

# 10

**IC-SOCKETS &  
INTERCONNECT PRODUCTS**



This building served for the production of Swiss precision watches for a period of 70 years.

In 1984 the facility was purchased, completely renovated and high technology fully automated production equipment was installed for the production of precision interconnection products.

In 1992 the trademark

**E-tec**

was registered to cover the complete interconnect product range.

As of 1993 a world-wide sales & distribution network was established to offer fast and efficient service regardless of location.

In addition to the interconnection products E-tec also supplies high quality screw machine parts as well as customized injection moulded and machined products.

Our innovative approach to new product development allows us to offer the service, quality and competitive prices our customers demand.

Whatever your requirement, be it high volume commodity product or low quantity custom special, E-tec, the "Swiss Connection" will endeavour to satisfy your requirements.

For any further details please contact E-tec or your closest sales office.

# INDEX

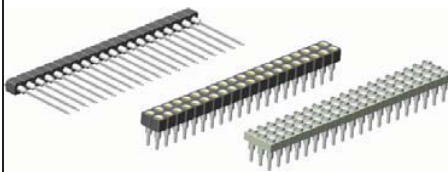
click on page numbers



Part - Number	Page	Part - Number	Page
BL1 - xxx - Axxx - xx	10	PGS - xxx - Exxx - xxX - xx	18
BL1 - xxx - Gxxx - xx	10	PLE - xxx - N115 - xx	34
BL2 - xxx - Axxx - xx	10	PLP - xxx - H100 - 99/x	36
BL2 - xxx - Gxxx - xx	10	PLP - xxx - N110 - 99	35
BS1 - xxx - G560 - xx	12	PLS - xxx - H105 - 99/x	37
BS1 - xxx - G860 - xx	11	POA - xxx - Sxxx - xx	19
BS2 - xxx - G560 - xx	12	POO - xxx - Sxxx - xx	14 & 15
BS2 - xxx - G702 - xx	11	POS - xxx - Sxxx - xx	14 to 16
BS2 - xxx - G860 - xx	11	PSC - xxx - H09x - xx	21
COS - xxx - S001 - xx	25	PSC - xxx - H933 - xx	21
DCA - xxx - Sxxx - xx	20	PSC - xxx - HR94 - xx	21
DCP - xxx - Sxxx - xx	20	PSO - xxx - H09x - xx	21
DIS - 2xx - R9xx - xx	9	PSO - xxx - H933 - xx	21
DIS - 2xx - Fxxx - xx	5 & 6	PSO - xxx - HR94 - xx	21
DIS - 2xx - Sxxx - xx	5 & 7	PUL - xxx	44
DM1 - 100 - VCA9 - 95/1L	39	PUS - xxx	44
DM1 - 168 - RCA9 - 95/1L	42	QIL - 764 - Sxxx - xx	25
DM1 - 168 - SXA8 - 95/1L	41	QIT - xxx - Sxxx - xx	22
DM1 - 168 - VXX9 - 95/1L	40	QIT - xxx - Wxxx - xx	22
DR1 - 184 - VBZ9 - 95/1L	43	SCP - xxx - Sxxx - xx	20
DSP - xxx - Exxx - xx	18	SDC - xxx - Exxx - xx	24
DSP - xxx - Exxx - xx/1	18	SDC - 764 - Sxxx - xx	24
DSP - xxx - Exxx - xx/2	18	SDO - 764 - Sxxx - xx	24
DSS - 2xx - H094 - xx	8	SDS - 232 - Sxxx - xx	24
HCL - xxx	33	SIB - 1xx - Exxx - xx	5 to 7
HCP - xxx	35 & 36	SIB - 1xx - Fxxx - xx	5 & 6
LCC - xxx - Hxxx - xx	33	SIB - 1xx - R9xx - xx	9
LEH - 2xx - Sxxx - xx	26	SIB - 1xx - Sxxx - xx	5 to 7
LEH - 3xx - Sxxx - xx	26	SL1 - xxx - A379 - xx	13
LEH - 4xx - Sxxx - xx	26	SL1 - xxx - G379 - xx	13
LEH - 6xx - Sxxx - xx	26	SL2 - xxx - A379 - xx	13
LEV - 2xx - Sxxx - xx	26	SL2 - xxx - G379 - xx	13
LEV - 3xx - Sxxx - xx	26	SLP - 1xx - S083 - xx	17
LEV - 6xx - Sxxx - xx	26	SM1 - xxx - TS99 - 99/1M	38
LOC - xxx - T051 - 99	23	SM1 - xxx - TV99 - 99/1M	38
LOP - 3xx - S083 - xx	17	SM1 - xxx - TV99 - 99/1MR	38
LOP - 6xx - S083 - xx	17	SSB - 1xx - H094 - xx	8
LSP - xxx - Exxx - xx	18	SSP - xxx - Exxx - xx	18
LSP - xxx - Exxx - xx/1	18	SSP - xxx - Exxx - xx/1	18
LSP - xxx - Exxx - xx/2	18	SSP - xxx - Exxx - xx/2	18
MGS xxx - Exxx - xx X xx xx	32	TIS - 3xx - Exxx - xx	5 to 7
PCB - xxx - Rxxx - xx/x	28	TOS - 202 - S001 - xx	27
PCL - xxx - Sxxx - xx	14 to 16	TOS - xxx - S118 - xx	27
PGA - xxx - Exxx - xxX - xx	29 to 31	ZZS - xxx - Exxx - xx	18
PGA - xxx - Sxxx - xxX - xx	29 to 31	ZZS - xxx - Exxx - xx/1	18
PGI - xxx - Exxx - xxX - xx	29 to 31	ZZS - xxx - Exxx - xx/2	18
<b>Custom Design</b>	<b>50 &amp; 51</b>	<b>Terminals (loose)</b>	<b>46 to 48</b>
<b>General Specification &amp; Information</b>	<b>49</b>	<b>Test Sockets &amp; Adapter</b>	<b>52</b>
<b>Probe Pins &amp; Probe Pin Connectors</b>	<b>45</b>		

## THROUGH HOLE SOCKET STRIPS

Straight Socket Strips  
Single-, Dual- & Triple-In-Line



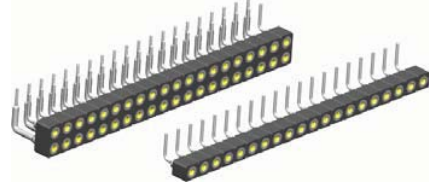
Page 5 to 7

Straight Socket Strips  
Low- & Super Low Profile



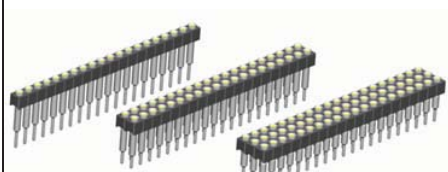
Page 17 & 18

90° Socket Strips  
Single- & Dual-In-Line



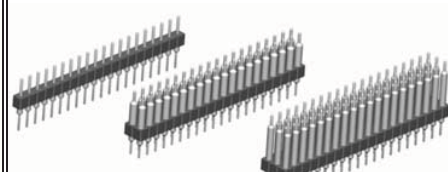
Page 9

Straight Board Stacker Strips  
Single-, Dual- & Triple-In-Line



Page 5 & 6

Straight Adapter Strips  
Single-, Dual- & Triple-In-Line



Page 5, 7 & 18

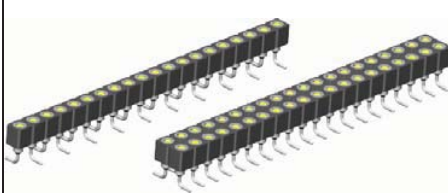
90° Adapter Strips  
Single- & Dual-In-Line



Page 9

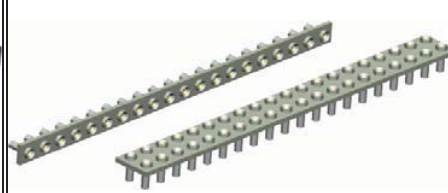
## SMT SOCKET STRIPS

Single- & Dual-In-Line



Page 8

Super Low Profile



Page 18

## “F” – CONTACT STRIPS

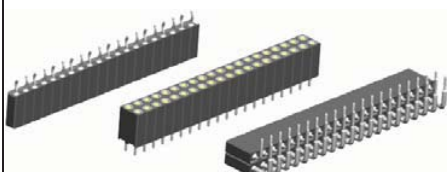


Page 28

## JUMBO CONTACT SOCKET & ADAPTER STRIPS

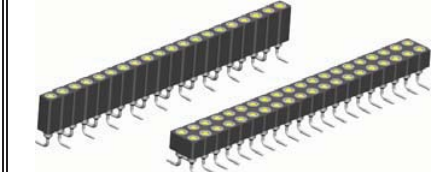
mating with 0,65x0,65mm square pins (Pin Header)

Single- & Dual-In-Line Socket  
straight & 90° through hole version



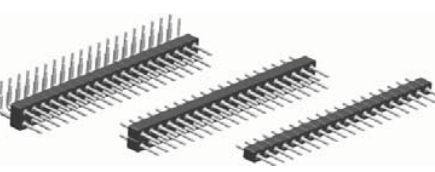
Page 10

Single- & Dual-In-Line Socket  
SMT version



Page 11 & 12

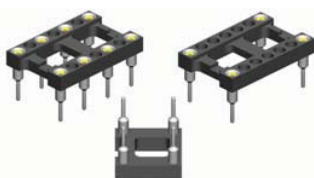
Single- & Dual-In-Line Adapter  
straight & 90° through hole version



Page 13

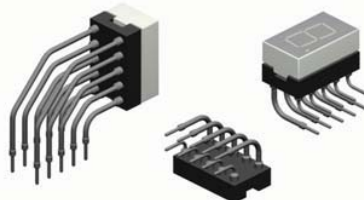
## Specials

Crystal Oscillator Sockets



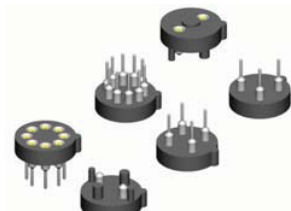
Page 25

Sockets for 7-Segment LED Displays



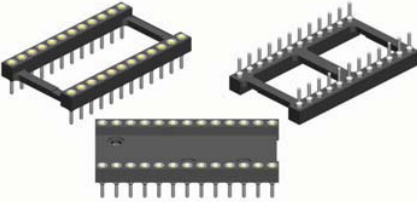
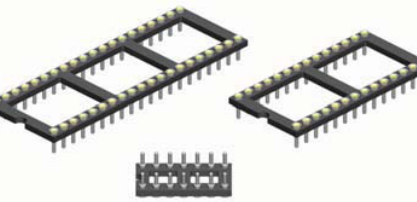
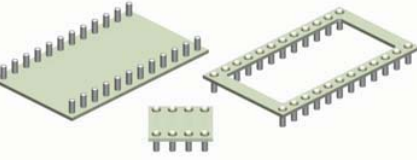
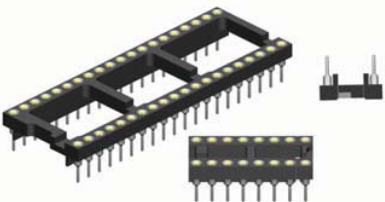
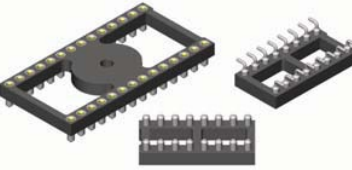
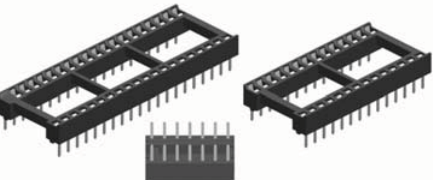
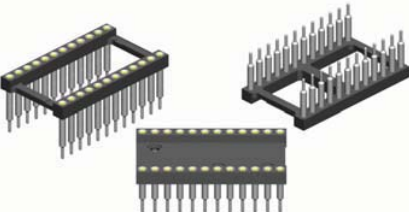
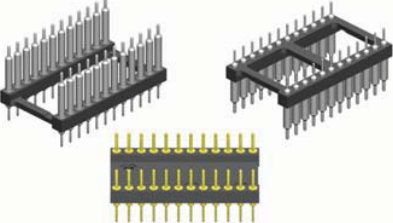
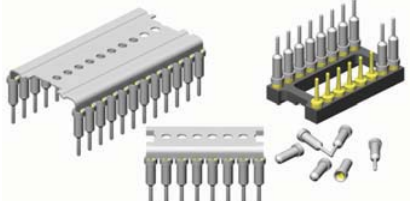
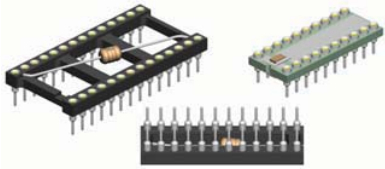
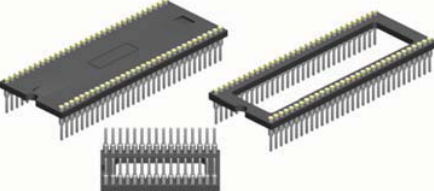
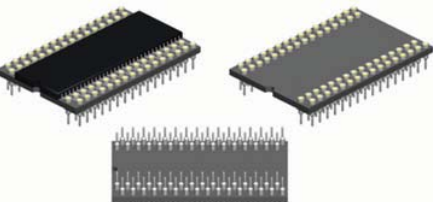
Page 26


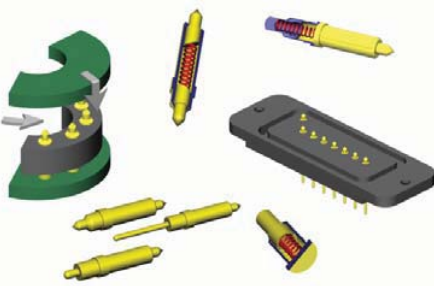
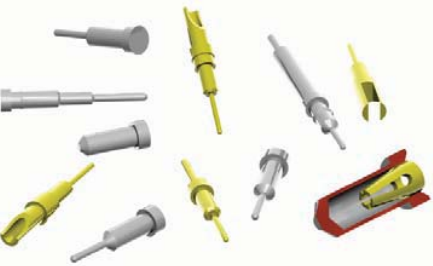
Transistor-, TO-Sockets  
& Fuse Holders



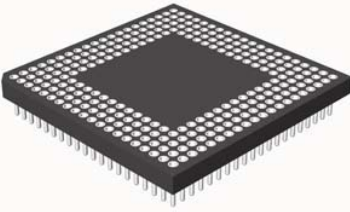
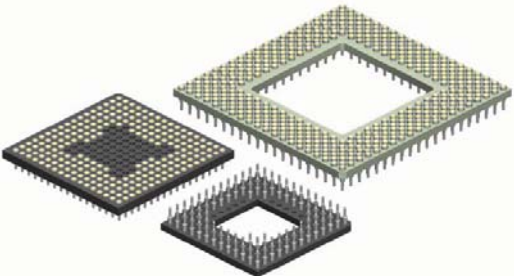
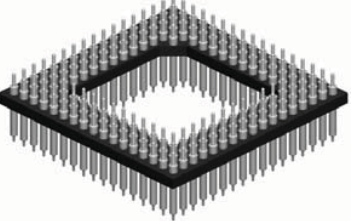
Page 27

