

## BGA HEAT SINK GUIDE - POWER LESS THAN 5 WATTS

Aavid's family of BGA heat sinks offers a wide range of cooling solutions for motherboard, video card, and networking applications. Aavid's Push-Pin™ attachment, available on many of the heat sinks, uses a standard 3.12 mm diameter hole pattern, allowing accommodation of future cooling requirements without board redesign. Plastic pins provide low-cost attachment, while brass pins provide higher reliability in extreme conditions.

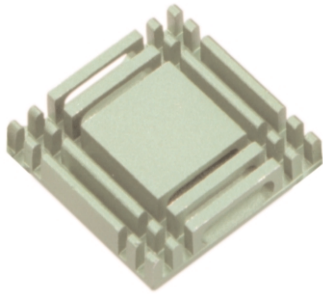
### ORDERING INFORMATION

Use the 6 digit part number in the upper left hand corner for ordering.

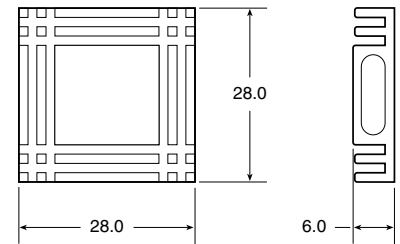
Thermal resistance is calculated at .25 m/s of airflow and does not include the interface. Due to various heat dissipation paths within a BGA device, please test our heat sink in your application.

For different interface material, fan options, color, or clipping variations, please contact your local application engineer.

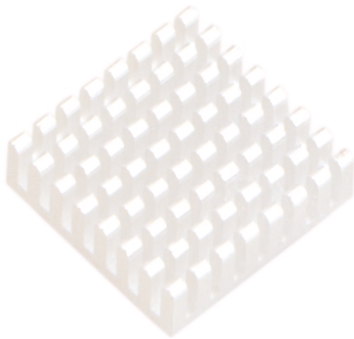
### PART NUMBER 028095 (373224M00000)



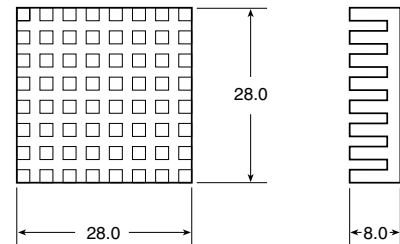
- 28 mm x 28 mm x 6 mm
- Use with epoxy attachment
- 15.2°C/W performance
- Green anodized finish



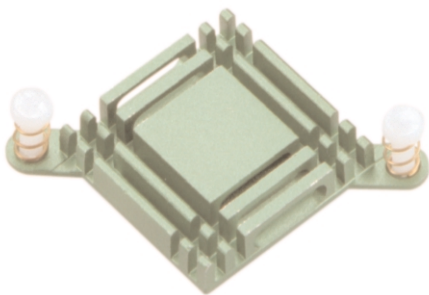
### PART NUMBER 031612 (IBAA-2)



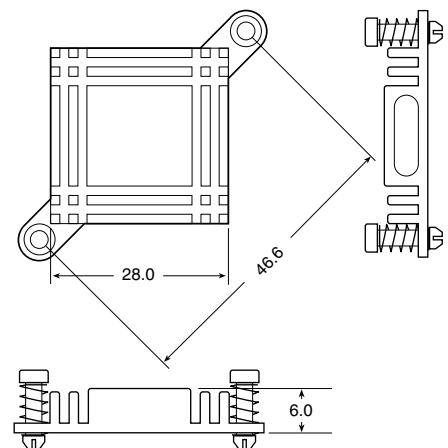
- 28 mm x 28 mm x 8 mm
- Use with epoxy attachment
- 13.5°C/W performance
- Wash finish



### PART NUMBER 030948 (10-6326-27) PLASTIC PUSH-PINS 030949 (10-6326-28) BRASS PUSH-PINS

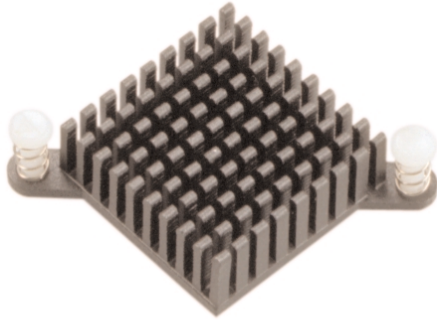


- 28 mm x 28 mm x 6 mm
- Push-Pin attachment
- 15.0°C/W performance
- Pre-applied phase-change interface material
- Black anodized finish

