

SOCKETS - BGA (FPA) FLAT PIN ARRAY

ET's Flat Pin Array (FPA) sockets are a reliable, cost-effective alternative to soldering BGA devices directly to the PCB. These FPAs enable a BGA device to be plugged into a socket matching the BGAs device. The design provides results that are equivalent to direct PCB attach. These FPAs sockets are an integral part of ET's BGA Socketting System.

FEATURES & BENEFITS

- Very low inductance
- Protects valuable PC boards and subjects device to lower thermal stress
- Same footprint as BGA device
- Compact & easy to integrate into designs
- Solder your BGA chip to the FPA for multiple insertions into a surface mount BPE
- Customs available upon request

APPLICATIONS

- Development
- Debug
 - Hand Test
- Programming/Test
 - Qualification
 - Production

BALL PITCH

- 1.27mm, 1.00mm, 0.80mm

GRID SIZES

- 6X8 through 44X44

NOTE: Manufacturer's chip package drawing required with each order.

Emulation Technology Recommends:

Try our Base Pin Extender (BPE)...

to solve your BGA probing needs. Our BPE sockets are an integral part of our BGA Socket & Probing System

Web Link: www.1800adapter.com/123

Try our Extender (XPA) Sockets...

to solve your BGA probing needs. Our XPA sockets are an integral part of our BGA Socket & Probing System

Web Link: www.1800adapter.com/121

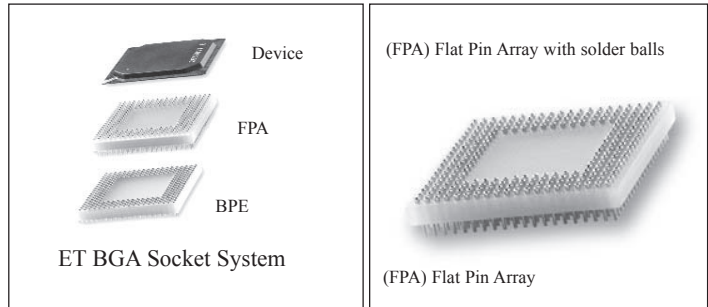
Try our HiLo Flexible Interconnect System

New connector design incorporates the highs, the lows, and the application flexibility your BGA design demands.

Web Link: www.1800adapter.com/124

For a complete list of FPA Socket specifications, pricing and delivery information, please see:

Web Link: www.1800adapter.com/122



Ordering Information Example

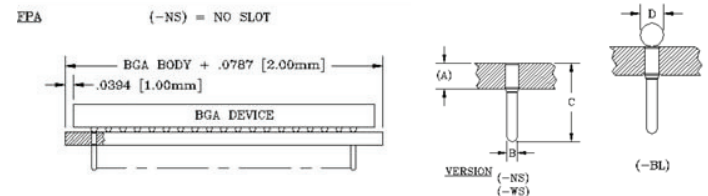
Product Code: FPA-304-2 BG16X19-NS

Pin Count: 304
Ball Pitch: 2
Grid Size: 16X19
Slot: NS (No Slot)

(1=1.5mm, 2=1.27mm, 3=1.00mm, 5=.50mm, 6=.80mm, 9=1.143mm [.45"])

(BL = SMT Balls on Top Side)
NS = No Slot
WS = With Slot

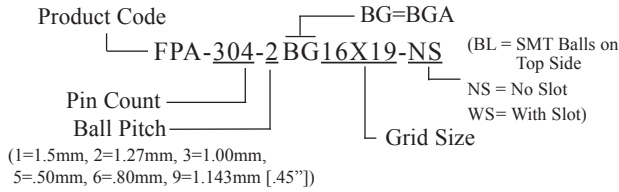
Materials	
Terminals	Brass; copper alloy (C36000) ASTM-B-16
Contacts	Beryllium Copper; Copper Alloy (C17200), ASTM-B-194
Plating	G-Gold over nickel
Body Material	M-Molded PPS (high-temp, glass-filled thermoplastic)
Solder Ball	63Sn/37Pb, Eutectic, 183 degrees C
Temperature Life	
U.L. Rated 94V-0	-60 degrees C to 260 degrees C



FPA					
Pin Count	Ball Pitch (mm)	Grid Size	ET Part #	Drawing #	
48	0.80	6X8	FPA-048-6BG6X8-NS	F4292	
49	0.80	7X7	FPA-049-6BG007-BL	F6098	
49	0.80	7X7	FPA-049-6BG007-NS	F6099	
64	1.00	8X8	FPA-064-3-008-BL	F6889	
64	1.00	8X8	FPA-064-3BG008-NS	F6680	
66	0.80	8X12	FPA-066-6BG8X12-BL	F6721	
66	0.80	8X12	FPA-066-6BG8X12-NS	F6890	
80	0.80	10X10	FPA-080-6BG010-BL	F6722	
100	0.80	10X10	FPA-100-6BG010-BL	F6891	
100	0.80	10X10	FPA-100-6BG010-NS	F6079	
100	1.00	10X10	FPA-100-3BG010-BL	F6056	
100	1.00	10X10	FPA-100-3BG010-WS	F6057	
121	0.80	11X11	FPA-121-6BG011-NS	F6892	
128	0.80	12X12	FPA-128-6BG012-NS	F6893	
144	0.80	13X13	FPA-144-6BG013-BL	F5988	
144	0.80	12X12	FPA-144-6BG012-NS	F6867	
144	1.00	12X12	FPA-144-3BG012-BL	F6070	
144	1.00	12X12	FPA-144-3BG012-WS	F3484	
156	1.00	14X14	FPA-156-3BG014-BL	F5989	
160	0.80	14X14	FPA-160-6BG014-BL	F6972	
160	1.00	14X14	FPA-160-3BG014-BL	F5821	
160	1.00	14X14	FPA-160-3BG014-NS	F5569	