## IC DIP SOCKETS THROUGH HOLE STYLE


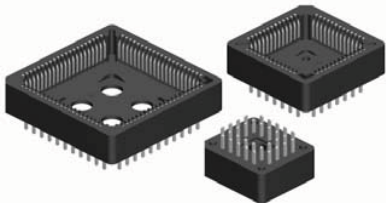
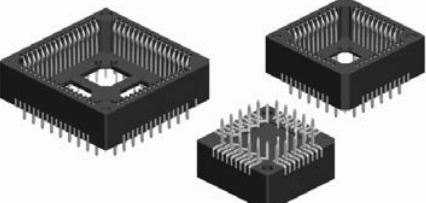
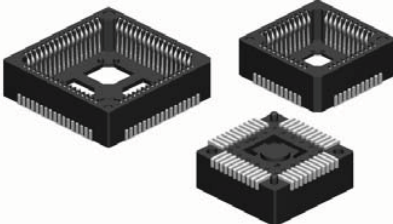
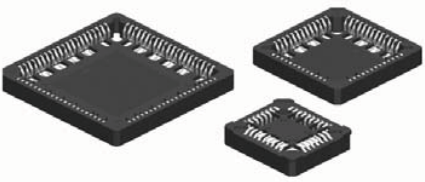
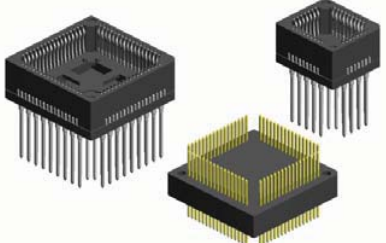
<p>Precision Contact open &amp; closed frame</p>  <p><b>Page 14</b></p>	<p>Precision Contact Low Profile</p>  <p><b>Page 17</b></p>	<p>Precision Contact Super Low Profile</p>  <p><b>Page 18</b></p>
<p>Precision Contact Socket for automatic insertion</p>  <p><b>Page 19</b></p>	<p>SMT Precision Contact</p>  <p><b>Page 21</b></p>	<p>Low Cost - stamped Contact</p>  <p><b>Page 23</b></p>
<p>Precision Contact Board Stacker open &amp; closed frame</p>  <p><b>Page 15</b></p>	<p>Precision Contact Board Spacer open &amp; closed frame</p>  <p><b>Page 16</b></p>	<p>Carrier Sockets</p>  <p><b>Page 20</b></p>
<p>Capacitor Sockets</p>  <p><b>Page 22</b></p>	<p>Shrink Sockets</p>  <p><b>Page 24</b></p>	<p>Quad-In-Line Sockets</p>  <p><b>Page 25</b></p>





<h3>TOOLS</h3>	<h3>PROBE PINS PROBE PIN CONNECTORS</h3>	<h3>TERMINALS</h3>
 <p><b>Page 44</b></p>	 <p><b>Page 45</b></p>	 <p><b>Page 46 to 48</b></p>

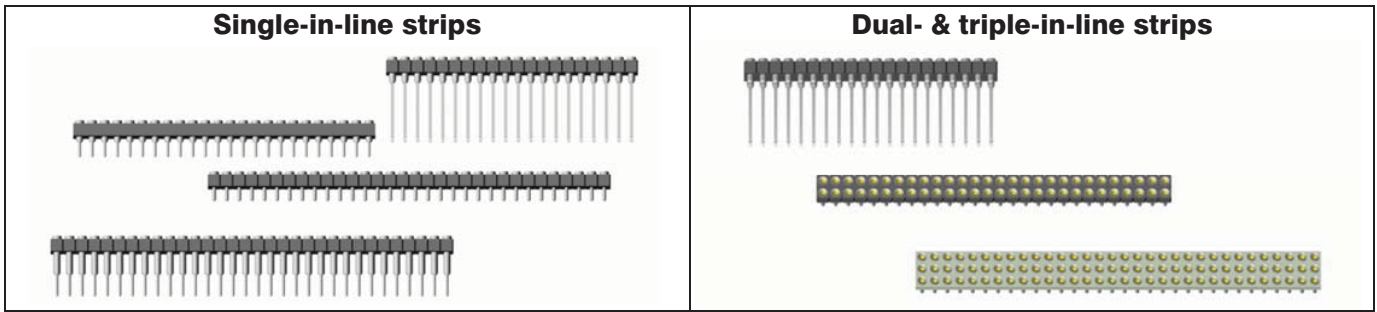
**PIN GRID ARRAY SOCKETS & ADAPTERS**

<p>MiniGrid Sockets &amp; Adapter pitch 0.80 – 1.00 – 1.50 – 2.00mm</p>  <p><b>Page 32</b></p>	<p>Sockets pitch 1.27 &amp; 2.54mm and Interstitial (2.54mm/1.27mm)</p>  <p><b>Page 29 to 31</b></p>	<p>Adapter pitch 1.27 &amp; 2.54mm and Interstitial (2.54mm/1.27mm)</p>  <p><b>Page 31 &amp; 32</b></p>
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**LCC & PLCC SOCKETS**

<p>Socket for LCC JEDEC Type “C”</p>  <p><b>Page 33</b></p>	<p>Socket for PLCC Chips through hole “Commercial” Type</p>  <p><b>Page 34</b></p>	<p>Socket for PLCC Chips through hole “Hi-Rel” Type</p>  <p><b>Page 35</b></p>
<p>Socket for PLCC Chips SMT “Hi-Rel” Type</p>  <p><b>Page 36</b></p>	<p>Socket for PLCC Chips SMT “Low Profile” Type</p>  <p><b>Page 37</b></p>	<p>Special PLCC Parts Adapter &amp; Wire Wrap Adapter</p>  <p><b>Please ask E-tec for availability</b></p>

<p><b>SIMM SOCKETS</b></p>		<p><b>DIMM SOCKETS</b></p>	
<p>Vertical &amp; 26° slanted Type 72- &amp; 80-pin</p>  <p><b>Page 38</b></p>	<p>Vertical Type 100- , 168- , 184-pin</p>  <p><b>Page 39, 40 &amp; 43</b></p>	<p>25° slanted Type 168-pin</p>  <p><b>Page 41</b></p>	<p>90° right angle Type 168-pin</p>  <p><b>Page 42</b></p>



**SIB Series**  
single-in-line Strips  
breakable and solid insulator available  
**Unless otherwise specifically requested, the strips will be delivered either in solid or breakable plastic depending on availability of the insulator bodies.**

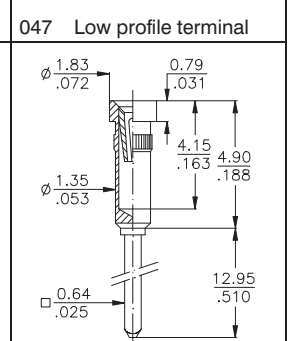
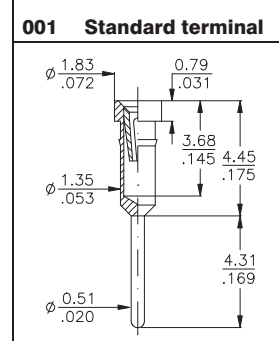
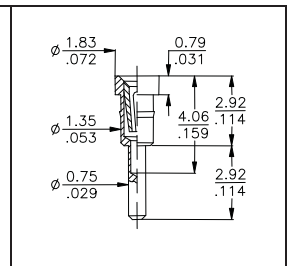
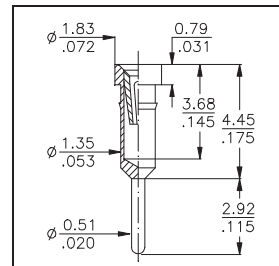
**"head flush"** **"head above"**

**SIB Series**  
**Standard "head flush"**  
**SIB-1xx-Fxxx-xx**

**Alternative: "head above"**  
**SIB-1xx-Sxxx-xx**

Number of contacts standard breakable sizes  
**20; 32 and 40**

Number of contacts either breakable or solid available  
from **02 to 40**



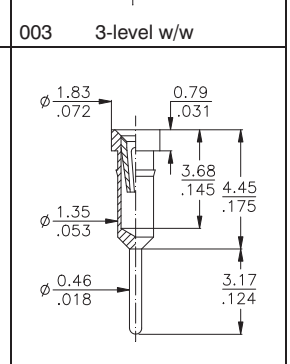
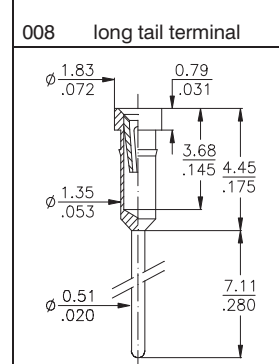
**DIS & TIS Series**  
dual and triple row 2,54mm grid

**DIS Series**  
**DIS-2xx-Fxxx-xx**

Number of contacts available  
from **04 to 80**

**TIS Series**  
**TIS-3xx-Exxx-xx**

Number of contacts available  
from **06 to 96**



**Strips**  
Other lengths & pin-outs available on request.

**Specifications**  
refer to page 49 of this catalogue

**Terminals**  
For other terminal styles please refer to the pages 46 to 48 of this catalogue or contact your closest sales office.

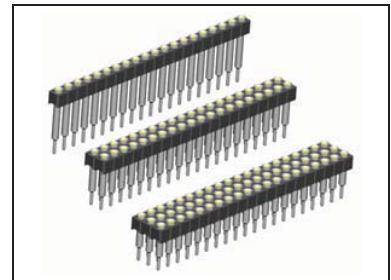
How to order

XXX - xxx - X xxx - xx

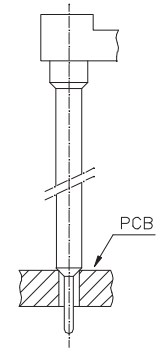
<b>Series</b> SIB = single-in-line strips. DIS = dual-in-line strips... TIS = triple-in-line strips..	<b>Rows</b> ..... 1 ..... 2 ..... 3	<b>Nbr of contacts</b> see above table	<b>Insulator</b> F = head flush S = head above E = Epoxy FR4 TIS Series only	<b>Terminal style</b> see drawings above or refer to pages 46 to 48 of this catalogue for other types.	<b>Plating</b> - 95 = tin/gold - 55 = gold/gold - 99 = tin/tin (tin is leadfree)
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Board Stacker Terminals		
 079	 623	 062
 060	 063	 080
 084	 085	 088
 065	<p><b>Many other terminals and custom specific terminal styles are available on request, or refer to the pages 46 to 48 of this catalogue.</b></p>	

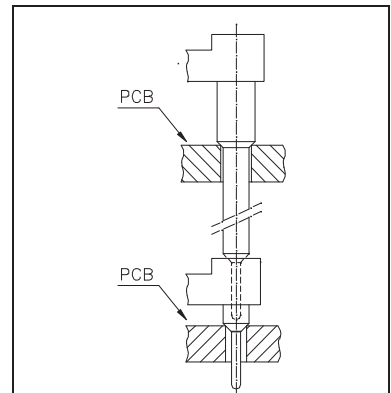


**Application Examples**



Possible Terminals:

060; 062; 063; 065; 079  
080; 084; 085; 088; 623



Possible Terminals:

060; 062; 063; 079; 623

**Specifications**  
See page 49 of this catalogue

How to order

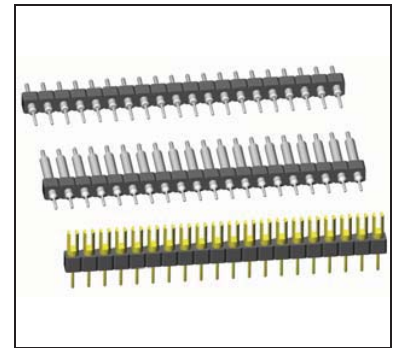
XXX - xxx - X xxx - 95

<p><b>Series</b></p> <p>SIB = single-in-line strips. DIS = dual-in-line strips... TIS = triple-in-line strips..</p>	<p><b>Rows</b></p> <p>.....1 .....2 .....3</p>	<p><b>Nbr of contacts</b></p> <p>1-row = 02 to 40 2-row = 04 to 80 3-row = 06 to 96</p>	<p><b>Insulator</b></p> <p>see socket strip page 5</p>	<p><b>Terminal style</b></p> <p>see drawings above or refer to pages 46 to 48 of this catalogue for other types.</p>	<p><b>Plating</b></p> <p>- 95 = tin/gold (tin leadfree) other on request</p>
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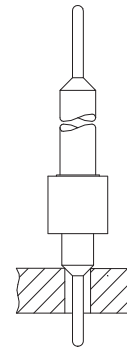




Board to Board Terminals		
 077	 057	 037
 058	 059	 056
 542	 038	 353
 036	<p><b>Many other terminals and custom specific terminal styles are available on request, or refer to the pages 46 to 48 of this catalogue.</b></p>	

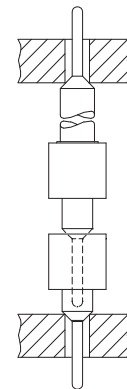


**Application Examples**



**Possible Terminals:**

037; 056; 057; 058; 059  
077; 220; 542; 544  
562; 583; 770



**Possible Terminals:**

037; 056; 057; 058; 059  
077; 078; 542; 544  
562; 583; 770

How to order

XXX - xxx - X xxx - xx

<p><b>Series</b></p> <p><b>SIB</b> = single-in-line strips.  <b>DIS</b> = dual-in-line strips...  <b>TIS</b> = triple-in-line strips..</p>	<p><b>Rows</b></p> <p>..... <b>1</b>                  ..... <b>2</b>                  ..... <b>3</b></p>	<p><b>Nbr of contacts</b></p> <p>1-row = 02 to 40                  2-row = 04 to 80                  3-row = 06 to 96</p>	<p><b>Insulator</b></p> <p><b>S</b> = Plastic  <b>E</b> = Epoxy FR4                  (TIS Series only)                  dimension see socket strip page 5</p>	<p><b>Terminal style</b></p> <p>see drawings above                  or refer to pages 46 to 48 of this catalogue for other types.</p>	<p><b>Plating</b></p> <p>- <b>55</b> = gold                  - <b>99</b> = tin (leadfree)</p>
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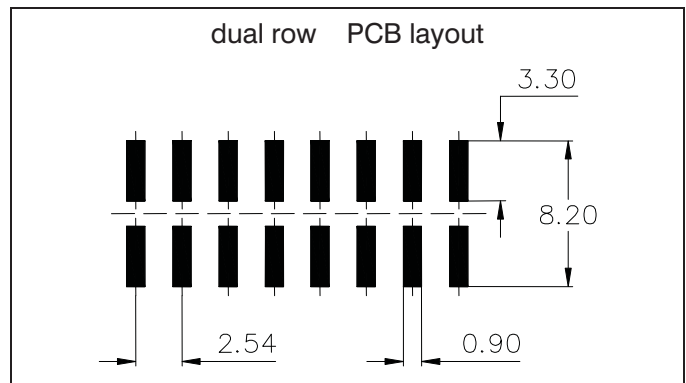
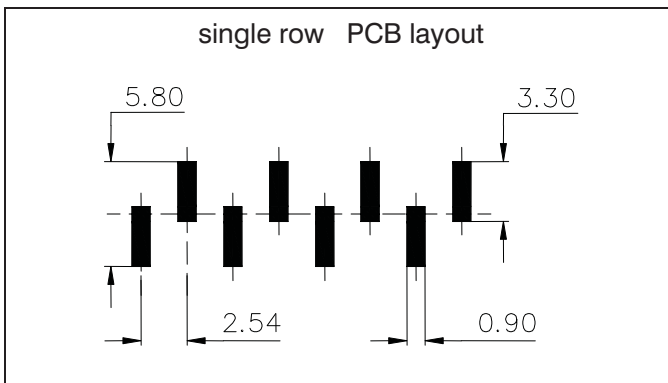
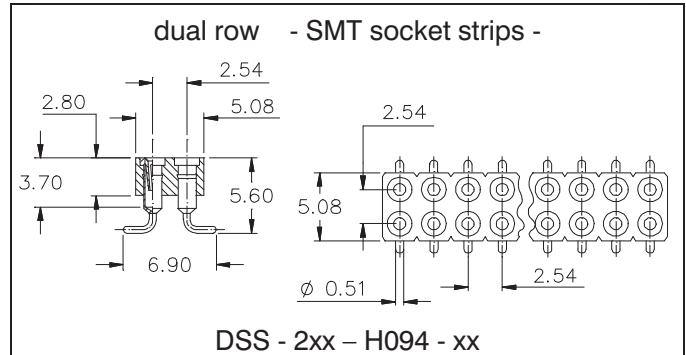
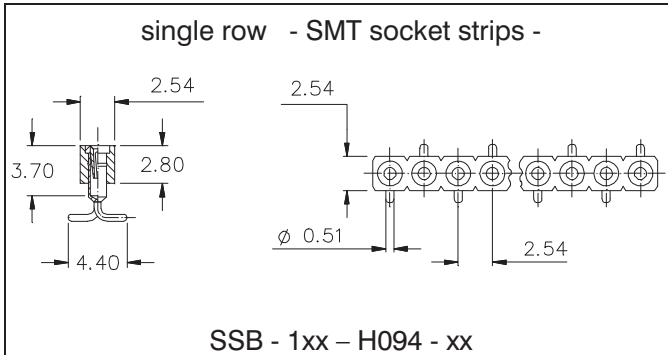
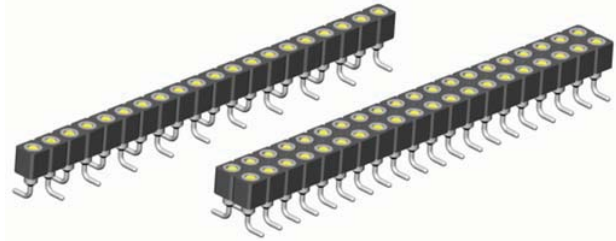


The 2,54mm pitch **SMT** socket strips with standard IC-Socket Precision Contacts can also be used in combination with the straight version SIB/DIS strips shown earlier in this catalogue.

