

# Mod5 Series 0.50mm Pitch Flip-Top™ BGA Socket

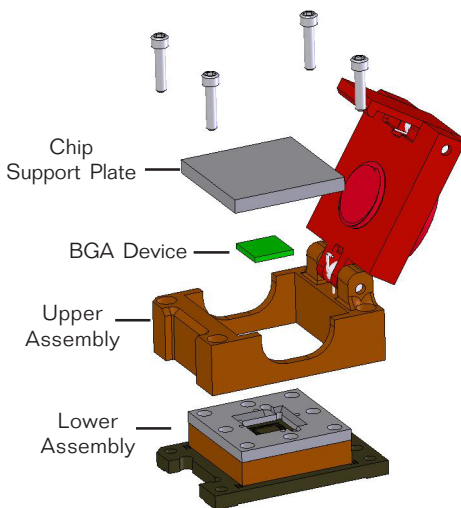


[www.advanced.com](http://www.advanced.com)

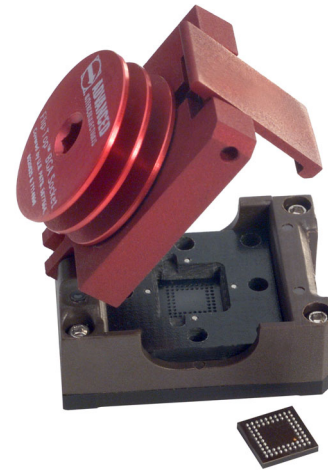
The new Mod5 Series Flip-Top™ BGA Socket is designed for test, debug, and validation of 0.50mm pitch BGA devices. The compact, surface mount design requires no tooling or mounting holes in the target PC board, maximizing real estate while reducing board costs.

The new Mod5 Series provides a compact, surface mount test solution for micro-BGA chipsets used in applications such as handheld, mobile, and wireless product development. Precision machined spring probes with industry proven solder balls ensure high reliability performance.

## How It Works



- ▶ Solder **lower assembly** to PC board
- ▶ Attach **upper assembly** using four supplied screws.
- ▶ Insert **BGA device** by hand or with the aid of a vacuum pen (recommended).
- ▶ Place device-specific **chip support plate** (supplied) over device, close lid, and screw down heat sink actuator for device engagement.



## TYPICAL APPLICATIONS

- Test, validation, and debug of 0.50mm pitch BGA devices
- System and wafer test
- Package and chip qualification
- Failure analysis
- Production prototype

## Features

- Model shown accommodates BGA packages up to 12mm sq. (22 x 22 rows) – larger sizes available upon request
- Precision machined spring probes offer high bandwidth with very low insertion loss
- Compact size (small keepout zone) enables use on existing board layouts
- Flip-Top BGA Socket's easy actuation with simple cover and turn-screw heat sink enables quick insertion and extraction
- SMT design eliminates the cost of hardware and mounting holes and their associated interference with traces on the PCB
- Modular design of lower assembly enables simple reflow process, similar to BGA device
- Metallic probes offer proven reliability over elastomeric sockets and long-life (spring probe contact system life is 200,000 cycles minimum)
- Additional mounting options and custom designs available



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## Performance

### Durability

Actuation cycles: 500 minimum

### Current Carrying Capacity

2.8 Amps Max.

### Probe Contact Force

18 g (per position)

### Probe Contact Resistance

80 mOhms

### Return Loss\*

Differential	Single-Ended
-10db @ 2.6 GHz	-10db @ 8.0 GHz
-15db @ 1.3 GHz	-15db @ 3.5 GHz

### Insertion Loss\*

Differential	Single-Ended
-0.6db @ 2.6 GHz	-2.1db @ 8.0 GHz
-0.2db @ 1.3 GHz	-0.9db @ 3.5 GHz

\*Complete SI Simulation Report  
available online

## Specifications

### For Device Packages up to 12mm Square

#### Body Size

0.79/(20mm) W x 1.06/(27mm) L

#### Height

0.68/(17.4mm)\* approx. (\*will vary based on  
reflow profile, paste volume, etc.)

