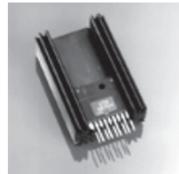


BOARD LEVEL POWER SEMICONDUCTOR HEAT SINKS



677 SERIES

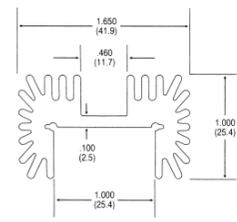
HIGH-PERFORMANCE, HIGH-POWER HEAT SINKS FOR VERTICAL BOARD MOUNTING

TO-218; TO-220; TO-247;
15-Lead Multiwatt

| Standard P/N | Height Above PC Board "A" in. (mm) | Maximum Footprint in. (mm) | Thermal Performance at Typical Load | |
|--------------|------------------------------------|-----------------------------|-------------------------------------|-------------------|
| | | | Natural Convection | Forced Convection |
| 677-10ABEP | 1.000 (25.4) | 1.650 (41.9) x 1.000 (25.4) | 52°C @ 6W | 3.1°C/W @ 200 LFM |
| 677-15ABEP | 1.500 (38.1) | 1.650 (41.9) x 1.000 (25.4) | 46°C @ 6W | 2.8°C/W @ 200 LFM |
| 677-20ABEP | 2.000 (50.8) | 1.650 (41.9) x 1.000 (25.4) | 40°C @ 6W | 2.5°C/W @ 200 LFM |
| 677-25ABEP | 2.500 (63.5) | 1.650 (41.9) x 1.000 (25.4) | 35°C @ 6W | 2.2°C/W @ 200 LFM |

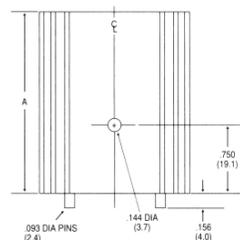
Wave-solderable pins. Material: Aluminum, Black Anodized

MECHANICAL DIMENSIONS

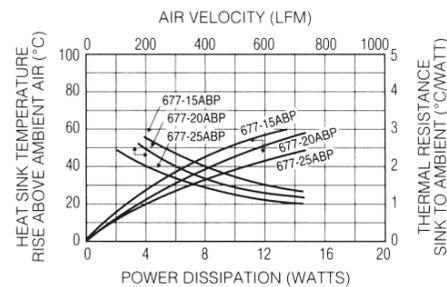


Dimensions: in. (mm)

677 SERIES
(EXTRUSION PROFILE 8719)



NATURAL AND FORCED CONVECTION CHARACTERISTICS



TO-3; TO-66; TO-220

HIGHEST EFFICIENCY/LOWEST UNIT COST HEAT SINKS

690 SERIES

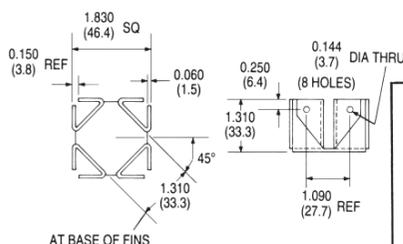


These low-cost heat sinks provide the most power dissipation at the lowest unit cost and are available in three standard types to mount and cool one TO-3 or TO-66 metal power semiconductor type or two plastic package TO-220 power semiconductor types. For higher power semiconductors, the 690 Series can dissipate up to 20 watts while maintaining a mounting surface temperature rise above ambient air temperature of no more than 91°C.

| Standard P/N | Height Above PC Board in. (mm) | Outline Dimensions in. (mm) | Thermal Performance at Typical Load | | Semiconductor Mounting Hole Pattern | Weight lbs. (grams) |
|--------------|--------------------------------|-----------------------------|-------------------------------------|-------------------|-------------------------------------|---------------------|
| | | | Natural Convection | Forced Convection | | |
| 690-3B | 1.310 (33.3) | 1.860 (47.2)-sq | 44°C @ 7.5W | 2.0°C/W @ 400 LFM | (1) TO-3 | 0.0700 (31.75) |
| 690-66B | 1.310 (33.3) | 1.860 (47.2)-sq | 44°C @ 7.5W | 2.0°C/W @ 400 LFM | (1) TO-66 | 0.0700 (31.75) |
| 690-220B | 1.310 (33.3) | 1.860 (47.2)-sq | 44°C @ 7.5W | 2.0°C/W @ 400 LFM | (2) TO-220 | 0.0700 (31.75) |

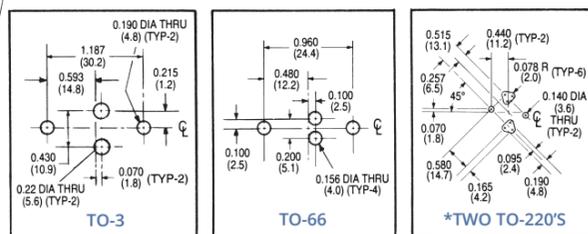
Material: Aluminum, Black Anodized

MECHANICAL DIMENSIONS

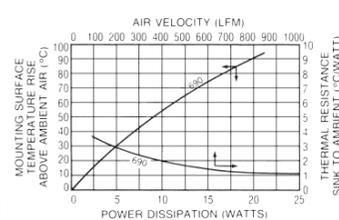


Dimensions: in. (mm)

SEMICONDUCTOR MOUNTING HOLES



NATURAL AND FORCED CONVECTION CHARACTERISTICS



TO-3; TO-220

MAXIMUM EFFICIENCY OMNIDIRECTIONAL HEAT SINKS

680 SERIES

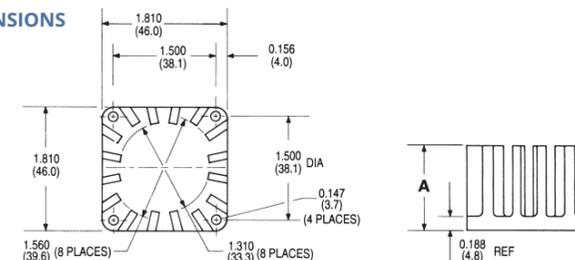


Achieve optimum natural convection cooling per unit volume occupied above the printed circuit board for TO-3 (one semiconductor package per heat sink) or for two TO-220 style cases, when this low-cost heat sink is used. Any mounting attitude will provide free circulation of air in natural convection applications. These 680 Series heat sinks can also be specified without any semiconductor mounting hole pattern by specifying suffix "K" (Example: 680-5K).