The socket strips accept round pins with a diameter of 0,41 to 0,56mm max., as well as square pins of 0,40 x 0,40mm max.

The **SMT** socket strips are available in single and dual row.

The head of the female terminal is completely embedded in the insulator.



**Specifications**

**Mechanical data**

Insertion force contact type 900	1,80 N (avg)
Extraction force contact type 900	0,90 N (avg)
Contact life	> 100 cycles
Operating temperature	-55° C to +125° C
Processing temperature	+250°C +/-5°C for 20~40sec.

**Material**

Insulator (RoHS compliant)	high temp plastic UL 94 V-0
Terminal (RoHS compliant)	CuZn
Contact (RoHS compliant)	BeCu

**Electrical data**

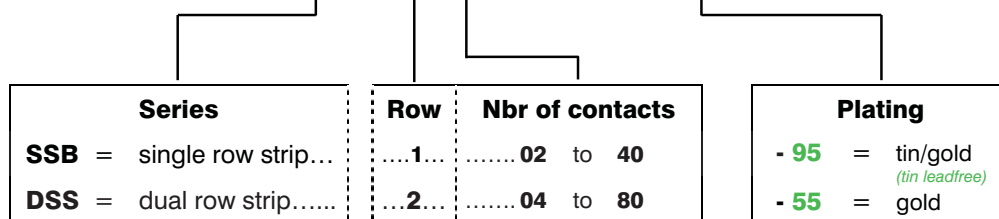
Insulation resistance	5 x 10 <sup>9</sup> Ω min.
Breakdown voltage	500 V AC for 1 minute
Contact resistance	4,3 mΩ typ.
Current rating	1 A max., 100V

**Insertion depth contact type 900**

maximum	3,68mm / .145"
minimum	2,80mm / .110"

How to order

XXX - x xx - H 094 - xx



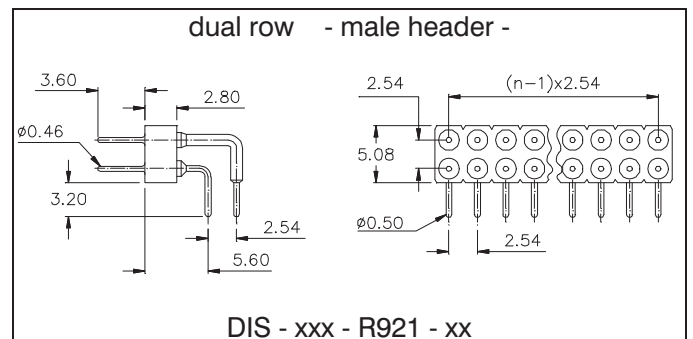
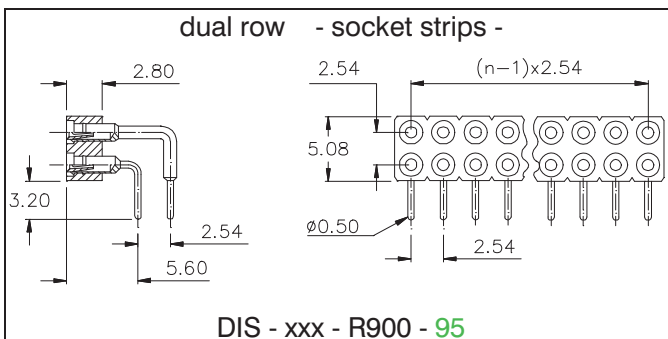
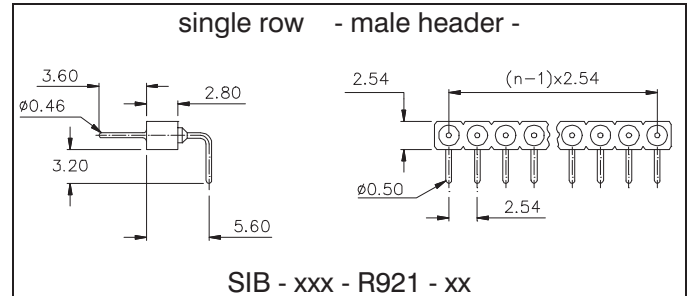
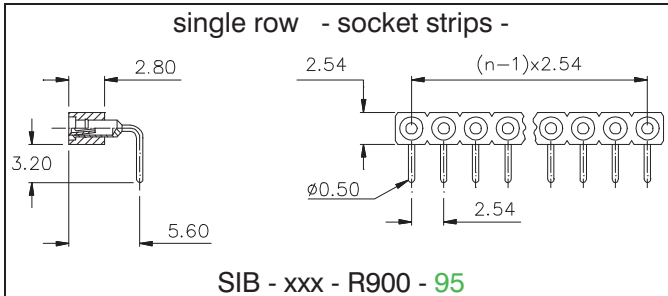
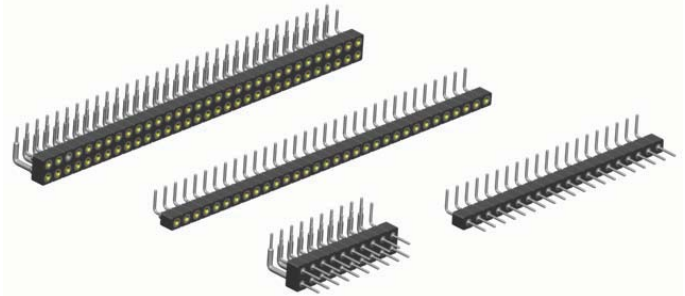
# 90° Socket Strips & Male Headers

The 2,54mm pitch 90° socket strips and male headers are designed for „board to board“ connections, and can also be used in combination with the straight version SIB/DIS strips shown earlier in this catalogue.

The socket strips accept round pins with a diameter of 0,41 to 0,56mm max., as well as square pins of 0,40 x 0,40mm max.

The socket strips and male headers are stackable and available in any pinout as shown in the below order code.

The head of the female terminal is completely embedded in the insulator.



## Specifications

**Mechanical data**

Insertion force contact type 900	1,80 N (avg)
Extraction force contact type 900	0,90 N (avg)
Contact life	> 100 cycles
Operating temperature	-55° C to +125° C
Processing temperature	+250°C +0/-5°C for 20~40sec.

**Material**

Insulator (RoHS compliant)	high temp plastic UL 94 V-0
Terminal (RoHS compliant)	CuZn
Contact (RoHS compliant)	BeCu

**Electrical data**

Insulation resistance	5 x 10 <sup>9</sup> Ω min.
Breakdown voltage	500 V AC for 1 minute
Contact resistance	4,3 mΩ typ.
Current rating	1 A max., 100V

**Insertion depth contact type 900**

maximum	3,68mm / .145"
minimum	2,80mm / .110"

How to order

XXX - x xx - R xxx - xx

<b>Series</b>	<b>Row</b>	<b>Nbr of contacts</b>	<b>Contact Type</b>	<b>Plating</b>
<b>SIB</b> = single-in-line strips	... 1	<b>02 to 40</b> 20, 32, 40 Std. breakable sizes	<b>900</b> = female	<b>Contact type „900“</b> - 95 = tin/gold (tin leadfree)
<b>DIS</b> = dual-in-line strips...	... 2	<b>04 to 72</b>	<b>921</b> = male	<b>Contact type „921“</b> - 99 = tin (tin leadfree) - 55 = gold

# BL - Series „Jumbo Contact“

## Female Headers 2,54mm pitch

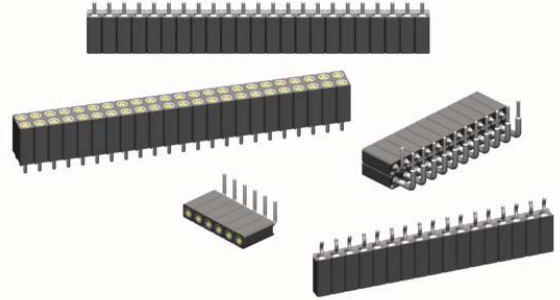


2,54mm pitch female header with precision „Jumbo Contact“ for board to board connections.

Accepts **square pins 0,65 x 0,65mm** max. (Pin Headers), as well as **round pins Ø 0,65 to 0,85mm** max.

7,00mm standard profile, and 4.50mm low profile available, other on request.

The stand-offs underneath the insulator, prevent the header from slanting during soldering.



<p><b>4.50mm Profile</b> single row -straight-</p> <p><b>BL1 - xxx - G109 - 95</b></p>	<p><b>7.00mm Profile</b> single row -straight-</p> <p><b>BL1 - xxx - G700 - 95</b></p>	<p><b>Other available Terminals</b></p> <p><b>G065P press fit type</b> For PCB thickness 1.50 to 2.00mm; plated-thru holes: Ø0,94 to 1,09mm</p>	<p>single row -right angle-</p> <p><b>BL1 - xxx - A700 - 95</b></p>
<p><b>4.50mm Profile</b> dual row -straight-</p> <p><b>BL2 - xxx - G109 - 95</b></p>	<p><b>7.00mm Profile</b> dual row -straight-</p> <p><b>BL2 - xxx - G700 - 95</b></p>	<p><b>G799 Clinched type</b> off G700 only for BL1 Series available</p>	<p>dual row -right angle-</p> <p><b>BL2 - xxx - A700 - 95</b></p>

Specifications		
<p><b>Mechanical data</b></p> <p>Insertion force (test probe Ø 0,66)</p> <p>Extraction force (test probe Ø 0,66)</p> <p>Contact life</p> <p>Operating temperature</p> <p><b>Material</b></p> <p>Insulator (RoHS compliant)</p> <p>Terminal (RoHS compliant)</p> <p>Contact (RoHS compliant)</p>	<p>1,40 N (avg) if A700, G700 &amp; G109</p> <p>2,00 N (avg) if G065P</p> <p>3,75 N (avg) if G799</p> <p>0,25 N (avg) if A700, G700 &amp; G109</p> <p>1,00 N (avg) if G065P &amp; G799</p> <p>&gt; 100 cycles</p> <p>-55° C to +125° C</p> <p>high temp plastic UL 94 V-O</p> <p>CuZn</p> <p>BeCu</p>	<p><b>Electrical data</b></p> <p>Insulation resistance</p> <p>Breakdown voltage</p> <p>Contact resistance</p> <p>Current rating</p> <p><b>Insertion depth</b></p> <p>maximum</p> <p>minimum</p> <p>10<sup>4</sup> MΩ min.</p> <p>500 V AC for 1 minute</p> <p>30 mΩ / contact max.</p> <p>3 A max., 100V</p> <p>depends on the Terminal style</p> <p>4,00mm / .157"</p>

### How to order

**BLX - XXX - X XXX - 95**

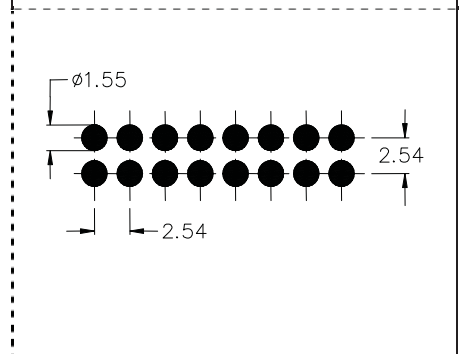
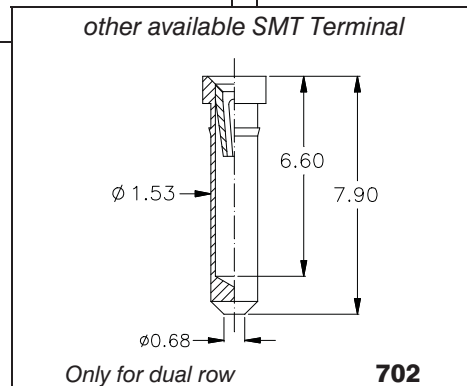
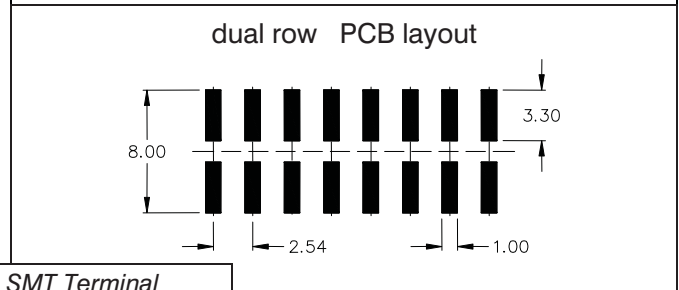
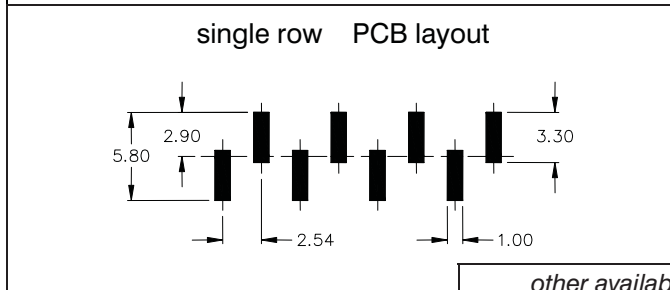
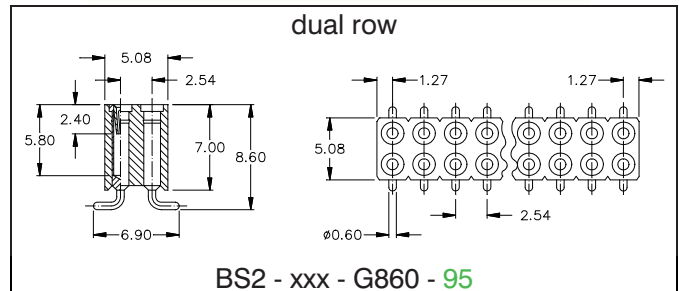
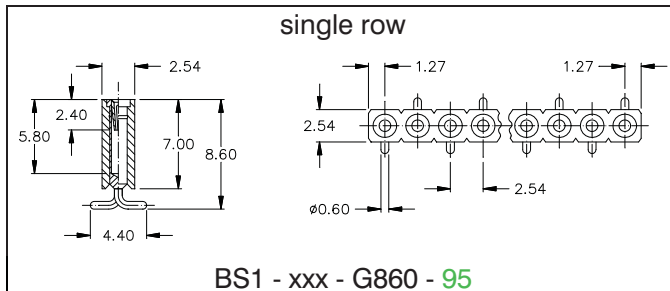
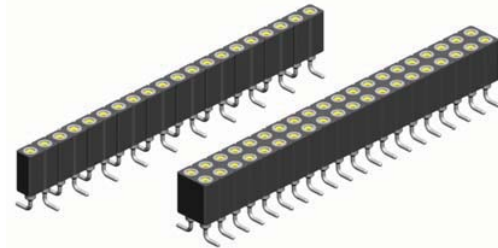
<p><b>Series</b></p> <p><b>BL1</b> = single row...</p> <p><b>BL2</b> = dual row....</p>	<p><b>Nbr of contacts</b></p> <p>.....<b>002</b> to <b>050</b></p> <p>Note: <b>002</b> to <b>040</b> only available for G109 series</p> <p>.....<b>004</b> to <b>100</b></p> <p>Note: <b>004</b> to <b>080</b> only available for G109 series</p>	<p><b>Connector style</b></p> <p><b>G</b> = straight</p> <p><b>A</b> = right angle</p>	<p><b>Terminal Type</b></p> <p>pls. ref. to the drawings shown above</p> <p>"press fit" = 065P and "clinched" type = 799</p> <p><b>not</b> available for the <b>A</b> = right angle style</p>	<p><b>Plating</b></p> <p>- <b>95</b> = tin/gold (tin leadfree)</p> <p>others on request</p>
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**SMT Female Headers** 2,54mm pitch

2,54mm pitch **SMT** female header with precision „Jumbo Contact“ for board to board connections.