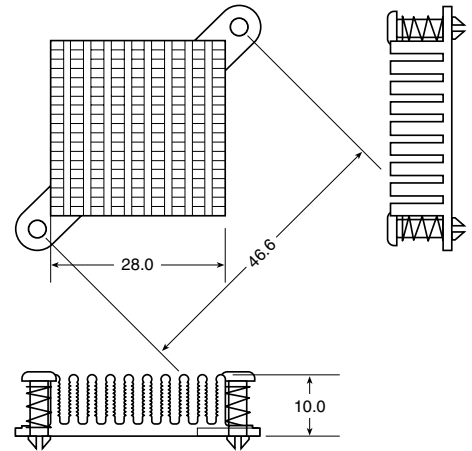


# BGA HEAT SINK GUIDE - POWER LESS THAN 8 WATTS

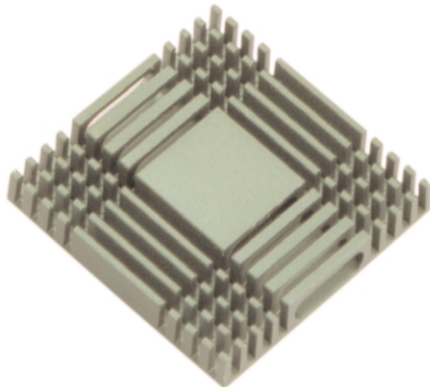
## PART NUMBER 031609 (10-6327-01) PLASTIC PUSH-PINS



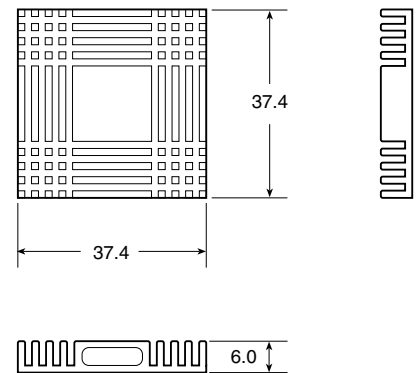
- 28 mm x 28 mm x 10 mm
- Push-Pin attachment
- 12.4°C/W performance
- Black anodized finish



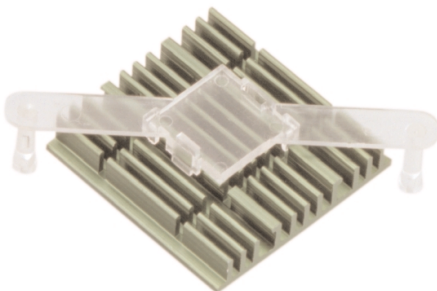
## PART NUMBER 031611 (10-5571-02) DOUBLE-SIDED TAPE 028096 (373324M0000) NO INTERFACE FOR EPOXY ATTACHMENT



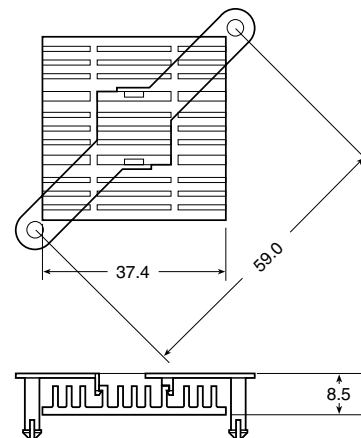
- 37.4 mm x 37.4mm x 6 mm
- 11.2°C/W performance
- Green anodized finish



## PART NUMBER 031610 (10-5610-02)

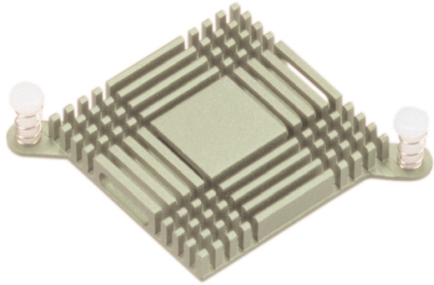


- 37.4mm x 37.4mm x 8.5 mm
- Unique clip attachment
- 11.2 °C/W performance
- Green anodized finish

