**SPECIFIC APPLICATIONS SOCKETS**

**SOLDER TAIL / STAGGERED DIL AND SIL SOCKETS**

Quad-in-line sockets and staggered (zig-zag) strips are suitable for ICs with staggered double row Dual-in-line type pin patterns.

**TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 127)**

- **INSULATOR**: Black glass filled polyester PCT-GF30-FR
- **FLAMMABILITY**: UL 94V-O
- **SLEEVE**: Brass CuZn36Pb3 (C36000)
- **CONTACT CLIP (4 FINGER)**: Beryllium copper (C17200)
- **ACCEPTED PIN Ø**: 0.40 to 0.56 mm
- **FORCES**: 2 N typ. insertion, 1 N typ. withdrawal
- **MECHANICAL LIFE**: Min. 100 cycles
- **RATED CURRENT**: 1 A
- **CONTACT RESISTANCE**: Max. 10 mΩ
- **DIELECTRIC STRENGTH**: Min. 1'000 Vrms

**ORDERING INFORMATION ROHS COMPLIANT PARTS**

<table>
<thead>
<tr>
<th>PP PLATING CODE</th>
<th>SLEEVE</th>
<th>CLIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>B7</td>
<td>Tin</td>
<td>Flash gold</td>
</tr>
<tr>
<td>B3</td>
<td>Tin</td>
<td>0.75 µm gold</td>
</tr>
</tbody>
</table>

**QUAD-IN-LINE SOCKET**

**NO. OF POLES** | **SEE** | **ORDER CODES** |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>Fig. 1</td>
<td>110-PP-084-01-505101</td>
</tr>
</tbody>
</table>

**Note:**
Suitable for quad-in-line packages with 19.05 / 23.50 mm row spacing acc. to JEDEC MO-030.
Quad-in-line socket layout requires 19.05 / 24.13 mm row spacing.

**STAGGERED ZIG-ZAG STRIPS**

<table>
<thead>
<tr>
<th>NO. OF POLES</th>
<th>A</th>
<th>C</th>
<th>VERSION</th>
<th>SEE</th>
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<tbody>
<tr>
<td>14*</td>
<td>19.00</td>
<td>5.0</td>
<td>left</td>
<td>Fig. 2</td>
<td>410-PP-214-10-001101</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>right</td>
<td>Fig. 3</td>
<td>410-PP-214-10-002101</td>
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<tr>
<td>16</td>
<td>21.50</td>
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<td>Fig. 2</td>
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<td>Fig. 3</td>
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<td>20</td>
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<td>Fig. 2</td>
<td>410-PP-220-10-001101</td>
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<td>right</td>
<td>Fig. 3</td>
<td>410-PP-220-10-002101</td>
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<tr>
<td>24</td>
<td>31.65</td>
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<td>left</td>
<td>Fig. 2</td>
<td>410-PP-224-10-001101</td>
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<td></td>
<td></td>
<td>right</td>
<td>Fig. 3</td>
<td>410-PP-224-10-002101</td>
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<tr>
<td>28</td>
<td>36.73</td>
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<td>Fig. 2</td>
<td>410-PP-228-10-001101</td>
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<tr>
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<td>right</td>
<td>Fig. 3</td>
<td>410-PP-228-10-002101</td>
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<td>30</td>
<td>39.27</td>
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<td>Fig. 2</td>
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<td>Fig. 3</td>
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<tr>
<td>40</td>
<td>52.00</td>
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<td></td>
<td></td>
<td>right</td>
<td>Fig. 3</td>
<td>410-PP-240-10-002101</td>
</tr>
</tbody>
</table>

* 14-pin strips are not stackable end to end

---

Due to technical progress, all information provided is subject to change without prior notice.
Partially equipped DIL sockets and display sockets.

**TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 127)**

**INSULATOR**  
Black glass filled polyester PCT-GF30-FR

**FLAMMABILITY**  
UL 94V-O

**SLEEVE**  
Brass CuZn36Pb3 (C36000)

**CONTACT CLIP (4 FINGER) (8 FINGER)**  
Beryllium copper (C17200)  
(Series 510...504101)

**ACCEPTED PIN Ø**  
0.40 to 0.56 mm

**FORCES**  
2 N typ. (0.7 N typ. 510...504101) insertion  
1 N typ. (0.4 N typ. 510...504101) withdrawal  
(polished steel gauge Ø 0.43 mm)  
(6 finger: Ø 0.48 mm)

