

0.50mm and 0.65mm Pitch BGA Socket Adapter System

www.advanced.com

This new BGA Socket Adapter System from Advanced is a breakthrough in fine pitch socket technology. The patented design alternates male and female pins in an interstitial pattern – offering the reliability of screw-machined terminals with multi-finger contacts in a compact SMT socket.

At only 2.00mm larger than the device package, this compact design is perfect for development and validation of BGA and LGA devices, production level socketing, and SMT board to board connector applications.

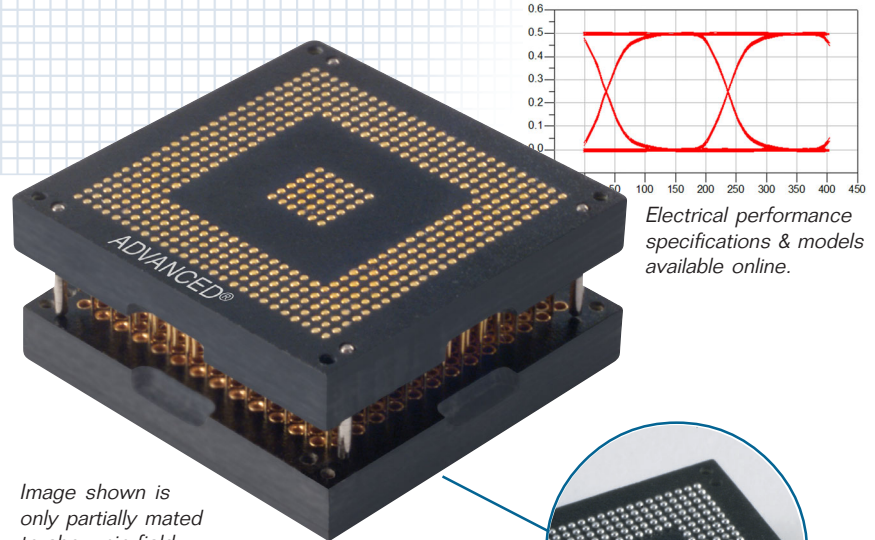
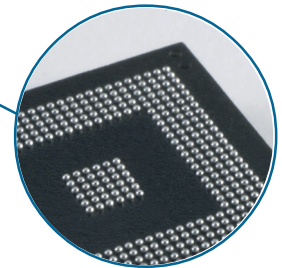


Image shown is only partially mated to show pin field.

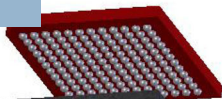
Electrical performance specifications & models available online.



Solder ball terminals for superior SMT processing.

How It Works

DEVICE

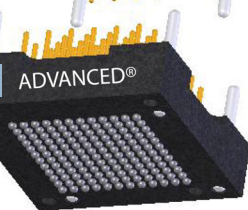


▶ Reflow solder device to Adapter.

ADAPTER



SOCKET



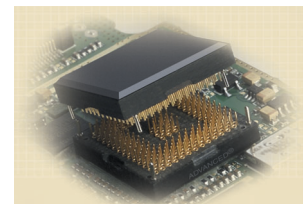
▶ Reflow solder Socket to PC Board.

▶ Adapter matches footprint of BGA/LGA device and plugs into mating socket using unique male/female terminals in an interstitial pattern (patented).

▶ Socket matches footprint of BGA/LGA device. Use alignment pins to align Device/Adapter assembly during insertion into board-mounted Socket.

Features

- Superior electrical performance – very low signal attenuation up to 1.9 GHz for 0.50mm pitch or 3.5 GHz for 0.65mm pitch
- Advanced's field-proven screw-machined terminals with multi-finger contacts, arranged in an interstitial male/female pin pattern are gold plated for gold/gold interconnect
- Small overall size – only 2.00mm larger than device
- Same footprint as device
- No external hold-downs required
- Standard eutectic Tin/Lead or lead-free Tin/Silver/Copper solder ball terminals for RoHS Compliant applications
- Unique alignment pins protect pin field and aid in hand placement with optional stand-offs available
- Sockets and Adapters are provided with protective covers which facilitate automated pick & place
- Available in any 0.50mm or 0.65mm pitch footprint



Small enough for device validation on production-level boards. Shown here in cell phone application.

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Performance

Superior Electrical Performance

Even with adjacent aggressor excitation, our socket system provides a Differential Data path of +/- 175mV @ 100psec and a Single-ended Data path of +/- 125mV @ 140psec.