### Guide Box

High Temp. Glass Filled Thermoplastic (PPS)  
Screws: 18-8 Stainless Steel

### Base Socket

FR-4 Glass Epoxy, U.L. Rated 94V-0

### Lid, Latch, Heat Sink, and Support Plate

Anodized Aluminum

### Spring Probe Terminals

Crown-point Plunger: Tool Steel, Gold Plated  
Spring: Stainless Steel, Gold Plated  
Terminal: Brass (C36000), Gold Plated

### Solder Ball (Board Interface)

RoHS Compliant (Lead-free):  
96.5Sn/3.0Ag/0.5Cu (SAC305)

Not RoHS (Tin/Lead):  
63Sn/37Pb

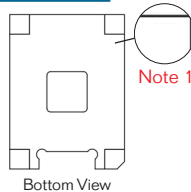
### Continuous Operating Temperature Range

-40°C to 140°C (-40°F to 284°F)

## Table of Models

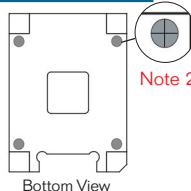
### MOUNTING OPTIONS

#### SMT Standard



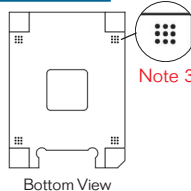
Bottom View

#### SMT/Screw Mount



Bottom View

#### SMT Plus



Bottom View

### MOUNTING/TERMINAL TYPE DESIGNATION

#### Terminal Type -860

Sn/Ag/Cu Solder Ball

#### Terminal Type -861

Sn/Pb Solder Ball

■ **Note 1:** See Application Spec.  
for recommended adhesive  
(epoxy) instructions\*

#### Terminal Type -864

Sn/Ag/Cu Solder Ball

#### Terminal Type -865

Sn/Pb Solder Ball

■ **Note 2:** Screws provided for  
additional strain relief when  
needed; reflow still required\*

#### Terminal Type -862

Sn/Ag/Cu Solder Ball

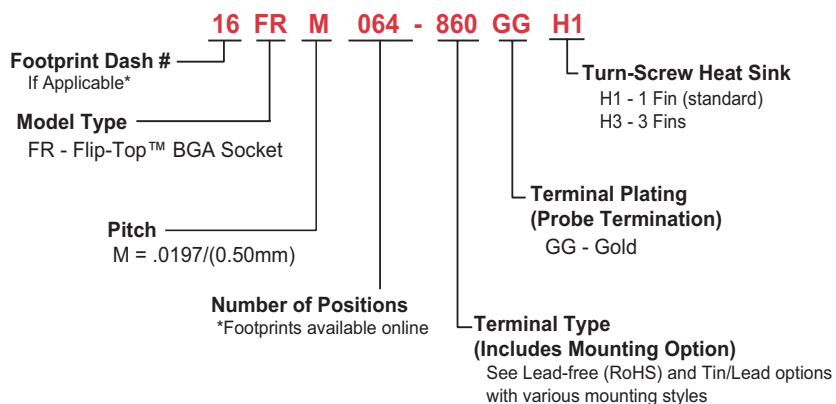
#### Terminal Type -863

Sn/Pb Solder Ball

■ **Note 3:** Additional solder balls  
provided for strain relief in low  
pin count SMT applications\*

\*See product Application Specification for complete mounting details.

## How To Order



- 4-point crown tip spring probes accurately align device solder balls, leaving only minimal witness marks to preserve the solder ball integrity
- Visit [www.bgasockets.com](http://www.bgasockets.com) to select a footprint or submit your device mechanical specifications to [info@advanced.com](mailto:info@advanced.com)
- Device mechanical specifications are required prior to ordering to ensure accuracy of device-specific chip support plate
- Sockets are packaged in foam-lined cartons