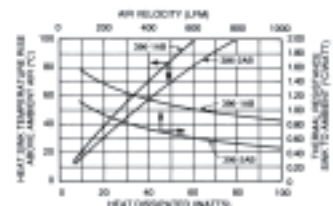
## NATURAL AND FORCED CONVECTION CHARACTERISTICS



### 396 SERIES (EXTRUSION PROFILE 7331)

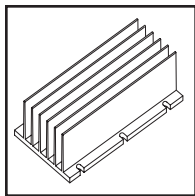


## NATURAL AND FORCED CONVECTION CHARACTERISTICS



**Dimensions: in. (mm)**

## EXTRUDED HEAT SINKS FOR DC/DC CONVERTERS



### SERIES 557, 558 & 559

Heat Sinks for "Full-Brick" DC/DC Converters

| Standard P/N | Footprint Dimensions in. (mm) | Height in. (mm) | Fin Orientation | Number of Fins | Forced Convection Thermal Resistance at 300 ft/min (C/W) | Natural Convection Power Dissipation (Watts) 40°C Rise Heat Sink to Ambient |
|--------------|-------------------------------|-----------------|-----------------|----------------|----------------------------------------------------------|-----------------------------------------------------------------------------|
| 557-140AB    | 4.60 (116.8) x 2.40 (61.0)    | 1.40 (35.6)     | Horizontal      | 6              | 1.3                                                      | 14                                                                          |
| 558-75AB     | 2.40 (61.0) x 4.60 (116.8)    | 0.75 (19.1)     | Vertical        | 16             | 1.8                                                      | 12                                                                          |
| 559-50AB     | 2.40 (61.0) x 4.60 (116.8)    | 0.50 (12.7)     | Vertical        | 27             | 2.2                                                      | 10                                                                          |

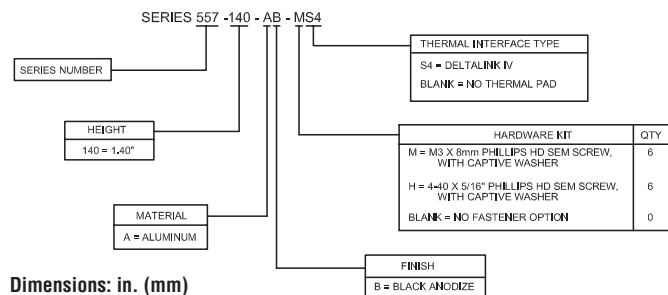
Material: Aluminum, Black Anodized

• Standard mounting hole pattern mates with Vicor DC/DC converters. • Aluminum extruded fin construction keeps DC/DC converter modules cool in both forced and natural convection applications. • Three fin heights, two flow direction options. • Black anodized finish standard.

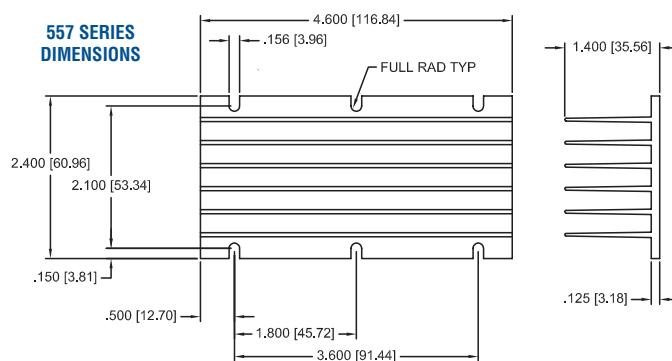
• Integral thermal interface pad option eliminates need to order and install pad separately. • Ordering a single part number with the hardware kit option provides everything necessary to keep your converter cool.