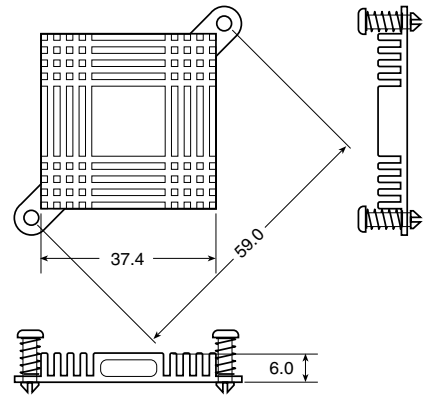


## BGA HEAT SINK GUIDE - POWER LESS THAN 10 WATTS

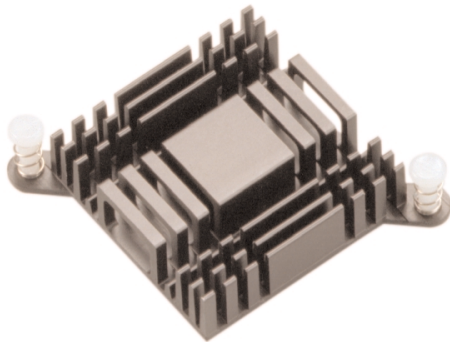
**PART NUMBER 031613 (10-5597-02) PLASTIC PUSH-PIN, NO INTERFACE MATERIAL APPLIED**  
**031614 (10-5597-22) PLASTIC PUSH-PIN, PHASE-CHANGE INTERFACE APPLIED**  
**031615 (10-5597-33) BRASS PUSH-PIN, PHASE-CHANGE INTERFACE APPLIED**



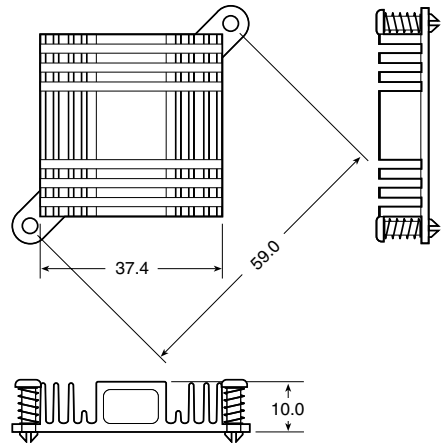
- 37.4 mm x 37.4 mm x 6 mm
- Push-Pin attachment
- 11.0°C/W performance
- 031613 has green anodized finish
- 031614 and 031615 have gold anodized finishes



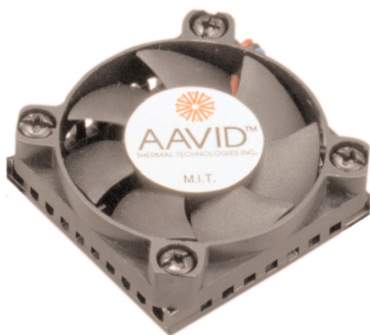
**PART NUMBER 030818 (10-5607-04) PLASTIC PUSH-PIN**  
**030819 (10-5607-05) BRASS PUSH-PIN**



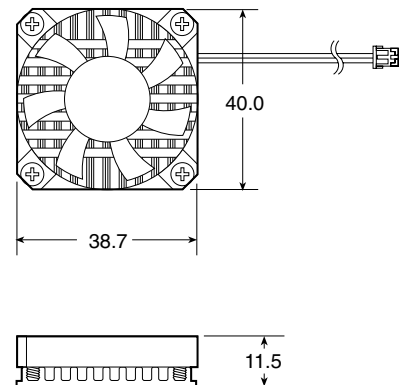
- 37.4 mm x 37.4 mm x 10 mm
- 9.7°C/W performance
- Black anodized finish
- Phase-change interface material: 28 mm x 28 mm



**PART NUMBER 031746 SINGLE-BALL FAN, DOUBLE-SIDED TAPE**



- 40 mm x 40 mm x 11.5 mm
- 5-Volt, 40 mm x 40 mm x 7 mm DC fan
- 3-Pin connector: 1-red(+), 2-black(-), 3-sensor
- Sensor provides two pulses per revolution
- 3.8°C/W performance
- Black anodized finish



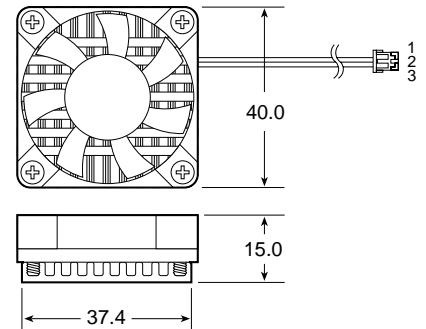
Note: All Aavid fans can be customized to your application. Customizable features include: fan wiring, fan speed, sensor options, bearing style, voltage, connector type, etc. Contact your local application engineer for information.

## BGA HEAT SINK GUIDE - POWER LESS THAN 15 WATTS

### PART NUMBER 031608 (11-5602-48) SINGLE-BALL FAN 031607 (11-5602-47) DUAL-BALL FAN



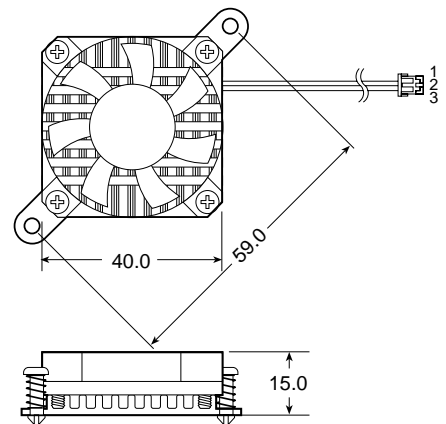
- 40 mm x 40 mm x 15 mm
- 5-Volt, 40 mm x 40 mm x 10 mm DC fan
- 3-pin Molex connector:  
1-red(+), 2-black(-), 3-sensor
- 1-black(-), 2-red(+), 3-sensor
- 3.5°C/W performance
- Black anodized finish