Accepts square pins 0,65 x 0,65mm max. (Pin Headers), as well as round pins  $\varnothing$  0,65 to 0,85mm max.

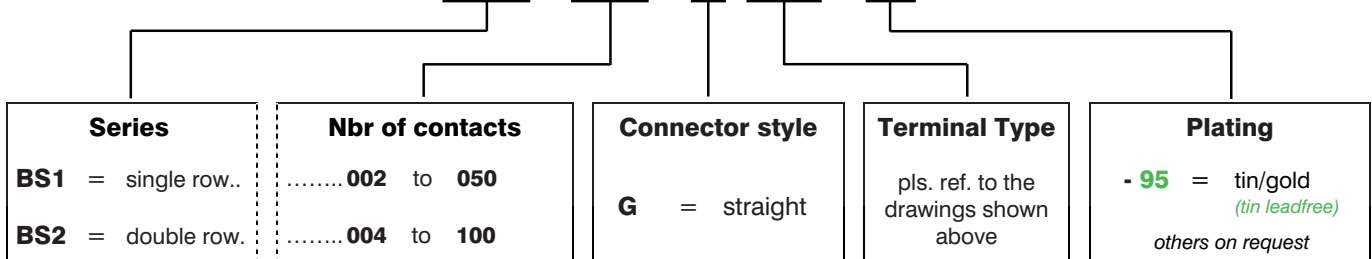
The female headers are available in any number of contacts, up to a maximum of 50 for the single row, and 100 for the double row.



Specifications			
<b>Mechanical data</b>		<b>Electrical data</b>	
Insertion force (test probe $\varnothing$ 0,66)	2,00 N if Terminal 860	Insulation resistance	$10^4$ M $\Omega$ min.
Extraction force (test probe $\varnothing$ 0,66)	1,00 N for all Terminals	Breakdown voltage	500 V AC for 1 minute
Contact life	> 100 cycles	Contact resistance	30 m $\Omega$ / contact max.
Operating temperature	-55° C to +125° C	Current rating	3 A max., 100V
Processing Temperature	+250°C +0/-5°C for 20~40sec.	<b>Insertion depth</b>	
<b>Material</b>		maximum	depends on the Terminal style
Insulator (RoHS compliant)	high temp plastic UL 94 V-O	minimum	4,0mm / .157"
Terminal (RoHS compliant)	CuZn		
Contact (RoHS compliant)	BeCu		

How to order

**BSx - xxx - G xxx - xx**

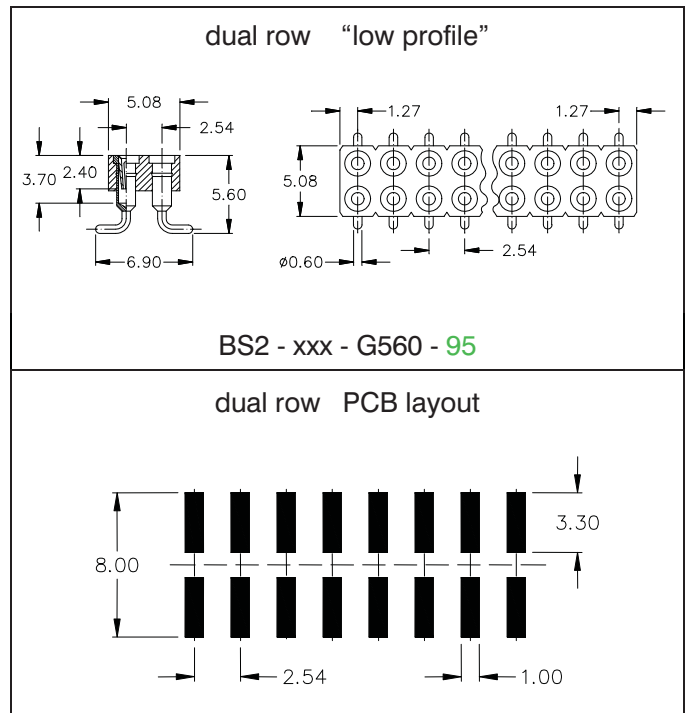
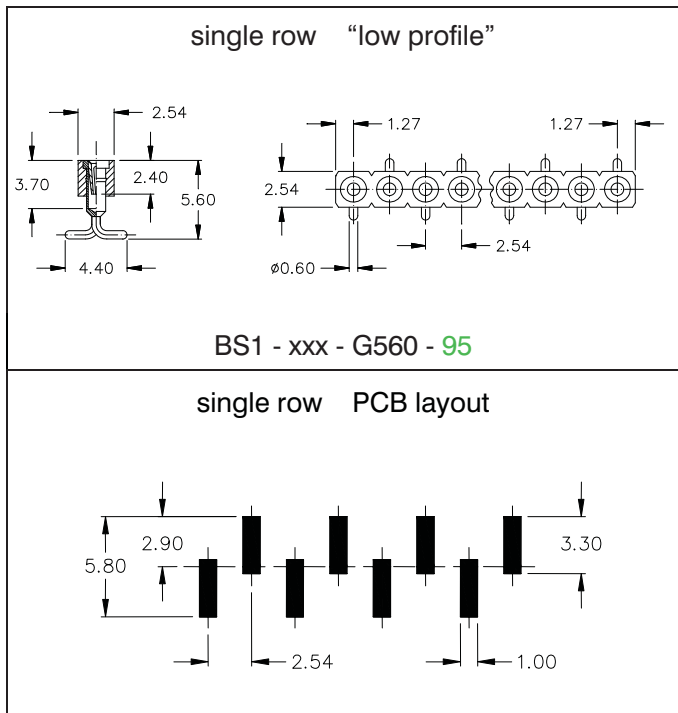
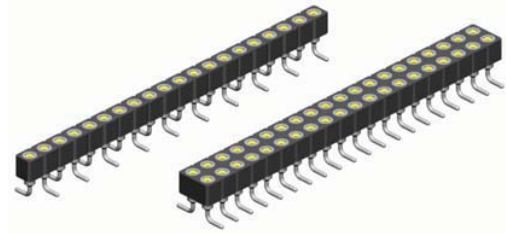




2,54mm pitch **“low profile”** SMT female header with precision „Jumbo Contact“ for board to board connections.

Accepts square pins 0,65 x 0,65mm max. (Pin Headers), as well as round pins  $\varnothing$  0,65 to 0,85mm max.

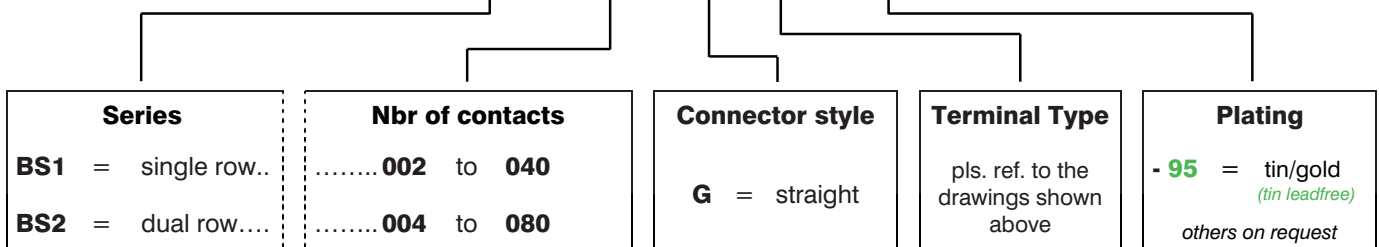
The female headers are available with 40 contacts max. for the single row, and 80 (2x40) max. for the dual row.



<b>Specifications</b>			
<b>Mechanical data</b>		<b>Electrical data</b>	
Insertion force	1,40 N (avg) (test probe $\varnothing$ 0,66)	Insulation resistance	10 <sup>4</sup> M $\Omega$ min.
Extraction force	0,25 N (avg) (test probe $\varnothing$ 0,66)	Breakdown voltage	500 V AC for 1 minute
Contact life	> 100 cycles	Contact resistance	30 m $\Omega$ / contact max.
Operating temperature	-55° C to +125° C	Current rating	3 A max., 100V
Processing Temperature	+250°C +0/-5°C for 20~40sec.	<b>Insertion depth</b>	
<b>Material</b>		maximum	3.70mm / .146"
Insulator (RoHS compliant)	high temp plastic UL 94 V-O	minimum	3.00mm / .118"
Terminal (RoHS compliant)	CuZn		
Contact (RoHS compliant)	BeCu		

**How to order**

**BSx - xxx - G 560 - 95**



# SL - Series „Jumbo“ Male Headers



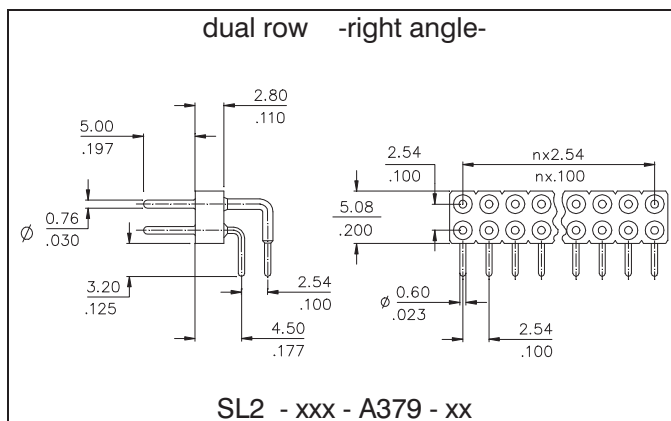
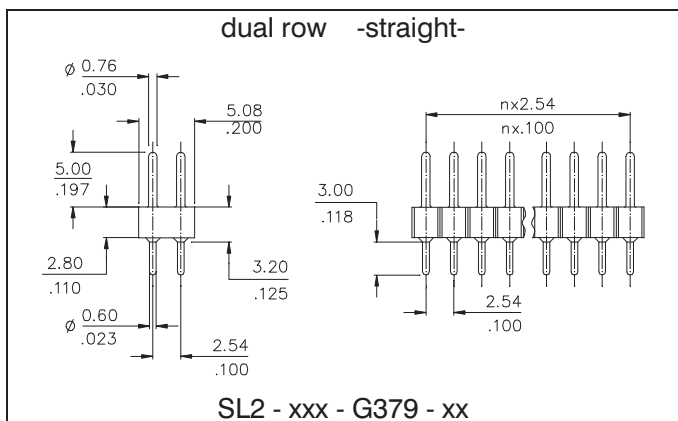
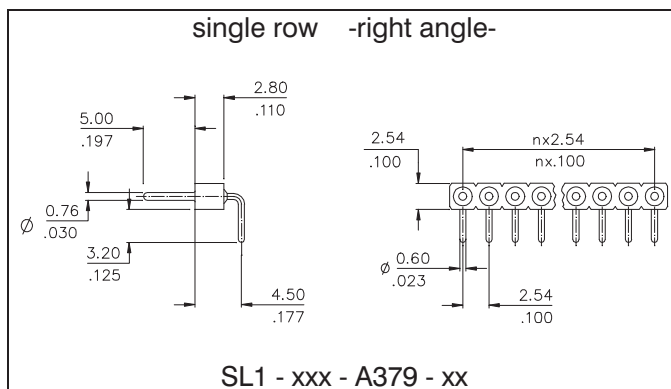
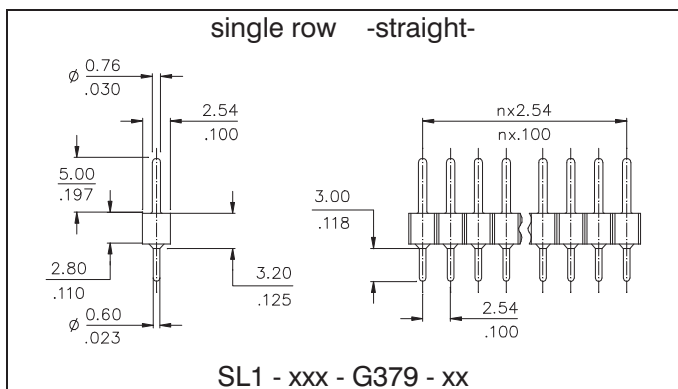
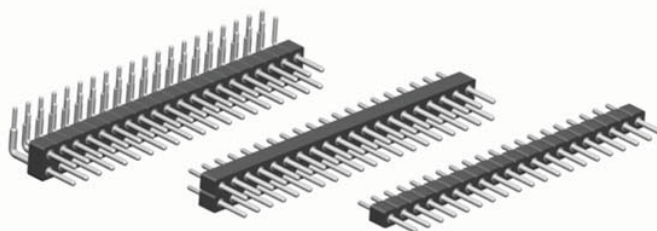
2,54mm pitch

2,54mm pitch male header with precision turned „Jumbo“ pin,  $\varnothing 0,76\text{mm} / .030$ , for board to board connections.

Mates with the „Jumbo Contact“ female headers shown in this catalogue.

The pin headers are stackable and available in single and double row version.

The pins are either completely gold or tin plated.



## Specifications

### Material

Insulator (RoHS compliant) high temp plastic UL 94 V-O  
Terminal (RoHS compliant) CuZn

**Operating temperature** -55° C to +125° C

### Electrical data

Insulation resistance 10<sup>4</sup> MΩ min.  
Breakdown voltage 500 V AC for 1 minute  
Rated voltage 60 V RMS / 90 V DC  
Contact resistance 30 mΩ / contact max.  
Current rating 3 A max.

## How to order

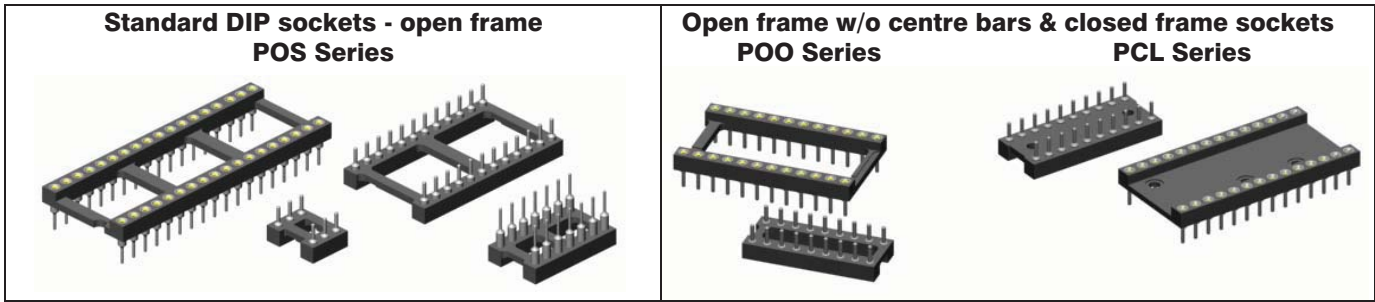
SLx - xxx - X 379 - xx

Series	
SL1	= single row.....
SL2	= dual row.....