**MECHANICAL LIFE**  
Min. 100 cycles

**RATED CURRENT**  
1 A

**CONTACT RESISTANCE**  
Max. 10 mΩ

**DIELECTRIC STRENGTH**  
Min. 1'000 Vrms

**ORDERING INFORMATION ROHS COMPLIANT PARTS**

<table>
<thead>
<tr>
<th>PP PLATING CODE</th>
<th>SLEEVES</th>
<th>CLIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>B7</td>
<td>Tin</td>
<td>Flash gold</td>
</tr>
<tr>
<td>B3</td>
<td>Tin</td>
<td>0.75 µm gold</td>
</tr>
</tbody>
</table>

**PARTIALLY EQUIPPED DIL SOCKETS**

<table>
<thead>
<tr>
<th>NO. OF POLES</th>
<th>TOTAL EQUIPPED</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>SEE</th>
<th>ORDER CODES</th>
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<tbody>
<tr>
<td>10 / 6</td>
<td>12.6</td>
<td>5.08</td>
<td>7.6</td>
<td>10</td>
<td>Fig. 1</td>
<td>110-PP-210-01-742101</td>
</tr>
<tr>
<td>10 / 8</td>
<td>12.6</td>
<td>5.08</td>
<td>7.6</td>
<td>10</td>
<td>Fig. 2</td>
<td>110-PP-210-01-839101</td>
</tr>
<tr>
<td>12 / 6</td>
<td>15.2</td>
<td>7.62</td>
<td>10.1</td>
<td>3</td>
<td>Fig. 3</td>
<td>110-PP-312-01-680101</td>
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<tr>
<td>14 / 4</td>
<td>17.7</td>
<td>7.62</td>
<td>10.1</td>
<td>4</td>
<td>Fig. 4</td>
<td>110-PP-314-10-001101</td>
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<tr>
<td>14 / 8</td>
<td>17.7</td>
<td>7.62</td>
<td>10.1</td>
<td>5</td>
<td>Fig. 5</td>
<td>110-PP-314-10-002101</td>
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<tr>
<td>16 / 4</td>
<td>20.3</td>
<td>7.62</td>
<td>10.1</td>
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<td>Fig. 6</td>
<td>110-PP-316-01-822101</td>
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<tr>
<td>16 / 8</td>
<td>20.3</td>
<td>7.62</td>
<td>10.1</td>
<td>7</td>
<td>Fig. 7</td>
<td>110-PP-316-01-931101</td>
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<tr>
<td>16 / 10</td>
<td>20.3</td>
<td>7.62</td>
<td>10.1</td>
<td>8</td>
<td>Fig. 8</td>
<td>110-PP-316-10-003101</td>
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<tr>
<td>28 / 14</td>
<td>35.5</td>
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<td>10.1</td>
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<td>Fig. 9</td>
<td>110-PP-328-01-777101</td>
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<tr>
<td>28 / 16</td>
<td>35.5</td>
<td>7.62</td>
<td>10.1</td>
<td>10</td>
<td>Fig. 10</td>
<td>110-PP-328-01-762101</td>
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</tbody>
</table>

Other pin count and arrangement please consult for other display sockets, single or multidigits.

**DISPLAY SOCKETS FOR 7 SEGMENT DISPLAYS (1 OR 2 DIGITS)**

<table>
<thead>
<tr>
<th>NO. OF POLES</th>
<th>SEE</th>
<th>ORDER CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Fig. 11</td>
<td>510-PP-010-01-504101</td>
</tr>
<tr>
<td>18</td>
<td>Fig. 12</td>
<td>510-PP-018-01-504101</td>
</tr>
</tbody>
</table>

Other plating on request (see page 178 for plating specs).

Due to technical progress, all information provided is subject to change without prior notice.
PGA/BGA/PLCC SOCKETS
## QUICK SELECTOR CHART

### PGA / BGA / PLCC

<table>
<thead>
<tr>
<th>Sockets</th>
<th>2.54 mm</th>
<th>PGA INTERSTITIAL</th>
<th>1.27 mm</th>
<th>BGA 1.27 mm</th>
<th>1 mm</th>
<th>PLCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solder tail</td>
<td>156</td>
<td>161</td>
<td>165</td>
<td>173</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface mount</td>
<td>156</td>
<td>161</td>
<td>165</td>
<td>166</td>
<td>169</td>
<td></td>
</tr>
<tr>
<td>Solderless compliant press-fit</td>
<td>157</td>
<td>161</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Carrier</td>
<td>158</td>
<td>162</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interconnect pin</td>
<td>158</td>
<td>162</td>
<td>165</td>
<td>167</td>
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<tr>
<td>Surface mount</td>
<td>167</td>
<td>169</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BGA pin-adapter</td>
<td></td>
<td></td>
<td>166</td>
<td>169</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Due to technical progress, all information provided is subject to change without prior notice.**
PGA / BGA / PLCC

GENERAL SPECIFICATIONS

The values listed below are general specs applying for PRECI-DIP PGA, BGA and PLCC sockets. Please see individual catalog page for additional and product specific technical data.