### MECHANICAL DIMENSIONS

#### PRODUCT DESIGNATION

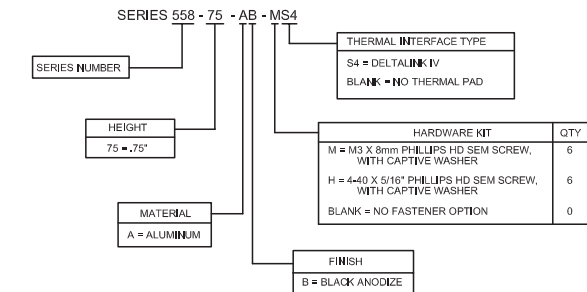


#### 557 SERIES DIMENSIONS

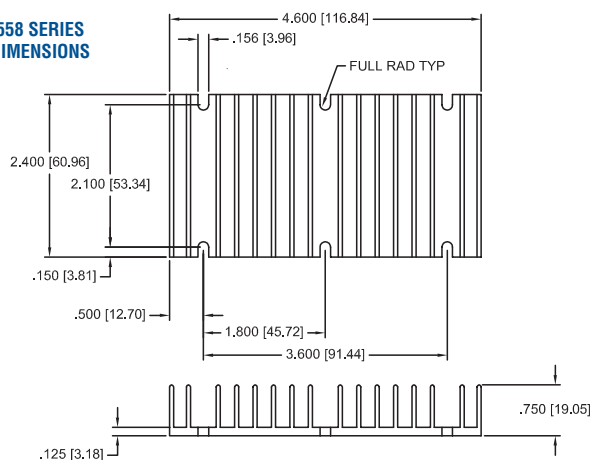


### MECHANICAL DIMENSIONS

#### PRODUCT DESIGNATION

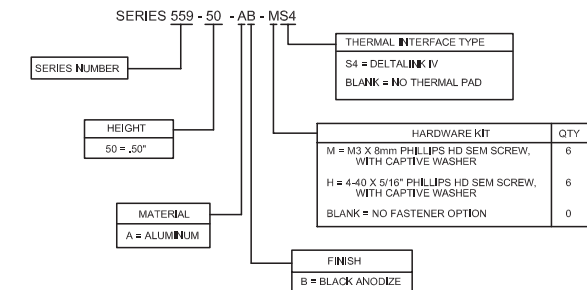


#### 558 SERIES DIMENSIONS

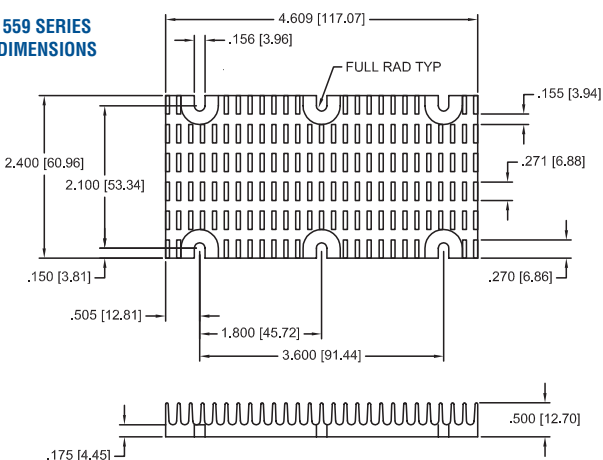


### MECHANICAL DIMENSIONS

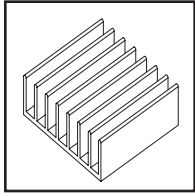
#### PRODUCT DESIGNATION



#### 559 SERIES DIMENSIONS



## EXTRUDED HEAT SINKS FOR DC/DC CONVERTERS



### SERIES 517, 527, 518 & 528

Heat Sinks for "Half-Brick" DC/DC Converters

| Standard P/N | Footprint Dimensions in. (mm) | Height in. (mm) | Fin Orientation | Number of Fins | THERMAL PERFORMANCE                                                         |                                                          |
|--------------|-------------------------------|-----------------|-----------------|----------------|-----------------------------------------------------------------------------|----------------------------------------------------------|
|              |                               |                 |                 |                | Natural Convection Power Dissipation (Watts) 60°C Rise Heat Sink to Ambient | Forced Convection Thermal Resistance at 300 ft/min (C/W) |
| 517-95AB     | 2.28 (57.9) x 2.40 (61.0)     | 0.95 (24.1)     | Horizontal      | 8              | 11W                                                                         | 2.0                                                      |
| 527-45AB     | 2.28 (57.9) x 2.40 (61.0)     | 0.45 (11.4)     | Horizontal      | 11             | 7W                                                                          | 3.2                                                      |
| 527-24AB     | 2.28 (57.9) x 2.40 (61.0)     | 0.24 (6.1)      | Horizontal      | 11             | 5W                                                                          | 5.8                                                      |
| 518-95AB     | 2.40 (61.0) x 2.28 (57.9)     | 0.95 (24.1)     | Vertical        | 8              | 11W                                                                         | 2.0                                                      |
| 528-45AB     | 2.40 (61.0) x 2.28 (57.9)     | 0.45 (11.4)     | Vertical        | 11             | 7W                                                                          | 3.2                                                      |
| 528-24AB     | 2.40 (61.0) x 2.28 (57.9)     | 0.24 (6.1)      | Vertical        | 11             | 5W                                                                          | 5.8                                                      |