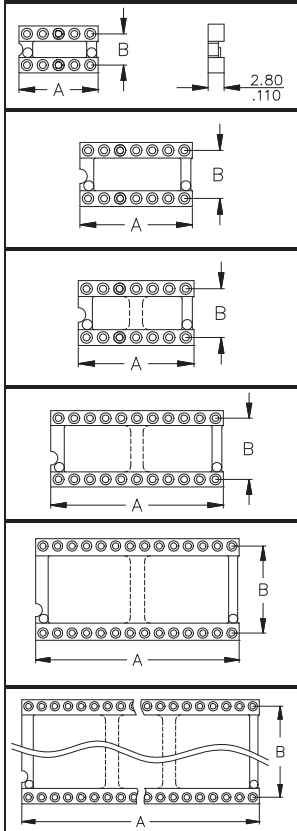
Nbr of contacts	
.....002	to 040
064	on request only
.....004	to 080 (straight style)
.....004	to 072 (right angle style)

Terminal style	
G	= straight
A	= right angle

Plating	
- 99	= tin (tin leadfree)
- 55	= gold

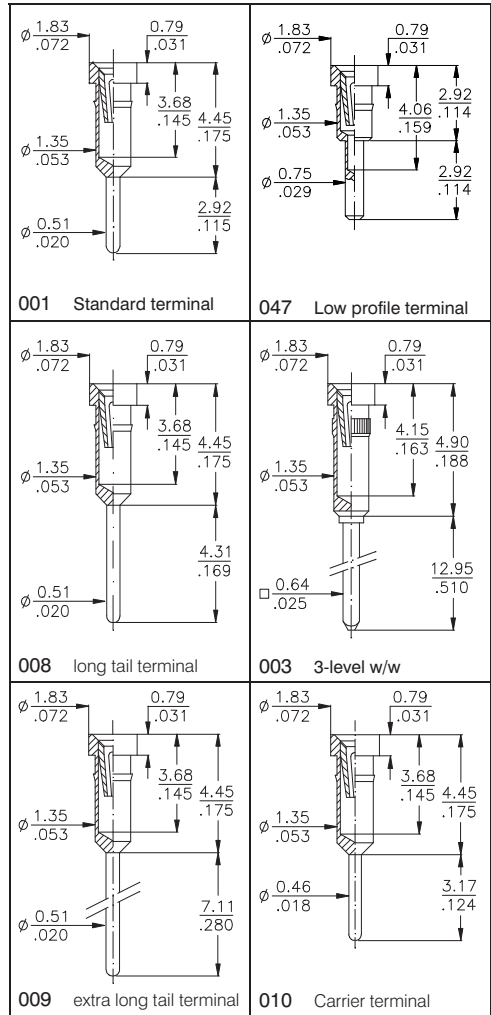


**Series POS & POO**  
- open body with and without centre bars -  
*If you need all Insulator Dimension pls. ask for customer drawing!*



**POS sockets in 7,62mm/.300" DIP spacing are either supplied with or without bars in the centre depending on plastic wafer availability. If you need sockets without centre bars, then please always order with POO instead of POS.**

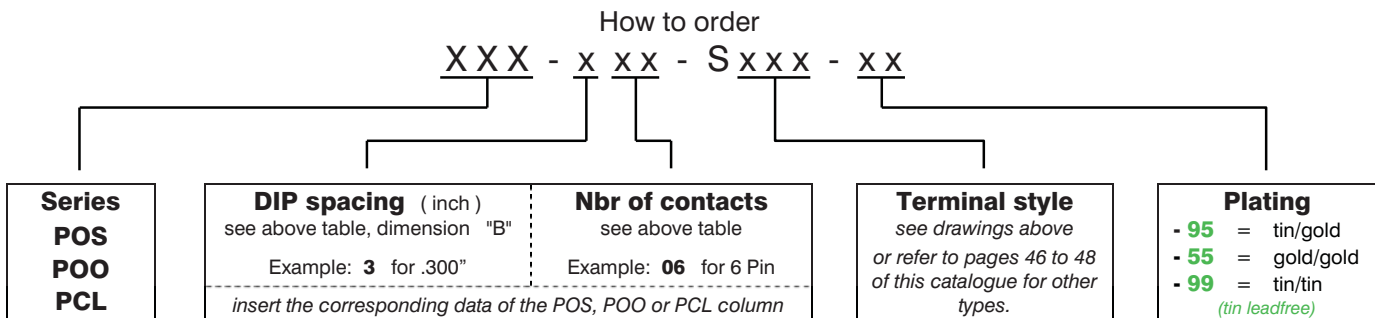
Pin	Dimension		Available Pinouts of Series		
	"A"	"B"	POS	POO	PCL
10	12,60	5,08 .200"	-	-	<b>-210-</b>
6	7,60	7,62 .300"	<b>-306-</b>	-	-
8	10,10		<b>-308-</b>	-	-
10	12,60		<b>-310-</b>	-	-
14	17,70		<b>-314-</b>	<b>-314-</b>	<b>-314-</b>
16	20,30		<b>-316-</b>	<b>-316-</b>	<b>-316-</b>
18	22,80	7,62 .300"	<b>-318-</b>	<b>-318-</b>	<b>-318-</b>
20	25,30		<b>-320-</b>	<b>-320-</b>	<b>-320-</b>
22	27,80		on request	on request	-
24	30,40		<b>-324-</b>	<b>-324-</b>	-
28	35,50		<b>-328-</b>	<b>-328-</b>	-
16	20,32	10,16 .400"	on request	on request	on request
22	27,80				
24	30,60				
24	30,50	15,24 .600"	<b>-624-</b>	<b>-624-</b>	on request
28	35,50		<b>-628-</b>	<b>-628-</b>	<b>-628-</b>
32	40,60		<b>-632-</b>	<b>-632-</b>	<b>-632-</b>
36	45,70		<b>-636-</b>	on request	-
40	50,80		<b>-640-</b>	<b>-640-</b>	<b>-640-</b>
48	60,96		<b>-648-</b>	on request	on request
64	81,26	22,86 .900"	on request	-	-



**Specifications**  
PBT and high temp plastic depending on type.  
See page 49 of this catalogue and contact factory for more details.

**Insulator body**  
POS series = open insulator - see drawings above  
POO series = open insulator w/o centre bars  
PCL series = closed insulator body

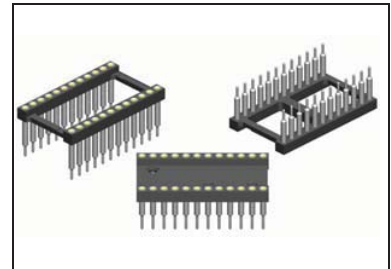
**Terminals**  
The POS, POO and PCL series are available with many different terminal styles. The most common terminal styles are shown on the right hand side of this page. Many other additional terminals can be found at the end of this catalogue. Custom design terminals are available on request.



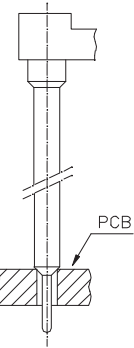




Board Stacker Terminals		
<p>079</p>	<p>623</p>	<p>062</p>
<p>060</p>	<p>063</p>	<p>080</p>
<p>084</p>	<p>085</p>	<p>088</p>
<p>065</p>	<p><b>Many other terminals and custom specific terminal styles are available on request, or refer to the pages 46 to 48 of this catalogue.</b></p>	

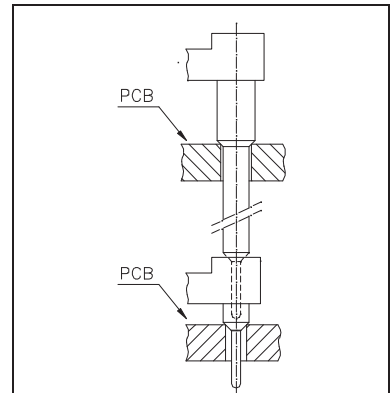


**Application Examples**



**Possible Terminals:**

060; 062; 063; 065; 079  
080; 084; 085; 088; 623



**Possible Terminals:**

060; 062; 063; 079; 623

**Specifications**  
See page 49 of this catalogue

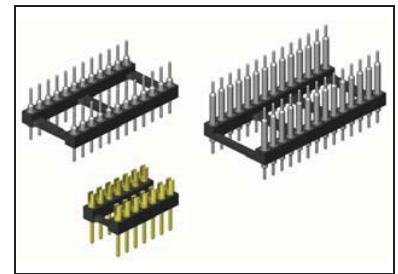
How to order

XXX - x xx - S xxx - xx

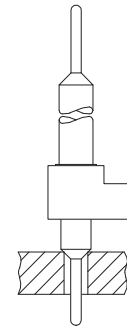
<p><b>Series</b> POS POO PCL see page 14</p>	<p><b>DIP spacing</b> in inch refer to table, dimension "B" on page 14</p>	<p><b>Nbr of contacts</b> refer to table on page 14</p>	<p><b>Terminal style</b> see drawings above or refer to pages 46 to 48 of this catalogue for other types.</p>	<p><b>Plating</b> - 95 = tin/gold (tin leadfree) other on request</p>
<p>insert the corresponding data of the POS, POO or PCL column</p>				



Board to Board Terminals		
<p>077</p>	<p>057</p>	<p>037</p>
<p>058</p>	<p>059</p>	<p>056</p>
<p>542</p>	<p>038</p>	<p>353</p>
<p>036</p>	<p><b>Many other terminals and custom specific terminal styles are available on request, or refer to the pages 46 to 48 of this catalogue.</b></p>	

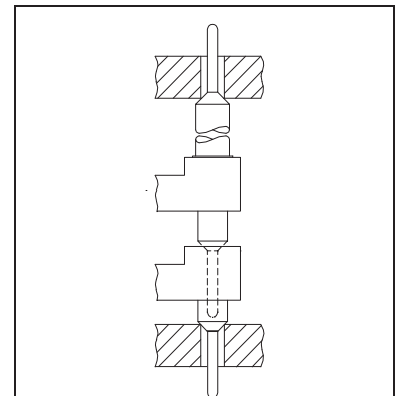


**Application Examples**



**Possible Terminals:**

037; 056; 057; 058; 059; 077  
220; 221; 542; 543; 544; 562  
770



**Possible Terminals:**

037; 056; 057; 058; 059  
077; 542; 544; 562; 770

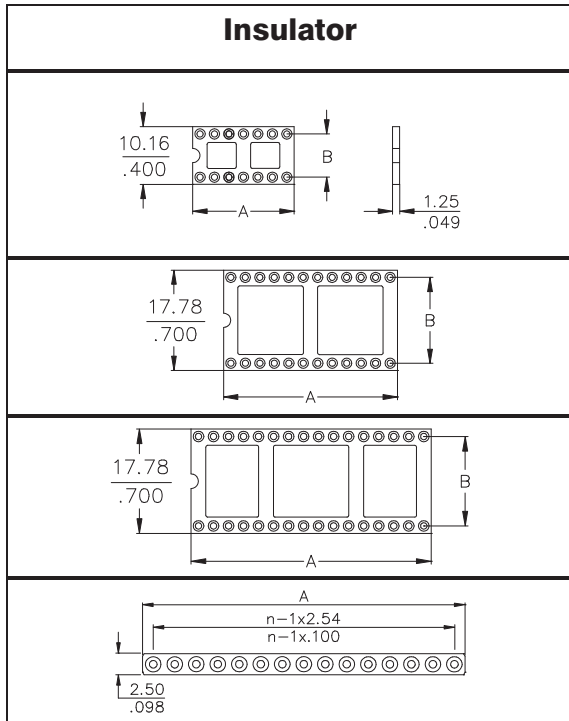
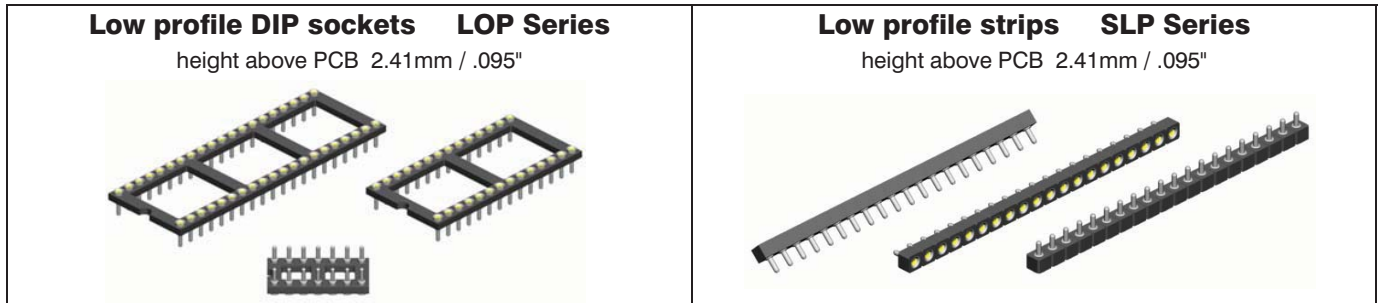
**Specifications**

See page 49 of this catalogue

How to order

**XXX - x xx - S xxx - xx**

<p><b>Series</b> POS PCL <i>see page 14</i></p>	<p><b>DIP spacing</b> in inch refer to table, dimension "B" on page 14</p>	<p><b>Nbr of contacts</b> refer to table on page 14</p>	<p><b>Terminal style</b> <i>see drawings above or refer to pages 46 to 48 of this catalogue for other types.</i></p>	<p><b>Plating</b> - 55 = gold - 99 = tin <i>(tin leadfree)</i></p>
<p><i>insert the corresponding data of the POS, POO or PCL column</i></p>				



Pin	Dimensions mm/inch		Ordering Code
	"A"	"B"	
14	17,78/.700	7,62 .300	<b>LOP - 314 - S083 - 95</b>
16	20,32/.800		<b>LOP - 316 - S083 - 95</b>
18	22,86/.900		<b>LOP - 318 - S083 - 95</b>
20	25,40/1.000		<b>LOP - 320 - S083 - 95</b>
24	30,48/1.200		<b>LOP - 324 - S083 - 95</b>
		15,24 .600	
24	30,48/1.200		<b>LOP - 624 - S083 - 95</b>
28	35,56/1.400		<b>LOP - 628 - S083 - 95</b>
		15,24 .600	
32	40,64/1.600		<b>LOP - 632 - S083 - 95</b>
40	50,80/2.000		<b>LOP - 640 - S083 - 95</b>
10	25,40/1.000		<b>SLP - 110 - S083 - 95</b>
14	35,56/1.400		<b>SLP - 114 - S083 - 95</b>

**Other sizes and flush head version on request**

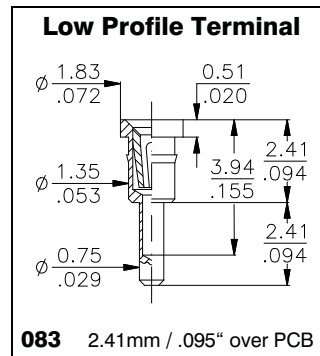
### Pin-outs

*Other pin-outs available on request.*

Despite the very low profile of these sockets the IC legs can be inserted completely.