OPERATING TEMPERATURE RANGE: -55 ... +125 °C
CLIMATIC CATEGORY (IEC): 55/125/21
OPERATING HUMIDITY RANGE: Annual mean 75%
MAX. WORKING VOLTAGE: 100 Vrms/150 Vcc (2.54 mm grid)

PRECI-DIP connectors designated « Series Preci-Dip Connector » are recognized by UL LLC and listed under « Connectors for Use in Data, Signal, Control and Power Applications », File Nr. E174442.

MECHANICAL CHARACTERISTICS
- CLIP RETENTION: Min. 40 N (no displacement under axial force applied)
- CONTACT RETENTION: Min. 3.3 N acc. to MIL-DTL-83734, pt 4.6.4.2

ELECTRICAL CHARACTERISTICS
- INSULATION RESISTANCE BETWEEN ANY TWO ADJACENT CONTACTS: Min. 10'000 MQ at 500 Vac
- CAPACITANCE BETWEEN ANY TWO ADJACENT CONTACTS: Max. 1 pF (PLCC max. 2 pF)
- SELF INDUCTANCE PER CONTACT: Max. 2 nH

ENVIRONMENTAL CHARACTERISTICS
The sockets withstand the following environmental tests without mechanical and electrical defects:
- Damp heat cyclic IEC 60512-11-12.11m / 60068-2-30.Db: 25/55 °C, 90 – 100 %rh, 1 cycle of 24 h
- Cold steady state IEC 60512-11-10.11i / 60068-2-1.A: -55 °C, 2 h
- Sinusoidal vibrations IEC 60512-6-4.6d / 60068-2-6.Fc: 10 to 500 Hz, 10 g, 1 octave/min., 10 cycles for each axis
- Shock IEC 60512-6-3.6c / 60068-2-27.Ea: 50 g, 11 ms, 3 shocks in three axis
- Moisture sensitivity J-STD-020C level 1
- Resistance to corrosion:
  1) Salt spray test IEC 60068-2-11.Ka: 48 h
  2) Sulfur dioxide (SO2) test IEC 60068-2-42.Kc: 96 h at 25 ppm SO2,
     25 °C, 75 %rh
  3) Hydrogen sulfide (H2S) test IEC 60068-2-43.Kd: 96 h at 12 ppm H2S,
     25 °C, 75 %rh

SOLDERLESS COMPLIANT PRESS-FIT CHARACTERISTICS
PRESS-FIT CHARACTERISTICS MEASURED ACC. TO IEC 60362-5
- Press-in force: 90 N max. (at min. hole dia.) / 65 N typ.
- Push-out force: 30 N min. (at max. hole dia.) / 50 N typ.
- Push-out 3rd cycle: 20 N min. (at max. hole dia.)

PCB HOLE DIMENSIONS
- 2.54 mm grid
  - Finished hole Ø: 1 + 0.09/-0.06 mm
  - Drilled hole Ø: 1.15 ± 0.025 mm
- Interstitial grid
  - Finished hole Ø: 0.7 + 0.09/-0.06 mm
  - Drilled hole Ø: 0.8 ± 0.02 mm

PCB HOLE PLATING
- PCB surface finish: Hole plating
- Tin: 5-15 µm tin over min. 25 µm copper
- Copper: min. 25 µm copper
- Gold over nickel: 0.05-0.2 µm gold over 2.5-5 µm nickel

PACKAGING
- Standard packaging for PGA, BGA and PLCC sockets is tube packaging.
- SMD mount sockets available on request with Tape & Reel packaging acc. to EIA Standard 481.
These products are marked with the symbol:

T & R Packaging

Please consult www.precidip.com for availability size of tape, size of reel, number of components per reel, packing units and part numbers.

Due to technical progress, all information provided is subject to change without prior notice.
Pin grid array sockets, standard solder version and surface mount with floating contacts.

**TECHNICAL SPECIFICATIONS** (FOR GENERAL SPECS, SEE PAGE 155)

**INSULATOR**
Black glass filled polyester PCT-GF30-FR

**FLAMMABILITY**
UL 94V-0

**SLEEVE**
Brass CuZn36Pb3 (C36000)

**CONTACT CLIP (6 FINGER)**
Beryllium copper (C17200)

**ACCEPTED PIN Ø**
0.40 to 0.56 mm

**FORCES**
0.7 N typ. insertion 0.4 N typ. withdrawal (polished steel gauge Ø 0.46 mm)

**MECHANICAL LIFE**
Min. 100 cycles

**RATED CURRENT**
1 A

**CONTACT RESISTANCE**
Max. 10 mΩ

**DIELECTRIC STRENGTH**
Min. 1’000 Vrms

**ORDERING INFORMATION ROHS COMPLIANT PARTS**

<table>
<thead>
<tr>
<th>PP PLATING CODE</th>
<th>SLEEVE</th>
<th>CLIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>B7</td>
<td>Tin</td>
<td>Flash gold</td>
</tr>
<tr>
<td>B3</td>
<td>Tin</td>
<td>0.75 µm gold</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