Material: Aluminum, Black Anodized

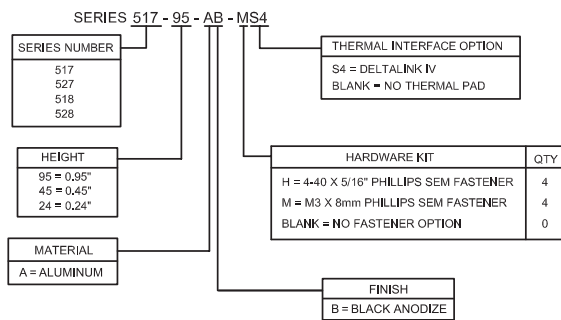
• Standard mounting hole patterns mate with the majority of "half-brick" DC/DC converters on the market. • Aluminum extruded fin construction keeps DC/DC converter modules cool in both forced and natural convection applications. • Vertical and horizontal fin configurations

available in a variety of heights. • Black anodized finish standard. • Integral thermal interface pad option eliminates need to order and install pad separately. • Ordering a single part number with the hardware kit option provides everything necessary to keep your converter cool.

### MECHANICAL DIMENSIONS

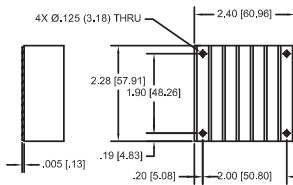
#### 517, 527, 518 AND 528 SERIES

##### PRODUCT DESIGNATION

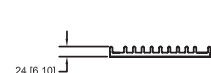
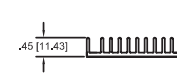
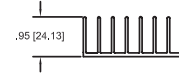
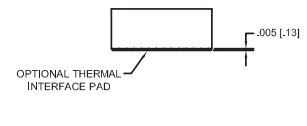
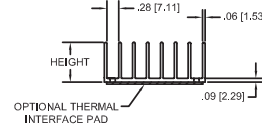
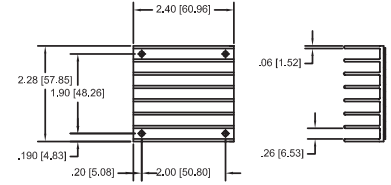


Dimensions: in. (mm)

#### 517/527 SERIES DIMENSIONS



#### 518/528 SERIES DIMENSIONS



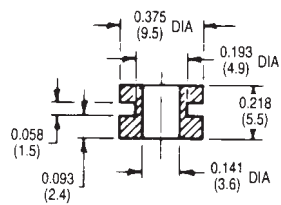
## MOUNTING HARDWARE FOR EXTRUDED HEAT SINKS

### 100 SERIES

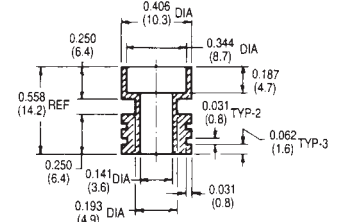
Teflon Mounting Insulators

| Standard P/N | Description            | For Use with Series     | Mounting Hardware | Material | Hipot Rating (VAC) | Weight lbs. (grams) |
|--------------|------------------------|-------------------------|-------------------|----------|--------------------|---------------------|
| 103          | Spool-shaped insulator | 300, 400, 600, 111, 113 | #6-32 screw       | Teflon   | 1500               | 0.00012 (0.05)      |
| 107          | Spool-shaped insulator | 300, 400, 600, 111, 113 | #6-32 screw, nut  | Teflon   | 5000               | 0.0034 (1.54)       |

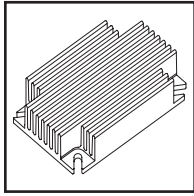
### 103 SERIES



### 107 SERIES



## EXTRUDED HEAT SINKS FOR DC/DC CONVERTERS



### 537 & 547 SERIES

Heat Sinks for "Quarter-Brick" DC/DC Converters

| Standard P/N | Footprint Dimensions in. (mm) | Height in. (mm) | Fin Orientation | Number of Fins | Forced Convection Thermal Resistance at 300 ft/min (C/W) |
|--------------|-------------------------------|-----------------|-----------------|----------------|----------------------------------------------------------|
| 537-95AB     | 2.28 (57.9) x 1.45 (36.8)     | 0.95 (24.1)     | Horizontal      | 8              | 2.1                                                      |
| 537-45AB     | 2.28 (57.9) x 1.45 (36.8)     | 0.45 (11.4)     | Horizontal      | 13             | 2.3                                                      |
| 537-24AB     | 2.28 (57.9) x 1.45 (36.8)     | 0.24 (6.1)      | Horizontal      | 14             | 4.2                                                      |
| 547-95AB     | 1.45 (36.8) x 2.28 (57.9)     | 0.95 (24.1)     | Vertical        | 11             | 2.2                                                      |
| 547-45AB     | 1.45 (36.8) x 2.28 (57.9)     | 0.45 (11.4)     | Vertical        | 20             | 2.1                                                      |
| 547-24AB     | 1.45 (36.8) x 2.28 (57.9)     | 0.24 (6.1)      | Vertical        | 22             | 3.5                                                      |