BGA (FPA) FLAT PIN ARRAY - SOCKETS

Ordering Information Example



For a complete list of FPA Socket specifications, pricing and delivery information, please see:

Web Link:
www.1800adapter.com/122

FPA (cont.)

Pin Count	Ball Pitch (mm)	Grid Size	ET Part #	Drawing #
176	0.80	15X15	FPA-176-6BG015-BL	F66F0
176	0.80	15X15	FPA-176-6BG015-NS	F6627
180	0.80	14X14	FPA-180-6BG014-BL	F6894
180	0.80	14X14	FPA-180-6BG014-NS	F6895
196	1.00	14X14	FPA-196-3BG014-BL	F5990
196	1.00	16X16	FPA-196-3BG016-BL	F5822
196	1.00	14X14	FPA-196-3BG014-NS	F5F41
196	1.00	14X14	FPA-196-3BG014-WS	F5245
208	0.80	17X17	FPA-208-6BG017-BL	F6689
208	1.00	16X16	FPA-208-3BG016-BL	F5823
208	1.00	16X16	FPA-208-3BG016-WS	F6071
225	1.27	15X15	FPA-225-2BG015-NS	F4471
225	1.27	15X15	FPA-225-2BG015-WS	F4471
225	1.50	15X15	FPA-225-1BG015-BL	F6058
225	1.50	15X15	FPA-225-1BG015-WS	F6059
233	1.27	17X17	FPA-233-2BG017-BL	F6955
233	1.27	17X17	FPA-233-2BG017-HL	F6896
233	1.27	17X17	FPA-233-2BG017-WS	F6956
233	1.27	17X17	FPA-233-2BG017-BL-1	F6869
241	1.27	17X17	FPA-241-2BG023-NS	F4471
256	0.80	20X20	FPA-256-6BG020-NS	F6742
256	1.00	16X16	FPA-256-3BG016-BL	F5825
256	1.00	16X16	FPA-256-3BG016-NS	F6061
256	1.27	20X20	FPA-256-2BG020-BL	F6065
256	1.27	16X16	FPA-256-2BG016-NS	F4471
256	1.27	16X16	FPA-256-2BG016-WS	F6602
256	1.27	20X20	FPA-256-2BG020-NS	F4471
256	1.27	20X20	FPA-256-2BG020-WS	F6065
272	1.27	20X20	FPA-272-2BG020-BL	F3488
272	1.27	20X20	FPA-272-2BG020-NS	F4471
272	1.27	20X20	FPA-272-2BG020-WS	F3490
280	0.80	19X19	FPA-280-6BG019-BL	F6250
280	0.80	19X19	FPA-280-6BG019-NS	F6250
281	0.80	19X19	FPA-281-6BG019-BL	F6212
281	0.80	19X19	FPA-281-6BG019-NS	F6897
292	1.27	20X20	FPA-292-2BG020-BL	F6789
292	1.27	20X20	FPA-292-2BG020-NS	F6790
304	1.27	23X23	FPA-304-2BG023-BL	F6970
304	1.27	29X29	FPA-304-2BG029-BL	F6971
304	1.27	23X23	FPA-304-2BG023-NS	F6898
304	1.27	16X19	FPA-304-2BG16X19-NS	F4471
304	1.27	16X19	FPA-304-2BG16X19-WS	F4471
313	1.27	25X25	FPA-313-2BG025-NS	F6899
320	1.27	24X24	FPA-320-2BG024-BL	F607F
320	1.27	24X24	FPA-320-2BG024-WS	F6900
324	1.00	18X18	FPA-324-3BG018-BL	F6067
324	1.00	22X22	FPA-324-3BG022-BL	F5993
324	1.00	18X18	FPA-324-3BG018-WS	F6068
324	1.00	22X22	FPA-324-3BG022-WS	F4471
324	1.27	20X20	FPA-324-2BG020-WS	F4471
329	1.27	23X23	FPA-329-2BG023-NS	F6694
352	1.27	26X26	FPA-352-2BG026-BL	F6008
352	1.27	26X26	FPA-352-2BG026-NS	F4471
352	1.27	26X26	FPA-352-2BG026-WS	F6085
356	1.27	26X26	FPA-356-2BG026-BL	F6901
356	1.27	26X26	FPA-356-2BG026-NS	F4471
356	1.27	26X26	FPA-356-2BG026-WS	F6071
357	1.27	19X19	FPA-357-2BG019-NS	F4471
357	1.27	19X19	FPA-357-2BG019-WS	F6581
361	1.27	19X19	FPA-361-2BG019-NS	F6512
372	1.27	20X20	FPA-372-2BG020-NS	F4471
388	1.00	26X26	FPA-388-3BG026-BL	F6809
388	1.00	26X26	FPA-388-3BG026-NS	F648F

NOTE: Manufacturer's chip package drawing required with each order.