Calculate with n1 = number of contacts in one line and n2 = characteristic size of the window

\[
A = n1 \times 2.54 \\
B = (n1-1) \times 2.54 \\
C = (n2 \times 2.54) - 0.40
\]

Other plating on request (see page 178 for plating specs). Replace NNN with the number of poles and XX-XXX with body size and layout numbers as indicated on pages 159 to 160. For example a 17x17 pin configuration with window and 168 contacts as shown on page 160 becomes 510-83-168-17-101101.

**Options:** please consult for availability

- PGA sockets with optional standoffs
- PGA sockets with solder tails, length 4.2 mm
- PGA sockets with low profile contacts and solder tails of 2.8 mm length
- PGA interconnect sockets with other contact lengths.

---

**510-PP-NNN-XX-XXX101**
PGA sockets with standard solder tails, length 3.17 mm.

**514-PP-NNN-XX-XXX117**
PGA sockets with self-aligning SMD floating contacts.
Contact diameter of soldering end 0.98 mm, allowing PCB pads as small as 1.1 mm.

---

Due to technical progress, all information provided is subject to change without prior notice.
Pin grid array sockets with compliant press-fit terminations.

**TECHNICAL SPECIFICATIONS**

*FOR GENERAL SPECS, SEE PAGE 155*

- **INSULATOR**: Black glass filled polyester PCT-GF30-FR
- **FLAMMABILITY**: UL 94V-0
- **SLEEVE**: Bronze CuSn4Pb4Zn4 (C54400)
- **CONTACT CLIP (6 FINGER)**: Beryllium copper (C17200)
- **ACCEPTED PIN Ø**: 0.40 to 0.56 mm
- **FORCES**: 0.7 N typ. insertion, 0.4 N typ. withdrawal (polished steel gauge Ø 0.46 mm)
- **MECHANICAL LIFE**: Min. 100 cycles
- **RATED CURRENT**: 1 A
- **CONTACT RESISTANCE**: Max. 10 mΩ
- **DIELECTRIC STRENGTH**: Min. 1'000 Vrms

**ORDERING INFORMATION ROHS COMPLIANT PARTS**

<table>
<thead>
<tr>
<th>PP PLATING CODE</th>
<th>SLEEVE</th>
<th>CLIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>B7</td>
<td>Tin</td>
<td>Flash gold</td>
</tr>
<tr>
<td>B3</td>
<td>Tin</td>
<td>0.75 µm gold</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

Calculate with \( n_1 = \) number of contacts in one line and \( n_2 = \) characteristic size of the window

\[
A = n_1 \times 2.54 \\
B = (n_1-1) \times 2.54 \\
C = (n_2 \times 2.54) - 0.40
\]

**546-PP-NNN-XX136**

PGA sockets with solderless compliant press-fit terminations for 1.5 to 2.0 mm PCB thickness.

Hole diameter 1 (+0.09/-0.06) mm after metallization (Drill diameter 1.15±0.025 mm).

**546-PP-NNN-XX135**

PGA sockets with solderless compliant press-fit terminations for 2.1 to 3.2 mm PCB thickness.

Hole diameter 1 (+0.09/-0.06) mm after metallization (Drill diameter 1.15±0.025 mm).

Other plating on request (see page 178 for plating specs). Replace **NNN** with the number of poles and **XX-XXX** with body size and layout numbers as indicated on pages 159 to 160. For example a 17x17 pin configuration with window and 168 contacts as shown on page 160 becomes 546-83-168-17-101136.

Due to technical progress, all information provided is subject to change without prior notice.
Pin grid array sockets, interconnect pin and carriers with disposable plastic body.

TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 155)

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulator</td>
<td>Black glass filled polyester PCT-GF30-FR</td>
</tr>
<tr>
<td>Flammability</td>
<td>UL 94V-O</td>
</tr>
<tr>
<td>Sleeve</td>
<td>Brass CuZn36Pb3 (C36000)</td>
</tr>
<tr>
<td>Contact Clip (3 Finger)</td>
<td>Beryllium copper (C17200)</td>
</tr>
<tr>
<td>Accepted Pin Ø</td>
<td>0.40 to 0.56 mm</td>
</tr>
<tr>
<td>Forces</td>
<td>0.8 N typ. insertion, 0.4 N typ. withdrawal (polished steel gauge Ø 0.46 mm)</td>
</tr>
<tr>
<td>Mechanical Life</td>
<td>Min. 100 cycles</td>
</tr>
<tr>
<td>Rated Current</td>
<td>1 A</td>
</tr>
<tr>
<td>Contact Resistance</td>
<td>Max. 10 mΩ</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>Min. 1000 Vrms</td>
</tr>
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</table>