Material: Aluminum, Black Anodized

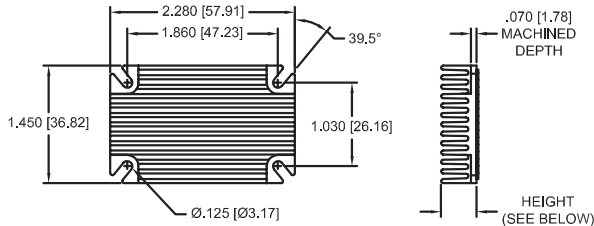
• Mounting slots accommodate two hole patterns: 1.86" x 1.03" and 2.00" x 1.20", fitting the vast majority of quarter-brick converters on the market. • Designed for optimum use in forced convection applications. • Vertical and horizontal fin configurations available in a variety of

heights. • Black anodized finish standard. • Integral thermal interface pad option eliminates need to order and install pad separately. • Ordering a single part number with the hardware kit option provides everything necessary to keep your converter cool.

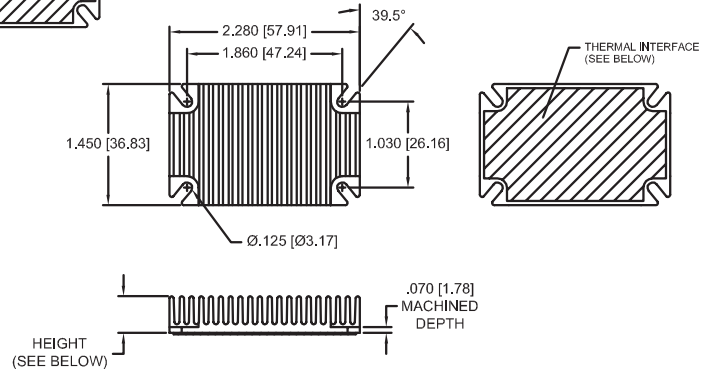
### MECHANICAL DIMENSIONS

#### 537 & 547 SERIES

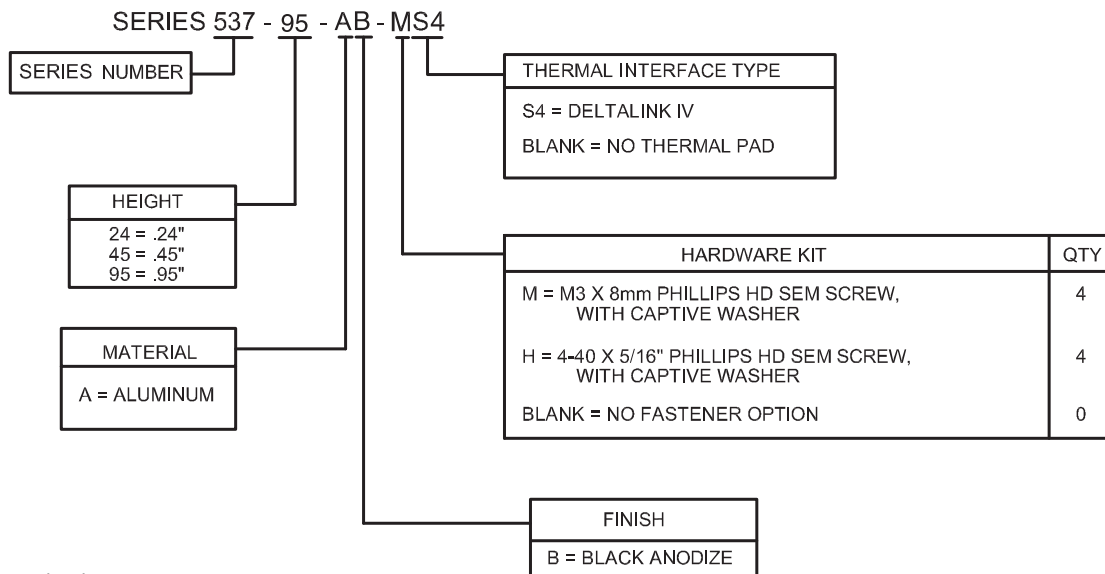
##### 537 SERIES DIMENSIONS



##### 547 SERIES DIMENSIONS



### PRODUCT DESIGNATION



Dimensions: in. (mm)

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

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