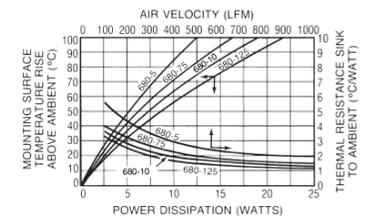
| Standard P/N | Height Above PC Board "A" in. (mm) | Horizontal Mounting Footprint Dimensions in. (mm) | Thermal Performance at Typical Load | | Semiconductor Mounting Hole Pattern | Weight lbs. (grams) |
|--------------|------------------------------------|---|-------------------------------------|-------------------|-------------------------------------|---------------------|
| | | | Natural Convection | Forced Convection | | |
| 680-5A | 0.500 (12.7) | 1.810 (46.0)-sq | 70°C @ 7.5W | 3.0°C/W @ 400 LFM | (1) TO-3 | 0.0700 (31.75) |
| 680-75A | 0.750 (19.1) | 1.810 (46.0)-sq | 58°C @ 7.5W | 2.4°C/W @ 400 LFM | (1) TO-3 | 0.0900 (40.82) |
| 680-10A | 1.000 (25.4) | 1.810 (46.0)-sq | 52°C @ 7.5W | 2.0°C/W @ 400 LFM | (1) TO-3 | 0.0980 (44.45) |
| 680-125A | 1.250 (31.8) | 1.810 (46.0)-sq | 45°C @ 7.5W | 1.5°C/W @ 400 LFM | (1) TO-3 | 0.1100 (49.90) |
| 680-5220 | 0.500 (12.7) | 1.810 (46.0)-sq | 70°C @ 7.5W | 3.0°C/W @ 400 LFM | (2) TO-220 | 0.0700 (31.75) |
| 680-75220 | 0.750 (19.1) | 1.810 (46.0)-sq | 58°C @ 7.5W | 2.4°C/W @ 400 LFM | (2) TO-220 | 0.0900 (40.82) |
| 680-10220 | 1.000 (25.4) | 1.810 (46.0)-sq | 52°C @ 7.5W | 2.0°C/W @ 400 LFM | (2) TO-220 | 0.0980 (44.45) |
| 680-125220 | 1.250 (31.8) | 1.810 (46.0)-sq | 45°C @ 7.5W | 1.5°C/W @ 400 LFM | (2) TO-220 | 0.1100 (49.90) |

Material: Aluminum, Black Anodized

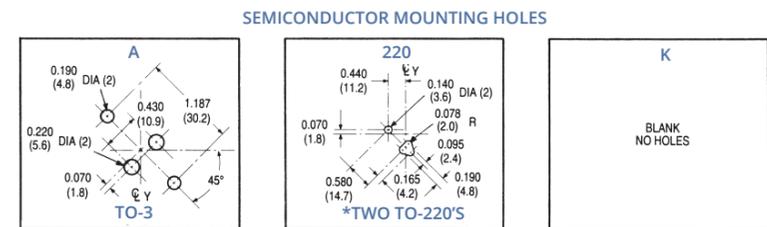
MECHANICAL DIMENSIONS



NATURAL AND FORCED CONVECTION CHARACTERISTICS



Dimensions: in. (mm)



*Only one hole pattern of two is shown. Hole patterns are symmetrical about the center lines.



601 & 603 SERIES

LOW-HEIGHT HEAT SINKS

DO-4/DO-5 Diodes

Use these low-height heat sinks on printed circuit board applications for TO-66 power semiconductors and DO-4 and DO-5 diodes, where close board-to-board spacing and efficient heat dissipation are required. The 601 and 603 Series may also be attached to enclosure panels or brackets using isolation hardware where necessary.

| Standard P/N | Footprint Dimensions in. (mm) | Height in. (mm) | Mounting Hole Dia. in. (mm) | Thermal Performance at Typical Load | | Weight lbs. (grams) |
|--------------|-------------------------------|-----------------|-----------------------------|-------------------------------------|-------------------|---------------------|
| | | | | Natural Convection | Forced Convection | |
| 601E | 2.000 (50.8) x 1.250 (31.8) | 0.562 (14.3) | 0.200 (5.1) | 52°C @ 5.0W | 4.5°C/W @ 175 LFM | 0.0500 (22.68) |
| 601F | 2.000 (50.8) x 1.250 (31.8) | 0.562 (14.3) | 0.270 (6.9) | 52°C @ 5.0W | 4.5°C/W @ 175 LFM | 0.0500 (22.68) |
| 601K | 2.000 (50.8) x 1.250 (31.8) | 0.562 (14.3) | None | 52°C @ 5.0W | 4.5°C/W @ 175 LFM | 0.0500 (22.68) |
| 603K | 2.000 (50.8) x 2.000 (50.8) | 0.562 (14.3) | None | 41°C @ 5.0W | 4.0°C/W @ 175 LFM | 0.0810 (36.74) |

Material: Aluminum Alloy, Black Anodized