### Recommended PCB Layout

*Recommended drilling hole dia Ø 0,8mm/.031"*



### Plating

**Standard:**

- 95 = tin/gold (tin leadfree)

**Alternative**

- 55 = gold/gold
- 99 = tin/ tin (leadfree)

### Specifications

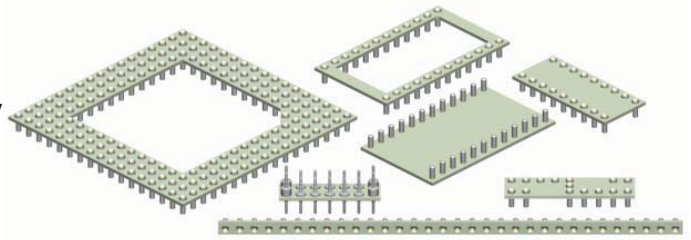
<b>Mechanical data</b>		<b>Electrical data</b>	
Insertion force	1,80 N (avg)	Contact resistance at 1A	4,3 mΩ typ.
Extraction force	0,90 N (avg)	Current rating	1A max., 100V
Contact life	> 100 cycles	Contact capacitance at 1MHz	2 pF max.
Solderability	as per IEC 60068-2-58	Insulation resistance at 500V DC	5 × 10 <sup>9</sup> Ω min.
Contact security:		Breakdown voltage at 60 Hz	500 V AC
-Vibration	as per EN60352-4	Contact resistance	≤ 7 mΩ
-Shock	as per EN60352-4	<b>Operating temperature</b>	-55° C to +125° C
<b>Material</b>		<b>Pitch</b>	2,54 mm (.100")
Insulator (RoHS compliant)	PBT UL 94 V-0	<b>More information, for example about testresult please ref. to page 49 or contact E-tec.</b>	
Terminal (RoHS compliant)	CuZn		
Contact (RoHS compliant)	BeCu		



E-tec's super low profile sockets and adapters are designed for use in applications where height above board is most critical.

The sockets have a profile of 0,60mm above board and they can be combined with the adapters to achieve a board to board interconnection height of 2,20mm max.

Also available in this socket range are the ultra low profile SMT sockets with a height above board of only 3,45mm.



Super Low Profile Sockets						Super Low Profile Adapters			
SMT use		through hole use							
								<p style="text-align: center;"><b>Style 377</b></p>	
<b>Terminal style</b>	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"				
<b>144</b>	3,45/.136	3,05/.120	0,94/.037	0,45/.018	1,15/.045				

Specifications			
<b>Mechanical data</b>		<b>Electrical data</b>	
Force per contact (avg)	0,70N insertion / 0.25N extraction	Breakdown voltage at 60 Hz	500 V AC
Contact life	>50 cycles min.	Contact resistance at 1A	4,3 mΩ typ
Solderability	as per IEC 60068-2-58	Insulation resistance	5 × 10 <sup>9</sup> Ω min.
<b>Material</b>		Current rating	1A max., 100V
Terminal (RoHS compliant)	BeCu	Capacitance	2 pF max.
Insulator (RoHS compliant)	Glass Epoxy FR4	<b>Operating temperature</b>	-55 °C to +125 °C

### How to order

**XXX - x xx - E xxx (- xxx) - xx (/x)**

Series	
<b>LSP</b>	= DIP sockets
<b>SSP</b>	= SIP sockets
<b>DSP</b>	= 2-row SIP's
<b>PGS</b>	= PGA sockets
<b>ZZS</b>	= Zig-Zag sockets

DIP spacing	Nbr of contacts
<i>see pages</i>	
for LSP series:	POS
for SSP series:	SIB/SIS
for DSP series:	DIS
for ZZS series:	ZZP
for PGS series:	PGA
only nbr of contacts	

**Terminal styles**

See drawings above for 2,54mm and 2,00mm pitch.

For 1,27mm pitch please contact nearest sales office.

Plating
- <b>95</b> = tin/gold (tin leadfree) (not available for adapter terminals)
- <b>55</b> = gold/gold
- <b>99</b> = tin/tin (leadfree)

Pitch
Complete with
<b>1</b> = 1,27mm
<b>2</b> = 2,00mm
2.54mm pitch is standard.
Others available on request

**Grid size & Configuration code only for PGA sockets**

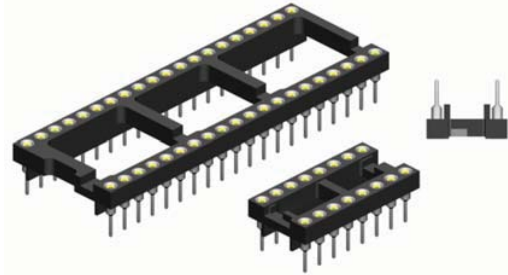
Please refer to PGA socket pages 29 to 31



The terminals can be bent before and cut after the soldering process.

Open frame sockets with rails under the plastic as required by certain auto-insert machines.

Delivered in tubes with correct orientation.



Socket Drawing "top view"		PIN	Dimensions mm/inch			Ordering Code
DIM "B" = 7,62mm / .300"	DIM "B" = 15,24mm / .600"		"A"	"B"	"C"	
		08	10,16 / .400	7,62 .300	4,50 .177	<b>POA-308-Sxxx-95</b>
		14	17,78 / .700			<b>POA-314-Sxxx-95</b>
		16	20,32 / .800			<b>POA-316-Sxxx-95</b>
		18	22,86 / .900			<b>POA-318-Sxxx-95</b>
		20	25,40 / 1.000			<b>POA-320-Sxxx-95</b>
		24	30,48 / 1.200			<b>POA-324-Sxxx-95</b>
		28	35,56 / 1.400			<b>POA-328-Sxxx-95</b>
		24	30,48 / 1.200			<b>POA-624-Sxxx-95</b>
		28	35,56 / 1.400	<b>POA-628-Sxxx-95</b>		
				40	50,80 / 2.000	<b>POA-640-Sxxx-95</b>

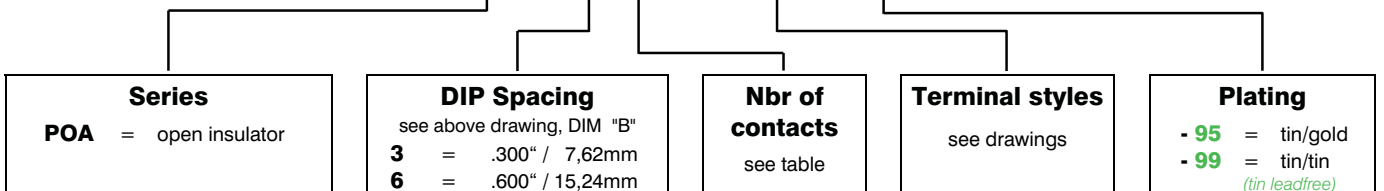
  

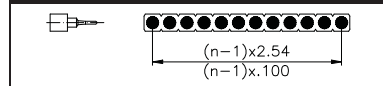
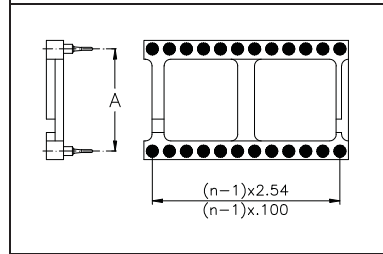
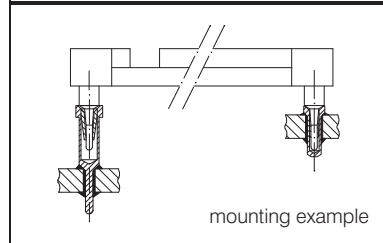
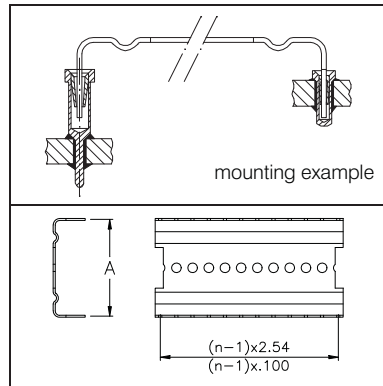
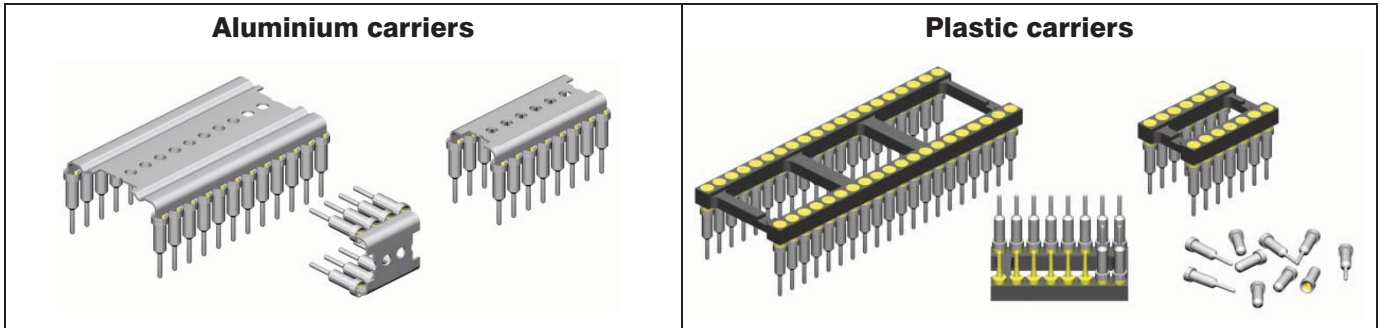
Socket Drawing "side view"	Terminal styles

Specifications			
<b>Mechanical data</b>		<b>Electrical data</b>	
Insertion force	1,80 N (avg)	Contact resistance at 1A	4,3 mΩ typ.
Extraction force	0,90 N (avg)	Current rating	1A max., 100V
Contact life	> 100 cycles	Contact capacitance at 1MHz	2 pF max.
Solderability	as per IEC 60068-2-58	Insulation resistance at 500V DC	5 × 10 <sup>9</sup> Ω min.
Contact security:		Breakdown voltage at 60 Hz	500 V AC
-Vibration	as per EN60352-4	Contact resistance	≤7 mΩ
-Shock	as per EN60352-4	<b>Operating temperature</b>	-55° C to +125° C
<b>Material</b>		<b>Pitch</b>	2,54 mm (.100")
Insulator (RoHS compliant)	PBT UL 94 V-0	<b>More information, for example about testresult please ref. to page 49 or contact E-tec.</b>	
Terminal (RoHS compliant)	CuZn		
Contact (RoHS compliant)	BeCu		

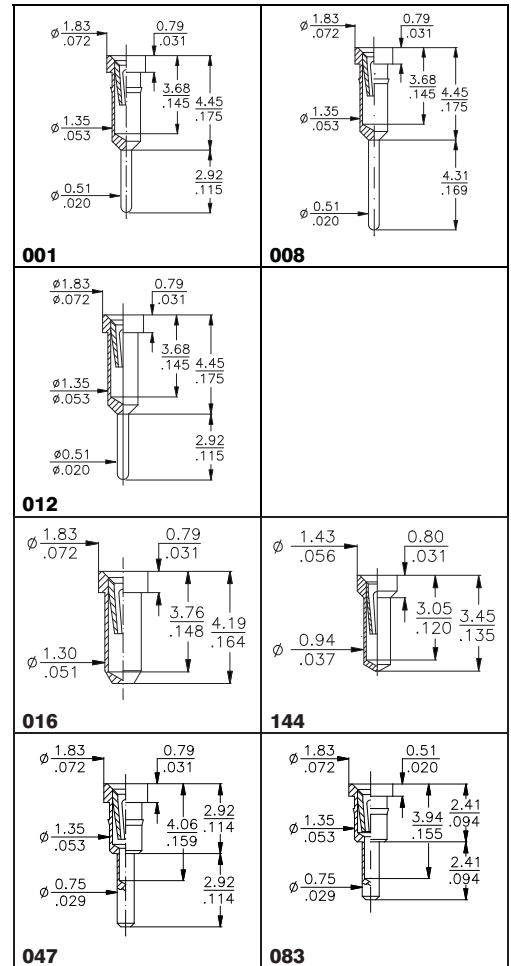
How to order

POA - x x x - S x x x - x x





PIN	DIM "A" mm/inch	Ordering Code	
6	7,62/.300	<b>DCA-306-Sxxx-95</b>	
8		<b>DCA-308-Sxxx-95</b>	
14		<b>DCA-314-Sxxx-95</b>	
16		<b>DCA-316-Sxxx-95</b>	
18		<b>DCA-318-Sxxx-95</b>	
20		<b>DCA-320-Sxxx-95</b>	
22	<b>DCA-322-Sxxx-95</b>		
24	15,24/.600	<b>DCA-624-Sxxx-95</b>	
28		<b>DCA-628-Sxxx-95</b>	
40		<b>DCA-640-Sxxx-95</b>	
6		7,62/.300	<b>DCP-306-Sxxx-95</b>
8			<b>DCP-308-Sxxx-95</b>
10			<b>DCP-310-Sxxx-95</b>
14	<b>DCP-314-Sxxx-95</b>		
16	<b>DCP-316-Sxxx-95</b>		
18	<b>DCP-318-Sxxx-95</b>		
20	<b>DCP-320-Sxxx-95</b>		
24	<b>DCP-324-Sxxx-95</b>		
28	15,24/.600	<b>DCP-624-Sxxx-95</b>	
28		<b>DCP-628-Sxxx-95</b>	
32		<b>DCP-632-Sxxx-95</b>	
36		<b>DCP-636-Sxxx-95</b>	
40		<b>DCP-640-Sxxx-95</b>	
48		<b>DCP-648-Sxxx-95</b>	
2 to 32	single strip	<b>SCP-1xx-Sxxx-95</b>	
4 to 80	double strip	<b>SCP-2xx-Sxxx-95</b>	



**Specifications**  
See page 49 of this catalogue

**Terminals**  
For other terminal styles please refer to the pages 46 to 48 of this catalogue or contact your closest sales office.