ORDERING INFORMATION ROHS COMPLIANT PARTS

<table>
<thead>
<tr>
<th>PP PLATING CODE</th>
<th>TERMINATION</th>
<th>CONNECTING PIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 (Serie 550)</td>
<td>0.25 µm gold</td>
<td>0.25 µm gold</td>
</tr>
<tr>
<td>80 (Serie 550)</td>
<td>Tin</td>
<td>Tin</td>
</tr>
<tr>
<td>87 (Serie 614)</td>
<td>Tin</td>
<td>Flash gold</td>
</tr>
<tr>
<td>83 (Serie 614)</td>
<td>Tin</td>
<td>0.75 µm gold</td>
</tr>
</tbody>
</table>

DIMENSIONS

Calculate with \( n_1 \) = number of contacts in one line and \( n_2 = \) characteristic size of the window

\[
A = n_1 \times 2.54 \\
B = (n_1 - 1) \times 2.54 \\
C = (n_2 \times 2.54) - 0.40
\]

550-PP-NNN-XX-XXX101
PGA interconnect sockets with through hole solder tails and connecting pin Ø 0.47 mm.

614-PP-NNN-XX-XXX112
PGA carrier sockets with disposable plastic body. Low profile ultra thin contacts with solder termination Ø 0.35 mm that requires Ø 1 mm holes in PCB.

Due to technical progress, all information provided is subject to change without prior notice.
Due to technical progress, all information provided is subject to change without prior notice.
Due to technical progress, all information provided is subject to change without prior notice.
Pin grid array sockets with interstitial contact rows, solder tails, surface mount floating contacts and solderless compliant.

**TECHNICAL SPECIFICATIONS** (FOR GENERAL SPECS, SEE PAGE 155)

<table>
<thead>
<tr>
<th>INSULATOR</th>
<th>Black glass filled polyester PCT-GF30-FR</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAMMABILITY</td>
<td>UL 94V-O</td>
</tr>
<tr>
<td>SLEEVE</td>
<td>Brass CuZn36Pb3 (C36000) (Bronze CuSn4Pb4Zn4 (C54400) for press-fit contacts)</td>
</tr>
<tr>
<td>CONTACT CLIP (6 FINGER)</td>
<td>Beryllium copper (C17200)</td>
</tr>
<tr>
<td>ACCEPTED PIN Ø</td>
<td>0.40 to 0.56 mm</td>
</tr>
<tr>
<td>FORCES</td>
<td>0.4 N typ. insertion 0.2 N typ. withdrawal (polished steel gauge Ø 0.46 mm)</td>
</tr>
<tr>
<td>MECHANICAL LIFE</td>
<td>Min. 100 cycles</td>
</tr>
<tr>
<td>RATED CURRENT</td>
<td>1 A</td>
</tr>
<tr>
<td>CONTACT RESISTANCE</td>
<td>Max. 10 mΩ</td>
</tr>
<tr>
<td>DIELECTRIC STRENGTH</td>
<td>Min. 700 Vrms</td>
</tr>
</tbody>
</table>

**ORDERING INFORMATION ROHS COMPLIANT PARTS**

<table>
<thead>
<tr>
<th>PP PLATING CODE</th>
<th>SLEEVE</th>
<th>CLIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>87</td>
<td>Tin</td>
<td>Flash gold</td>
</tr>
<tr>
<td>83</td>
<td>Tin</td>
<td>0.75 µm gold</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

Calculate with \(n_1 = \) number of contacts on the external row and \(n_2 = \) characteristic size of the window.

\[
\begin{align*}
A &= (n_1 \times 2.54) + 1.30 \\
B &= (n_1 - 1) \times 2.54 \\
C &= (n_2 \times 2.54) - 0.40
\end{align*}
\]

**517-PP-NNN-XX-XXX111**

Interstitial PGA sockets with through hole solder tails, length 3.17 mm.

**514-PP-NNN-XX-XXX154**

Interstitial PGA sockets with self-aligning SMD floating contacts. Contact diameter of soldering end 0.8 mm allowing PCB pads with 0.9 mm diameter.

**546-PP-NNN-XX-XXX147**

Interstitial PGA sockets with solderless compliant press-fit terminations for 1.2 to 2.5 mm PCB thickness. Hole diameter 0.7 (+0.07/-0.05) mm after metallization (Drill diameter 0.85±0.025 mm).

Due to technical progress, all information provided is subject to change without prior notice.
Pin grid array sockets with interstitial contact rows, interconnect pin and carriers with disposable plastic body.

TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 155)
- INSULATOR: Black glass filled polyester PCT-GF30-FR
- FLAMMABILITY: UL 94V-O
- SLEEVE / PIN: Brass CuZn36Pb3 (C36000)
- CONTACT CLIP (3 FINGER): Beryllium copper (C17200)
- ACCEPTED PIN Ø: 0.40 to 0.56 mm
- FORCES:
  - 0.3 N typ. insertion
  - 0.15 N typ. withdrawal (polished steel gauge Ø 0.46 mm)
- MECHANICAL LIFE: Min. 100 cycles
- RATED CURRENT: 1 A
- CONTACT RESISTANCE: Max. 10 mΩ
- DIELECTRIC STRENGTH: Min. 700 V

550-PP-NNN-XX-XXX135
Interstitial PGA interconnect sockets with through hole solder tails and connecting pin Ø 0.44 mm.

614-PP-NNN-XX-XXX144
Interstitial PGA carrier sockets with disposable plastic body and low profile, ultra-thin contacts with Ø 0.84 mm that requires Ø min 0.9 mm PCB holes.
PIN GRID ARRAY SOCKETS
INTERSTITIAL / FOOTPRINTS / TOP VIEW

Due to technical progress, all information provided is subject to change without prior notice.
Due to technical progress, all information provided is subject to change without prior notice.
Micro pin grid array sockets (µPGA) with contacts placed on 1.27 mm grid, solder tail, surface mount and interconnect pin.

**TECHNICAL SPECIFICATIONS** *(FOR GENERAL SPECs, SEE PAGE 155)*

- **INSULATOR**: Glass-epoxy laminate FR4
- **FLAMMABILITY**: UL 94V-0
- **SLEEVE / PIN**: Brass CuZn36Pb3 (C36000)
- **CONTACT CLIP (6 FINGER)**: Beryllium copper (C17200)
- **ACCEPTED PIN Ø**: 0.30 to 0.35 mm
- **FORCES**: 0.2 N typ. insertion, 0.15 N typ. withdrawal
  - (polished steel gauge Ø 0.3 mm)
- **MECHANICAL LIFE**: Min. 100 cycles
- **CONTACT RESISTANCE**: Max. 10 mΩ
- **RATED CURRENT**: 1 A
- **DIELECTRIC STRENGTH**: Min. 500 Vrms

**ORDERING INFORMATION**

- **ROHS COMPLIANT PARTS**
  - **PP PLATING CODE**: 77 (Series 518)
  - **SLEEVE**: Flash gold
  - **CLIP**: Flash gold
  - **PP PLATING CODE**: TERMINATION 10 (Series 558)
  - **CONTACT RESISTANCE**: 0.25 µm gold
  - **CONNECTING PIN**: 0.25 µm gold

**DIMENSIONS**

Calculate with $n_1 = \text{number of contacts in one line}$ and $n_2 = \text{characteristic size of the window}$

- $A = (n_1 x 1.27) + 1.27$
- $B = (n_1 - 1) x 1.27$
- $C = (n_2 x 1.27) - 0.40$

**518-77-NNN/MMX-XXX105**

µPGA sockets 1.27 mm grid with through hole solder tails length 2.79 mm.

**518-77-NNN/MMX-XXX106**

µPGA sockets 1.27 mm grid, surface mount.

Contact diameter of soldering end 0.31 mm allowing PCB pads with 0.4 mm diameter.

**558-10-NNN/MMX-XXX101**

µPGA 1.27 mm grid, interconnect sockets with through hole solder tail and connecting pin Ø 0.31 mm.

---

Due to technical progress, all information provided is subject to change without prior notice.
TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 155)

INSULATOR: Glass-epoxy laminate FR4
FLAMMABILITY: UL 94V-0
SLEEVE / PIN: Brass CuZn36Pb3 (C36000)
CONTACT CLIP (4 FINGER): Beryllium copper (C17200)
ACCEPTED PIN Ø: 0.36 to 0.46 mm
FORCES: 0.3 N typ. insertion, 0.15 N typ. withdrawal
(polished steel gauge Ø 0.43 mm)
MECHANICAL LIFE: Min. 100 cycles
RATED CURRENT: 1 A
CONTACT RESISTANCE: Max. 10 mΩ
DIELECTRIC STRENGTH: Min. 500 Vrms

ORDERING INFORMATION ROHS COMPLIANT PARTS

PP PLATING CODE | SLEEVE | CLIP
--- | --- | ---
B7 (Serie 514) | Tin | Flash gold
B3 (Serie 514) | Tin | 0.75 µm gold
PP PLATING CODE | TERMINATION | CONNECTING PIN
--- | --- | ---
10 (Serie 550) | 0.25 µm gold | 0.25 µm gold
80 (Serie 550) | Tin | Tin

DIMENSIONS

Calculate with \( n_1 \) = number of contacts in one line

for sockets
\[
A = (n_1 \times 1.27) + 1.27
\]
\[
B = (n_1 - 1) \times 1.27
\]

for adapters
\[
A = (n_1 \times 1.27) + 3.27
\]
\[
B = (n_1 - 1) \times 1.27
\]

514-PP-NNN/XX-XXX148
BGa sockets 1.27 mm grid with self-aligning surface mount floating contacts.
Same footprint as the BGa device, to mate with the corresponding adapter.