FPA (cont.)

Pin Count	Ball Pitch (mm)	Grid Size	ET Part #	Drawing #
388	1.00	26X26	FPA-388-3BG026-WS	F6482
388	1.00	26X26	FPA-388-3BG026-ISI	F6902
388	1.27	26X26	FPA-388-2BG026-BL	F3494
388	1.27	26X26	FPA-388-2BG026-NS	F6577
388	1.27	26X26	FPA-388-2BG026-WS	F6046
400	1.27	20X20	FPA-400-2BG020-NS	F4471
405	1.27	31X31	FPA-405-2BG031X25-BL	F6903
416	1.00	26X26	FPA-416-3BG026-WS	F6353
421	1.27	21X21	FPA-421-2BG021-NS	F6904
421	1.27	23X23	FPA-421-2BG023-NS	F4471
432	1.27	31X31	FPA-432-2BG031-BL	F6905
432	1.27	31X31	FPA-432-2BG031-NS	F6142
432	1.27	31X31	FPA-432-2BG031-WS	F6048
441	1.27	21X21	FPA-441-2BG021-NS	F4471
441	1.27	21X21	FPA-441-2BG021-WS	F4471
452	1.27	26X26	FPA-452-2BG026-NS	F4471
452	1.27	26X26	FPA-452-2BG026-WS	F4471
456	1.00	22X22	FPA-456-3BG022-BL	F6825
456	1.00	26X26	FPA-456-3BG026-BL	F6906
456	1.00	22X22	FPA-456-3BG022-NS	F6824
456	1.00	26X26	FPA-456-3BG026-WS	F6907
456	1.27	26X26	FPA-456-2BG026-BL	F6F46
456	1.27	26X26	FPA-456-2BG026-NS	F6252
456	1.27	26X26	FPA-456-2BG026-WS	F4471
465	1.27	27X27	FPA-465-2BG027-NS	F6908
472	1.27	22X22	FPA-472-2BG022-BL	F5994
472	1.27	22X22	FPA-472-2BG022-NS	F4471
480	1.27	29X29	FPA-480-2BG029-BL	F6601
480	1.27	26X26	FPA-480-2BG026-NS	F6909
480	1.27	29X29	FPA-480-2BG029-NS	F4471
484	1.00	22X22	FPA-484-3BG022-BL	F6957
484	1.00	22X22	FPA-484-3BG022-NS	F6198
484	1.00	22X22	FPA-484-3BG022-WS	F6074
484	1.00	26X26	FPA-484-3BG026-WS	F6910
484	1.00	26X26	FPA-484-3BG026-ISI	F6613
484	1.00	26X26	FPA-484-3BG026-BL	F6911
492	1.27	26X26	FPA-492-2BG026-BL	F6076
492	1.27	26X26	FPA-492-2BG026-NS	F4471
492	1.27	26X26	FPA-492-2BG026-WS	F6050
516	1.27	26X26	FPA-516-2BG026-BL	F6254
516	1.27	26X26	FPA-516-2BG026-NS	F6251
528	1.27	30X30	FPA-528-2BG030-NS	F6144
529	1.27	23X23	FPA-529-2BG023-WS	F4471
552	1.00	24X24	FPA-552-3BG024-HL	F6912
560	1.27	33X33	FPA-560-2BG033-NS	F4471
560	1.27	33X33	FPA-560-2BG033-WS	F4471
561	1.27	33X33	FPA-560-2BG033-BL	F6610
576	1.27	24X24	FPA-576-2BG024-NS	F4471
576	1.27	24X24	FPA-576-2BG024-WS	F4471
596	1.27	30X30	FPA-596-2BG030-BL	F6913
600	1.27	35X35	FPA-600-2BG035-BL	F6076
600	1.27	35X35	FPA-600-2BG035-WS	F6077
600	1.27	35X35	FPA-600-2BG035-HL	F6632
829	1.27	23X23	FPA-529-2BG023-NS	F4471
1020	1.00	32X32	FPA-1020-3BG032-HL	F6914
1152	1.00	34X34	FPA-1152-3BG034-WS	F6915
1156	1.00	34X34	FPA-1156-3BG034-WS	F6226
1497	1.00	39X39	FPA-1497-3BG039-HL	F6916
1497	1.00	39X39	FPA-1497-3BG039-HL-BL	F6917

For a complete list of FPA Socket specifications, pricing and delivery information, please see:

Web Link: www.1800adapter.com/122