**Carrier Material**  
DCP & SCP series : PBT or high temp plastic UL 94 V-0 depending on pincount  
DCA series : Aluminum

How to order

XXX - x xx - S xxx - 95

**Series**

<b>DCA</b>	=	DIL Alu Carrier
<b>DCP</b>	=	DIL Plastic Carrier
<b>SCP</b>	=	SIL Plastic Carrier

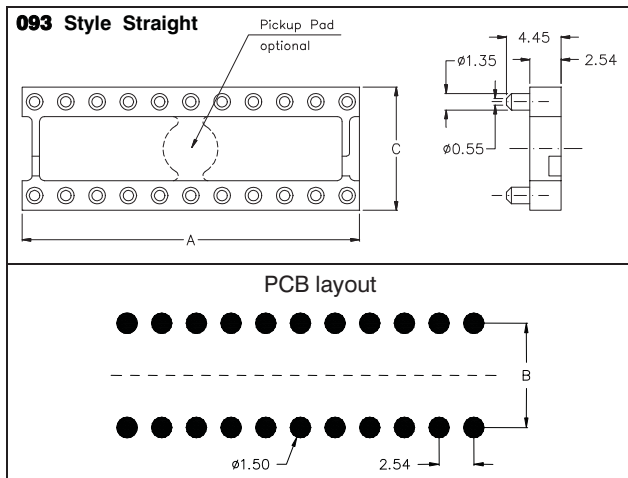
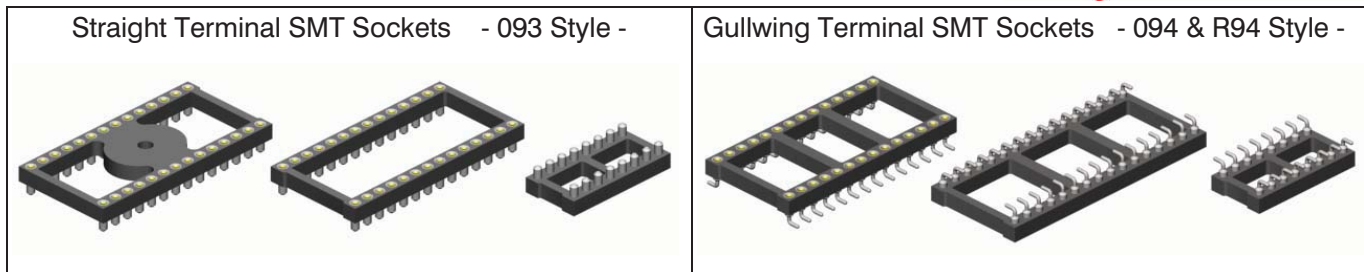
**Pitch**

<b>1</b>	=	only for SCP Series
<b>2</b>	=	only for SCP Series
<b>3</b>	=	.300" / 7,62mm
<b>4</b>	=	.400" / 10,16mm
<b>6</b>	=	.600" / 15,24mm
<b>9</b>	=	.900" / 22,86mm

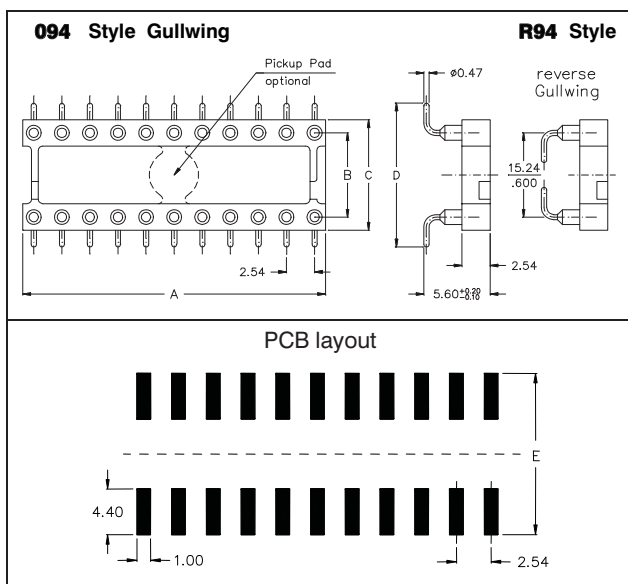
**Nbr of contacts**  
see Ordering Code table above

**Terminal style**  
see drawings above  
or refer to pages 46 to 48 of this catalogue for other types.

**Plating**  
- 95 = tin/gold  
(tin leadfree)



Pin	Dimensions (mm/inch)				Ordering Code
	"A"	"B"	"C"		
6	7,62/.300	7,62 .300	10,16 .400		<b>PSO-306-H093-95</b>
8	10,16/.400			<b>PSO-308-H093-95</b>	
10	12,70/.500			<b>PSO-310-H093-95</b>	
14	17,78/.700			<b>PSO-314-H093-95</b>	
16	20,32/.800			<b>PSO-316-H093-95</b>	
18	22,86/.900			<b>PSO-318-H093-95</b>	
20	25,40/1.000			<b>PSO-320-H093-95</b>	
24	30,48/1.200	15,24 .600	17,78 .700		<b>PSO-624-H093-95</b>
28	35,56/1.400			<b>PSO-628-H093-95</b>	
32	40,64/1.600			<b>PSO-632-H093-95</b>	
36	45,72/1.800			<b>PSO-636-H093-95</b>	
40	50,80/2.000			<b>PSO-640-H093-95</b>	
48	60,96/2.400			<b>PSO-648-H093-95</b>	



Pin	Dimensions (mm/inch)					Ordering Code	
	"A"	"B"	"C"	"D"	"E" 094 Style		
10	12,70/.500	5,08 .200	7,62 .300	10,46 .412		<b>PSO-210-H094-95</b>	
6	7,62/.300	7,62 .300	10,16 .400	13,00 .512	15,00 .590	<b>PSO-306-H094-95</b>	
8	10,16/.400					<b>PSO-308-H094-95</b>	
10	12,70/.500					<b>PSO-310-H094-95</b>	
14	17,78/.700					<b>PSO-314-H094-95</b>	
16	20,32/.800					<b>PSO-316-H094-95</b>	
18	22,86/.900				<b>PSO-318-H094-95</b>		
20	25,40/1.000				<b>PSO-320-H094-95</b>		
				"E" 094 Style	"E" R 94 Style		
24	30,48/1.20	15,24 .600	17,78 .700	20,70 .815	22,70 .894	16,50 .650	
28	35,56/1.40						<b>PSO-624-Hxxx-95</b>
32	40,64/1.60						<b>PSO-628-Hxxx-95</b>
36	45,72/1.80						<b>PSO-632-Hxxx-95</b>
40	50,80/2.00						<b>PSO-640-Hxxx-95</b>

<p><b>Body types</b></p> <p>Standard = Open frame (PSO Series)</p> <p>Optional = Closed frame (PSC Series)</p>	<p><b>Insulator</b></p> <p>high-temp plastic UL 94 V-0 (RoHS compliant)</p> <p>For further technical data refer to page 49</p>	<p><b>Temperature</b></p> <p>Operating temp. -55 °C to +125 °C</p> <p>Processing temp. +250°C +0/-5°C for 20~40sec.</p>
--	--	---

How to order

PSO - x xx - H xxx - 95 (/P) — if with Pickup Pad only 28- & 32-pin -others on request-

**Series**

**PSO** = open frame

**PSC** = closed frame

please contact sales office for more details

**DIP spacing**

in inch

see table, Dim "B"

Example: **3** for ".300"

**Nbr of contacts**

see table

Example: **06** for 6 Pin

**Terminal styles**

**093** = straight

**094** = gullwing

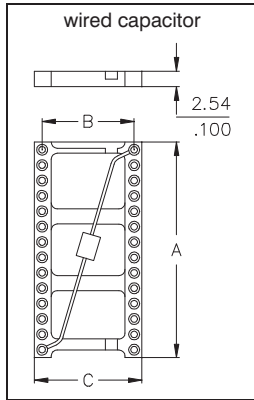
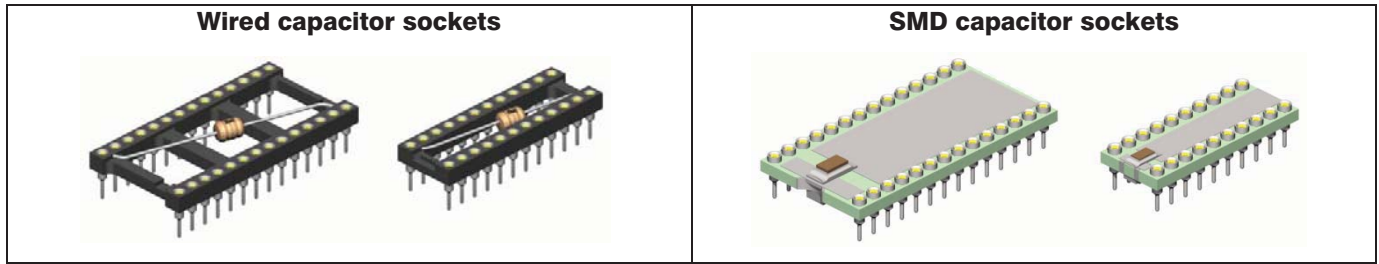
**R94** = reverse gullwing

**933** = floating on request

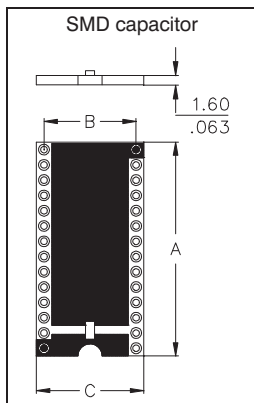
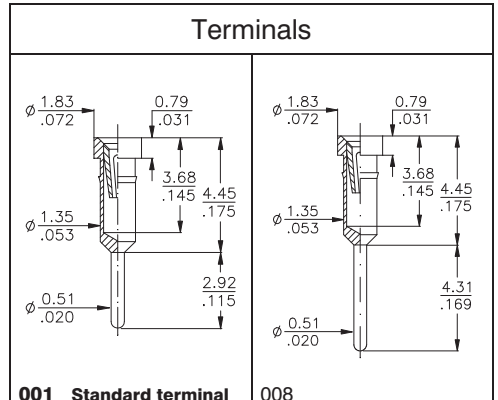
**Plating**

- **95** = tin/gold (tin leadfree)

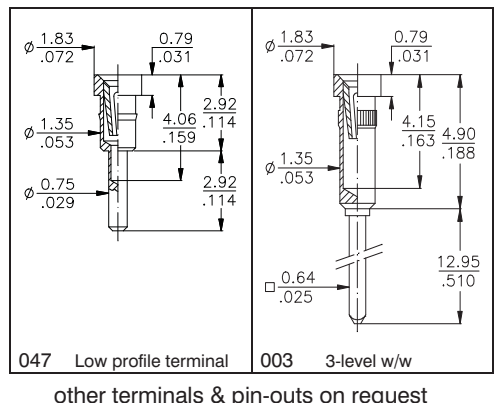
others on request



Pin	"A"	"B"	"C"	Ordering code
8	10,16/.400	7.62 .300	10.16 .400	<b>QIT-308-W001-95</b>
14	17,78/.700			<b>QIT-314-W001-95</b>
16	20,32/.800			<b>QIT-316-W001-95</b>
18	22,86/.900			<b>QIT-318-W001-95</b>
20	25,40/1.00			<b>QIT-320-W001-95</b>
24	30,48/1.20			<b>QIT-324-W001-95</b>
28	35,56/1.40	15.24 .600	17.78 .700	<b>Not available</b>
24	30,48/1.20			<b>QIT-624-W001-95</b>
28	35,56/1.40			<b>QIT-628-W001-95</b>
32	40,64/1.60			<b>QIT-632-W001-95</b>
40	50,80/2.00			<b>QIT-640-W001-95</b>



Pin	"A"	"B"	"C"	Ordering code
8	10,16/.400	7.62 .300	10.16 .400	<b>QIT-308-S001-95</b>
14	17,78/.700			<b>QIT-314-S001-95</b>
16	20,32/.800			<b>QIT-316-S001-95</b>
18	22,86/.900			<b>QIT-318-S001-95</b>
20	25,40/1.00			<b>QIT-320-S001-95</b>
24	30,48/1.20			<b>QIT-324-S001-95</b>
28	35,56/1.40	15.24 .600	17.78 .700	<b>QIT-328-S001-95</b>
24	30,48/1.20			<b>QIT-624-S001-95</b>
28	35,56/1.40			<b>QIT-628-S001-95</b>
32	40,64/1.60			<b>QIT-632-S001-95</b>
40	50,80/2.00			<b>QIT-640-S001-95</b>



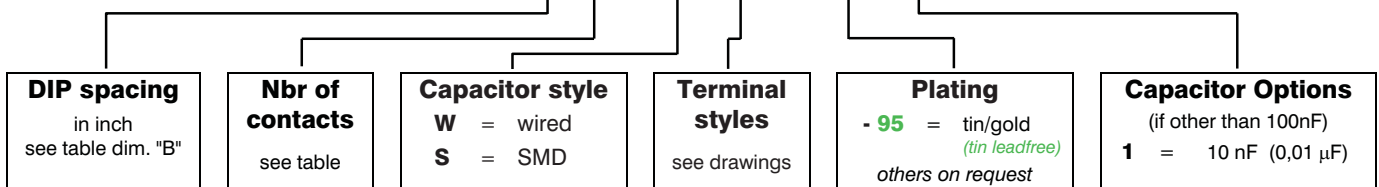
other terminals & pin-outs on request

Socket Specifications			
<b>Mechanical data</b>	Insertion force Extraction force Contact life Solderability Contact security: -Vibration -Shock	1,80 N (avg) 0,90 N (avg) > 100 cycles as per IEC 60068-2-58  as per EN60352-4 as per EN60352-4	<b>Electrical data</b> Contact resistance at 1A Current rating Contact capacitance at 1MHz Insulation resistance at 500V DC Breakdown voltage at 60 Hz Contact resistance
<b>Material</b>	Insulator Terminal Contact	(RoHS compliant) (RoHS compliant) (RoHS compliant)	4,3 mΩ typ. 1A max., 100V 2 pF max. 5 × 10 <sup>9</sup> Ω min. 500 V AC ≤ 7 mΩ
		Hi temp plastic UL 94 V-0 (wired version) Epoxy FR4 if with SMD capacitor CuZn BeCu	<b>Operating temperature</b> Pitch
			-55° C to +125° C 2,54 mm (.100")
<b>More information, for example about testresult please ref. to page 49 or contact E-tec.</b>			

Capacitor Specifications			
<b>General data</b>	Ceramic material Voltage	Z5U 50 V	<b>Available capacitor values</b> Standard type Alternatives:
			100nF (0.1 μF) 10nF (0.01 μF)

How to order

QIT - x x x - X x x x - 95 ( / x )

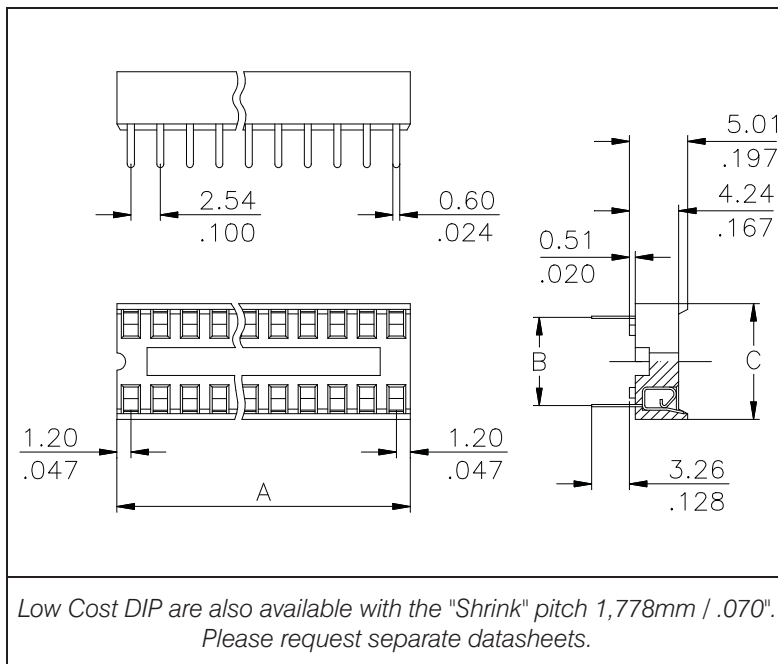
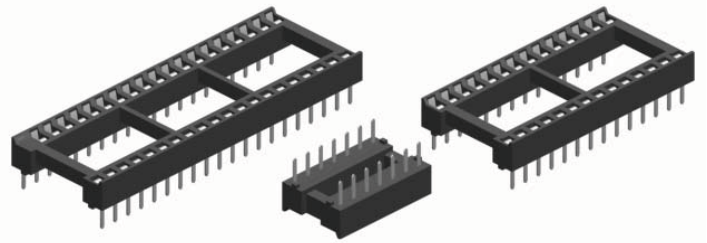




Available in sizes of 6 to 48 pins.

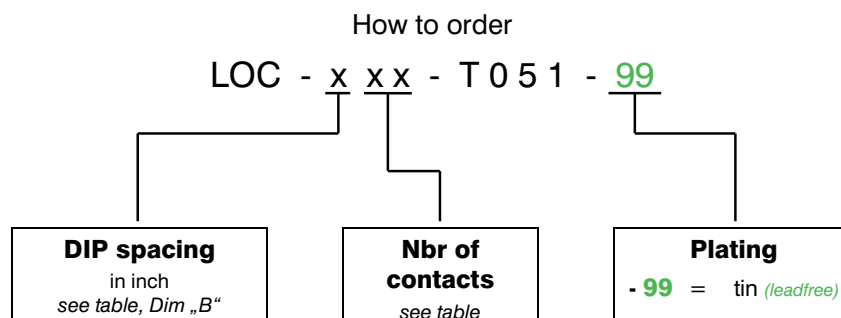
Low profile & dual-beam contact design.