550-10-NNN/XX-XXX166
BGa adapter 1.27 mm grid pluggable into the corresponding socket.
Connecting pin Ø 0.42 mm.
BGa device is SMD soldered on the solder pads.

BGA socket and adapter systems are the reliable solution to make BGAs pluggable:
- the BGA socket Series 514 (1) is soldered to the PCB in place of the BGA device and using the same footprint
- the BGA device (2) is soldered to the adapter Series 550 (2)
- the BGA + adapter sub-assembly is plugged into the socket

Due to technical progress, all information provided is subject to change without prior notice.
Ball grid array interconnect pin, through hole solder tail and surface mount.

**TECHNICAL SPECIFICATIONS**

**INSULATOR**
Glass-epoxy laminate FR4

**FLAMMABILITY**
UL 94V-O

**CONTACT**
Brass CuZn36Pb3 (C36000)

**MECHANICAL LIFE**
Min. 100 cycles

**RATED CURRENT**
1 A

**CONTACT RESISTANCE**
Max. 10 mΩ

**DIELECTRIC STRENGTH**
Min. 500 Vrms

**ORDERING INFORMATION ROHS COMPLIANT PARTS**

<table>
<thead>
<tr>
<th>PP PLATING CODE</th>
<th>TERMINATION</th>
<th>CONNECTING PIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>0.25 μm gold</td>
<td>0.25 μm gold</td>
</tr>
</tbody>
</table>

Other plating on request (see page 178 for plating specs). Replace **NNN** with the number of poles and **XX-XXX** with body size and layout numbers as indicated on page 168. For example a 20x20 pin configuration with 256 contacts as shown on page 168 becomes 550-10-256M/20-00152.

**DIMENSIONS**

Calculate with \( n_1 = \text{number of contacts in one line} \)

\[
A = (n_1 \times 1.27) + 3.27 \\
B = (n_1 - 1) \times 1.27
\]

**550-10: NNN/XX-XXX152**

BGA interconnect sockets 1.27 mm grid, through hole solder tails and connecting pin Ø 0.40 mm.

**558-10: NNN/XX-XXX104**

BGA interconnect sockets 1.27 mm grid, with surface mount terminations and connecting pin Ø 0.41 mm.

Due to technical progress, all information provided is subject to change without prior notice.
BALL/PIN GRID ARRAY SOCKETS
1.27 mm GRID / FOOTPRINTS / TOP VIEW

Due to technical progress, all information provided is subject to change without prior notice.
BALL GRID ARRAY SOCKETS
1 mm GRID / SURFACE MOUNT SOCKET, ADAPTER / INTERCONNECT PIN

Ball grid array sockets and adapter surface mount.

TECHNICAL SPECIFICATIONS (FOR GENERAL SPECS, SEE PAGE 155)

| INSULATOR | Glass-epoxy laminate FR4 |
| FLAMMABILITY | UL 94V-0 |
| SLEEVE / PIN | Brass CuZn36Pb3 (C36000) |
| CONTACT CLIP (3 FINGER) | Beryllium copper (C17200) |
| ACCEPTED PIN Ø | 0.20 to 0.30 mm |
| FORCES | 0.4 N typ. insertion | 0.2 N typ. withdrawal (polished steel gauge ø 0.25 mm) |
| MECHANICAL LIFE | Min. 100 cycles |
| RATED CURRENT | 1 A |
| CONTACT RESISTANCE | Max. 10 mΩ |
| DIELECTRIC STRENGTH | Min. 500 V RMS |

ORDERING INFORMATION ROHS COMPLIANT PARTS

<table>
<thead>
<tr>
<th>PP PLATING CODE</th>
<th>SLEEVE</th>
<th>CLIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Serie 514)</td>
<td>0.25 µm gold</td>
<td>0.25 µm gold</td>
</tr>
<tr>
<td>10 (Serie 558)</td>
<td>0.25 µm gold</td>
<td>0.25 µm gold</td>
</tr>
</tbody>
</table>

DIMENSIONS
Calculate with \( n_1 = \text{number of contacts in one line} \)

\[ A = n_1 + 2.81 \]
\[ B = n_1 - 1 \]

514-11-NNNXX-XXX159
BGA sockets 1 mm grid, surface mount.
Same footprint as the BGA device to mate with the corresponding adapter.