### PART NUMBER 031606 (11-5602-46) SINGLE-BALL FAN 031605 (11-5602-45) DUAL-BALL FAN



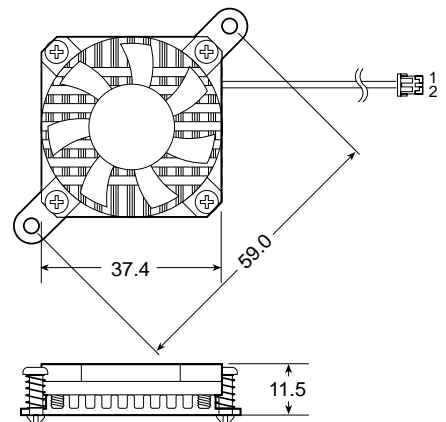
- Plastic Push-Pin
- 40 mm x 40 mm x 15.0 mm
- 5 Volt 40 mm x 40 mm x 10 mm DC fan
- 3-pin Molex connector:  
1-black(-), 2-red(+), 3-sensor
- Sensor is two pulses per revolution
- 3.4°C/W performance
- Black anodized finish



### PART NUMBER 031660 (11-5602-50) PLASTIC PUSH-PIN 031661 (11-5602-51) BRASS PUSH-PIN

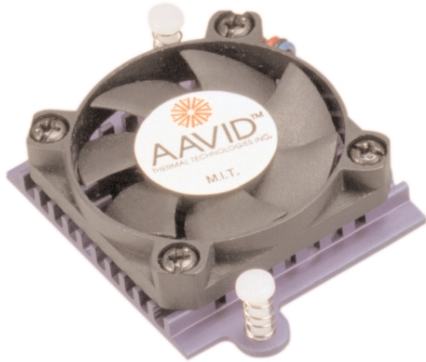


- One ball bearing
- 40 mm x 40 mm x 11.5 mm
- 12 Volt DC fan
- 2-pin Molex connector:  
1-red(+), 2-black(-)
- Phase-change interface material
- 3.7°C/W performance
- Black anodized finish

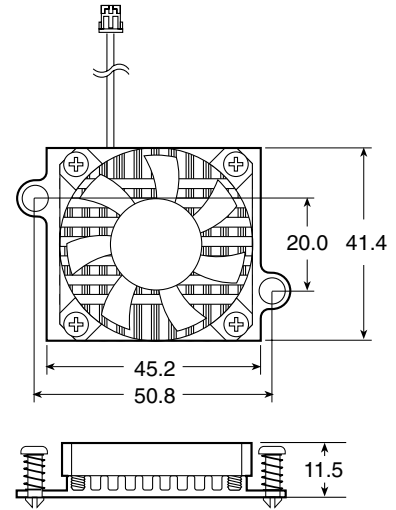


# BGA HEAT SINK GUIDE - POWER LESS THAN 15 WATTS

## PART NUMBER 031659 (11-5608-13) PLASTIC PUSH-PIN 031658 (11-5608-07) BRASS PUSH-PIN



- 40 mm x 40 mm x 11.5 mm
- 12 Volt, 40 mm x 40 mm x 7 mm DC fan
- 3-pin Molex connector:  
1-red(+), 2-black(-), 3-sensor
- Sensor provides two pulses per revolution
- 3.5 °C/W performance
- Black anodized finish



Note: Aavid has several passive heat sinks using this alternate Push-Pin hole pattern. Contact your local application engineer for information.



This data sheet represents only one of a broad range of products we make to cool electronics. Our representatives can help you configure a complete cooling solution for your individual applications. For assistance, contact any one of them from our web site or at the locations below.

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visit our web site at: <http://www.aavid.com>; TEL: (603) 224-9988,

or contact Fluent at: <http://www.icepak.com>; TEL: (603) 643-2600, or Applied at: <http://www.thermalcooling.com>; TEL: (603) 666-4100.

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**local sales representative:** <http://www.aavid.com/rep/index.html>

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**Corporate Office - Aavid USA:** 143 N. Main Street, Concord, NH 03301 TEL: (603) 224-9988 FAX: (603) 223-1738

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**Aavid Taiwan/Japan:** 3F, No. 25, Lane 228, AnKang Road, NeiHu, Taipei • 114 Taiwan R.O.C. • TEL: (886) 22-793-5677 • FAX: (886) 22-793-3460

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