Patented hybrid design ensures that adjacent terminal electromagnetic coupling is trivial; greatly reducing NeXT & FeXT, while creating a pseudo-matched impedance environment; stabilizing the Insertion & Return Loss response rates.

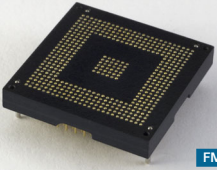

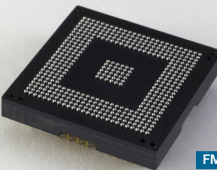

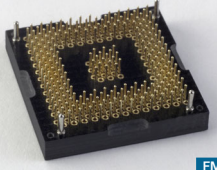

Differential Insertion Loss

Differential Return Loss

| | 0.50mm | 0.65mm |
|-------------------|-------------------|-------------------|
| -0.40dB @ 1.0 GHz | -15.0dB @ 1.0 GHz | -0.25dB @ 3.5 GHz |
| -0.55dB @ 1.9 GHz | -10.0dB @ 1.9 GHz | -14.0dB @ 3.5 GHz |

Additional electrical performance, signal integrity analysis data and models available online.

Table of Models

| STANDARD & SMT ADAPTERS | TERMINAL OPTIONS |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>Adapter (A) with Standard Terminals Mates with Socket (S) for:</p> <ul style="list-style-type: none"> BGA device socketing |  <p>Type -834 Gold plated pad</p> |
|  <p>Adapter (A) with SMT Terminals Mates with Socket (S) for:</p> <ul style="list-style-type: none"> LGA socketing Board to board connector |  <p>Type -833 Sn/Ag/Cu Solder Ball Type -832 Sn/Pb Solder Ball</p> |
| SMT SOCKET | TERMINAL OPTIONS |
|  <p>Socket (S) with SMT Terminals Mates w/either Adapter for:</p> <ul style="list-style-type: none"> BGA/LGA socketing Board to board connector |  <p>Type -833 Sn/Ag/Cu Solder Ball Type -832 Sn/Pb Solder Ball</p> |

Specifications

Body Size

Device + 0.079/(2.00mm)

Mated Height

0.214/(5.44mm)* approx. (*will vary based on reflow profile, paste volume and PC board pad size)

Insertion/Extraction Force

35g avg. Insertion & 30g Withdrawal (per pin)

Insulator

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

Terminal

Brass - Copper Alloy (C36000) ASTM-B-16

Contact

Beryllium Copper (C17200) ASTM-B-194

Solder Ball

0.50mm Pitch: 0.012/(0.30mm) Dia.

0.65mm Pitch: 0.014/(0.36mm) Dia.

Standard: 63Sn/37Pb (not RoHS Compliant)

Lead-free: 95.5Sn/4.0Ag/0.5Cu

Terminal Plating

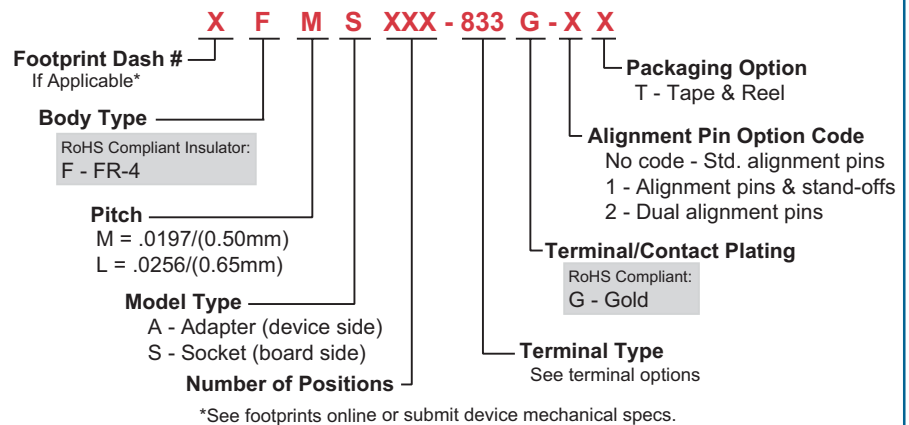
Gold over Nickel

Gold per ASTM-B-488

Nickel per QQ-N-290

Note: Alignment pins are Nickel plated.

How To Order



Note: If no packaging code is indicated, parts are supplied in standard trays.
Both sockets and adapters are supplied with protective covers.
Extraction Tool is available separately; order P/N 8794.

ALIGNMENT PIN OPTIONS