558-10-NNNXX-XXX102
BGA adapter 1 mm grid, pluggable into the corresponding socket.
Connecting pin Ø 0.25 mm.
BGA device is SMD soldered on the solder pads.

558-10-NNNXX-XXX103
BGA interconnect sockets 1 mm grid with surface mount terminations and connecting pin Ø 0.25 mm.

Due to technical progress, all information provided is subject to change without prior notice.
BALL/PIN GRID ARRAY
SOCKETS
PART NUMBER IDENTIFICATION

TYPE OF SOCKET

Standard PGA, Interstitial PGA and μPGA

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>510...01</td>
<td>Solder pin 2.54 mm grid</td>
<td>156</td>
</tr>
<tr>
<td>514...34</td>
<td>SMD 2.54 mm grid</td>
<td>156</td>
</tr>
<tr>
<td>514...54</td>
<td>SMD interstitial</td>
<td>161</td>
</tr>
<tr>
<td>517...11</td>
<td>Solder pin interstitial</td>
<td>161</td>
</tr>
<tr>
<td>518...05</td>
<td>Solder pin 1.27 mm grid</td>
<td>165</td>
</tr>
<tr>
<td>518...06</td>
<td>SMD 1.27 mm grid</td>
<td>165</td>
</tr>
<tr>
<td>546...35</td>
<td>Press-fit 2.54 mm, PCB 2.1-3.2 mm</td>
<td>157</td>
</tr>
<tr>
<td>546...36</td>
<td>Press-fit 2.54 mm, PCB 1.5-2.0 mm</td>
<td>157</td>
</tr>
<tr>
<td>546...47</td>
<td>Press-fit interstitial</td>
<td>161</td>
</tr>
<tr>
<td>550...01</td>
<td>Interconnect, solder pin, 2.54 mm grid</td>
<td>158</td>
</tr>
<tr>
<td>550...35</td>
<td>Interconnect, solder pin, interstitial</td>
<td>162</td>
</tr>
<tr>
<td>558...01</td>
<td>Interconnect, solder pin, 1.27 mm grid</td>
<td>165</td>
</tr>
<tr>
<td>514...12</td>
<td>Carrier 2.54 mm grid</td>
<td>158</td>
</tr>
<tr>
<td>614...44</td>
<td>Carrier interstitial</td>
<td>162</td>
</tr>
</tbody>
</table>

BGA

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>514...48</td>
<td>Socket SMD, 1.27 mm grid</td>
<td>166</td>
</tr>
<tr>
<td>514...59</td>
<td>Socket SMD, 1 mm grid</td>
<td>169</td>
</tr>
<tr>
<td>550...66</td>
<td>Adapter, 1.27 mm grid</td>
<td>166</td>
</tr>
<tr>
<td>550...52</td>
<td>Interconnect, solder pin, 1.27 mm grid</td>
<td>167</td>
</tr>
<tr>
<td>559...02</td>
<td>Adapter, 1 mm grid</td>
<td>169</td>
</tr>
<tr>
<td>558...03</td>
<td>Interconnect SMD, 1 mm grid</td>
<td>169</td>
</tr>
<tr>
<td>558...04</td>
<td>Interconnect SMD, 1.27 mm grid</td>
<td>167</td>
</tr>
</tbody>
</table>

PLATING CODE ROHS COMPLIANT PARTS

<table>
<thead>
<tr>
<th>Code</th>
<th>Sleeve</th>
<th>Clip</th>
</tr>
</thead>
<tbody>
<tr>
<td>77</td>
<td>Flash gold</td>
<td>Flash gold</td>
</tr>
<tr>
<td>83</td>
<td>Tin</td>
<td>0.75 µm gold</td>
</tr>
<tr>
<td>87</td>
<td>Tin</td>
<td>Flash gold</td>
</tr>
<tr>
<td>10</td>
<td>0.25 µm gold</td>
<td>0.25 µm gold</td>
</tr>
<tr>
<td>80</td>
<td>Tin</td>
<td>Tin</td>
</tr>
</tbody>
</table>

See pages 159, 160, 163, 164 and 168 for most popular footprints.

Grid: ~ 2.54 mm or interstitial
M 1.27 mm grid
P 1 mm grid

Due to technical progress, all information provided is subject to change without prior notice.
BALL/PIN GRID ARRAY SOCKETS
CUSTOM GRID DESIGN

ORDERING INFORMATION

Type of socket (see opposite page)

Plating code PP (see opposite page)

Grid

  - Standard 2.54 mm
  - Intertitial
  - 1.27 mm
  - 1 mm

Size of body

Semiconductor device used

Quantity

EXAMPLE

Fill in the position of pins

Mark of the window

Due to technical progress, all information provided is subject to change without prior notice.