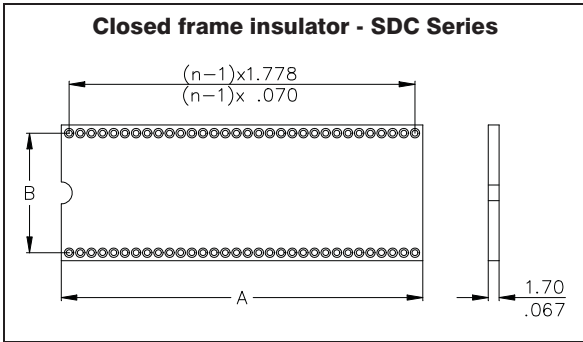
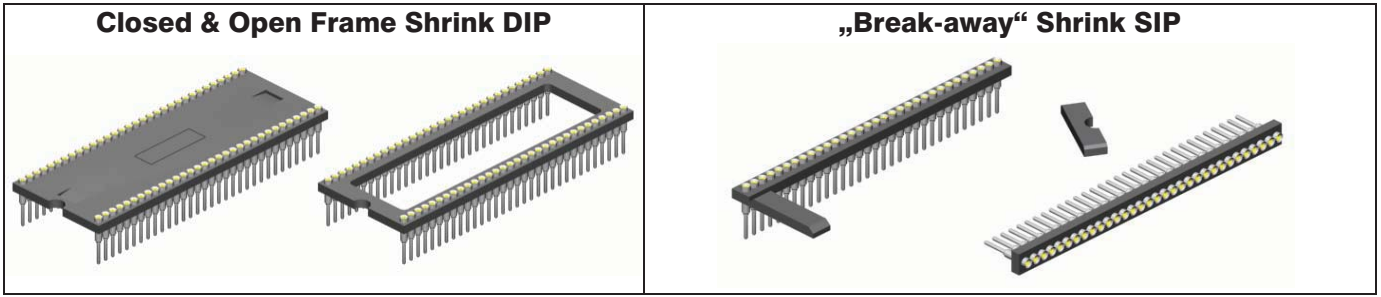
Contact design incorporates anti-overstress feature.



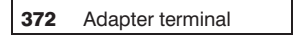
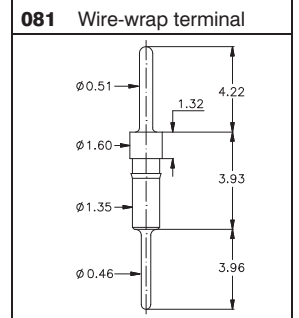
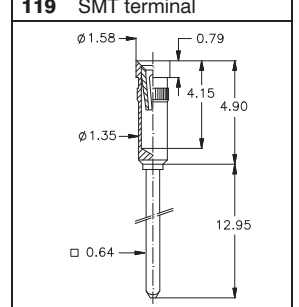
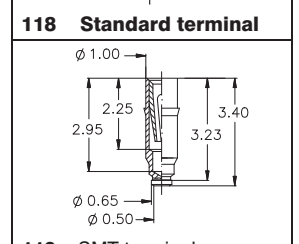
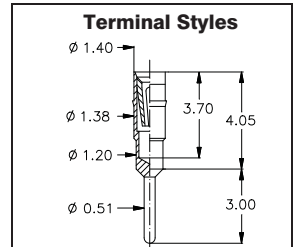
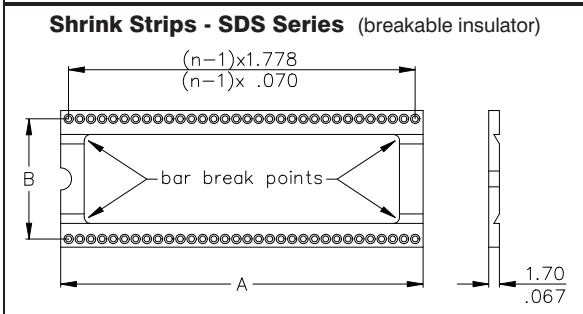
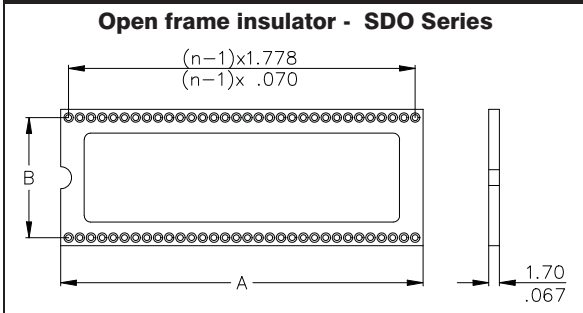
Pin	Dimensions mm/inch			Ordering Code
	"A"	"B"	"C"	
6	7,49/.295	7,62 / .300	10,16 / .400	<b>LOC-306-T051-99</b>
8	10,03/.795			<b>LOC-308-T051-99</b>
14	17,65/.695			<b>LOC-314-T051-99</b>
16	20,19/.795			<b>LOC-316-T051-99</b>
18	22,73/.895			<b>LOC-318-T051-99</b>
20	25,27/.995			<b>LOC-320-T051-99</b>
24	30,35/1.195			<b>LOC-324-T051-99</b>
28	35,43/1.395	<b>LOC-328-T051-99</b>		
22	27,81/1.095	10,16 / .400	12,70 / .500	<b>LOC-422-T051-99</b>
24	30,35/1.195	15,24 / .600	17,70 / .700	<b>LOC-624-T051-99</b>
28	35,43/1.395			<b>LOC-628-T051-99</b>
32	40,51/1.595			<b>LOC-632-T051-99</b>
40	50,67/1.995			<b>LOC-640-T051-99</b>
42	53,21/2.095			<b>LOC-642-T051-99</b>
48	60,83/2.395			<b>LOC-648-T051-99</b>

Specification			
<b>Mechanical data</b>		<b>Electrical data</b>	
Insertion force	2 N max.	Contact resistance	10 mΩ typ.
Extraction force	0,5 N min.	Current rating	1A max., 100V
Contact reliability	50 cycles min	Contact capacitance	0,5 pF
		Insulation resistance	1000 MΩ min.
		Breakdown voltage	1 KV min.
<b>Material</b>		<b>Operating temperature</b>	
Insulator	(RoHS compliant) std. temp PBT plastic UL 94 V-0	-50°C to +125°C	
Contact	(RoHS compliant) Phosphor bronze		





Pin	Dimensions mm/inch		Ordering Code
	"A"	"B"	
24	22,09 / .870	$\frac{10,16}{.400}$	<b>SDC-424-Exxx-xx</b>
28	25,65 / 1.010	$\frac{15,24}{.600}$	<b>SDC-628-Exxx-xx</b>
40	36,32 / 1.430		<b>SDC-640-Exxx-xx</b>
42	36,32 / 1.430		<b>SDC-642-Exxx-xx</b>
64	57,65 / 2.270	$\frac{19,05}{.750}$	<b>SDC-764-Sxxx-xx</b>
64	57,65 / 2.270	$\frac{19,05}{.750}$	<b>SDO-764-Sxxx-xx</b>
2 x 32	$\frac{57,65}{2.270}$	$\frac{19,05}{.750}$	<b>SDS-232-Sxxx-xx</b>



**Technical Data :**  
 Insertion force 0.70 N (avg.)  
 Extraction force 0.25 N (avg.)

*For further data refer to page 49 in this catalogue.*

How to order

**XXX - XXX - XXX - XX**

**Series**  
**SDC** = closed frame  
**SDO** = open frame  
**SDS** = strips

**DIP spacing**  
 Dim "B" in inch  
 Example: **6** for ".600"

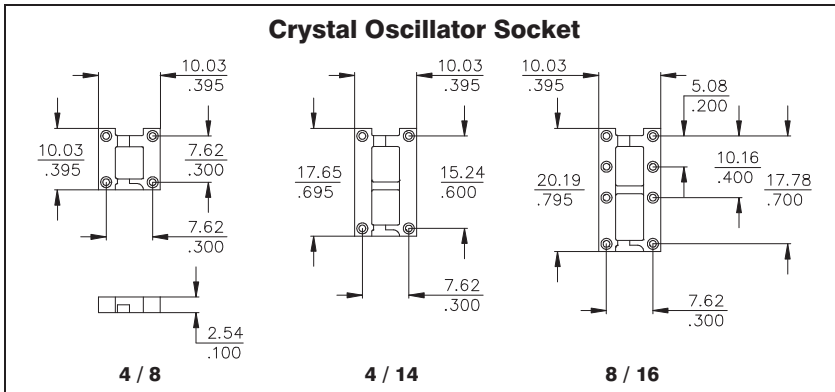
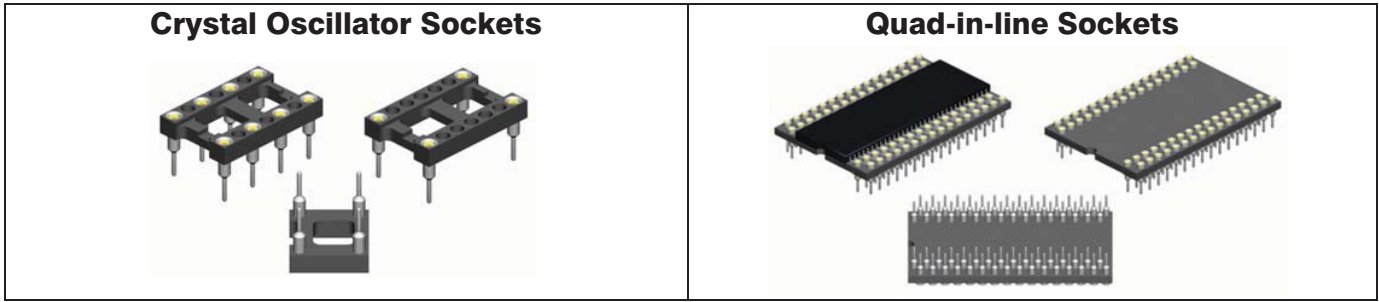
**Nbr of contacts**  
 see table

**Insulator**  
**S** = Plastic  
**E** = FR 4 (Epoxy)

**Terminal styles**  
 see drawings  
*others on request*

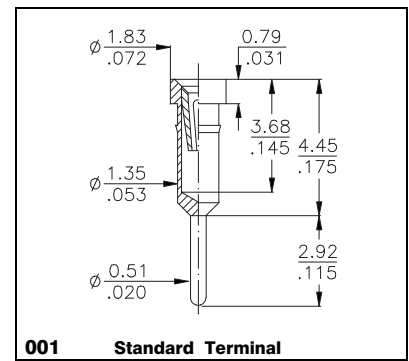
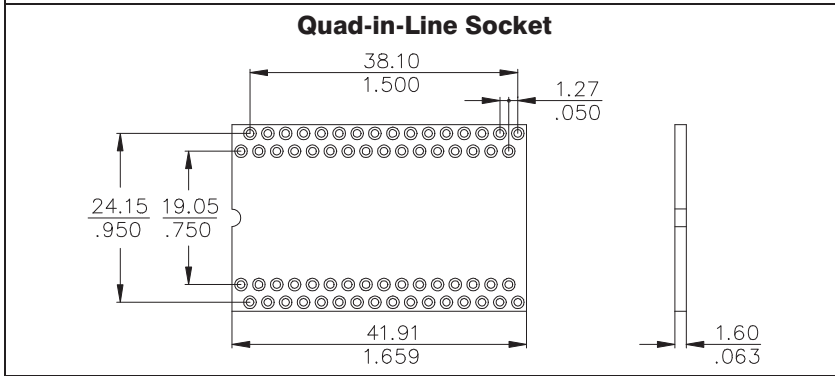
**Plating**  
**- 95** = tin/gold (not for terminal 372)  
**- 55** = gold/gold  
**- 99** = tin/tin (tin is leadfree)

# Crystal Oscillator and Quad-in-Line Sockets



### Crystal Oscillator Sockets

Pin	Ordering Code
4 / 8	<b>COS-084-S001-95</b>
4 / 14	<b>COS-144-S001-95</b>
8 / 16	<b>COS-168-S001-95</b>



### Quad-in-line Socket

Pin	Ordering Code
64	<b>QIL-764-S001-95</b>

for Rockwell & NEC Chip

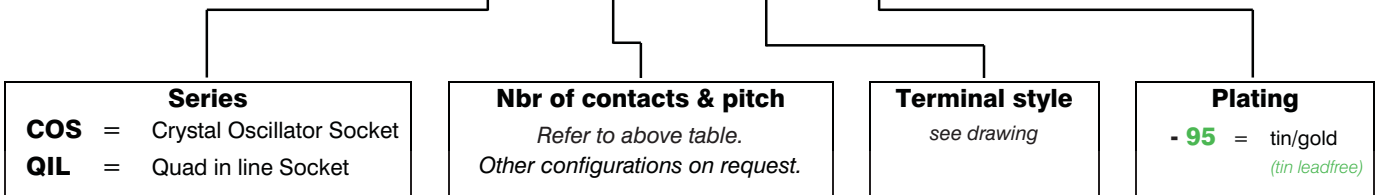
Other pin-outs available on request.

### Specifications

<b>Mechanical data</b>		<b>Electrical data</b>	
Insertion force	1,80 N for COS & 0.70N for QIL	Contact resistance at 1A	4,3 mΩ typ.
Extraction force	0,90 N for COS & 0.25N for QIL	Current rating	1A max., 100V
Contact life	> 100 cycles	Contact capacitance at 1MHz	2 pF max.
Solderability	as per IEC 60068-2-58	Insulation resistance at 500V DC	5 × 10 <sup>9</sup> Ω min.
Contact security:		Breakdown voltage at 60 Hz	500 V AC
-Vibration	as per EN60352-4	Contact resistance	≤ 7 mΩ
-Shock	as per EN60352-4	<b>Operating temperature</b>	-55° C to +125° C
<b>Material</b>		<b>Pitch</b>	2,54 mm (.100")
Insulator (RoHS compliant)	COS Series: hi temp plastic UL 94 V-0 QIL Series: PBT plastic UL 94 V-0	<b>More information, for example about testresult please ref. to page 49 or contact E-tec.</b>	
Terminal (RoHS compliant)	CuZn		
Contact (RoHS compliant)	BeCu		

### How to order

**XXX - xxx - S001 - 95**



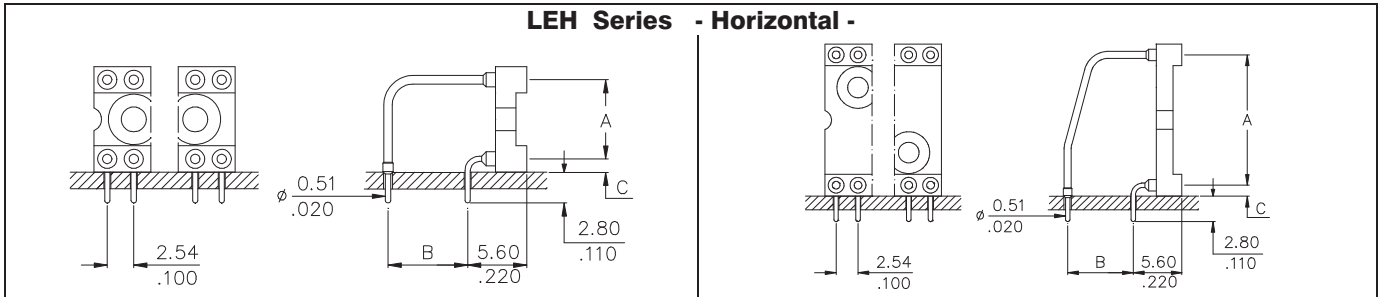
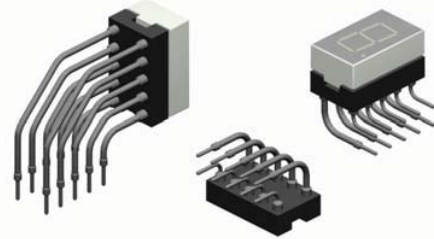


LED socket mounted with precision turned pins ensure perfect contact reliability.

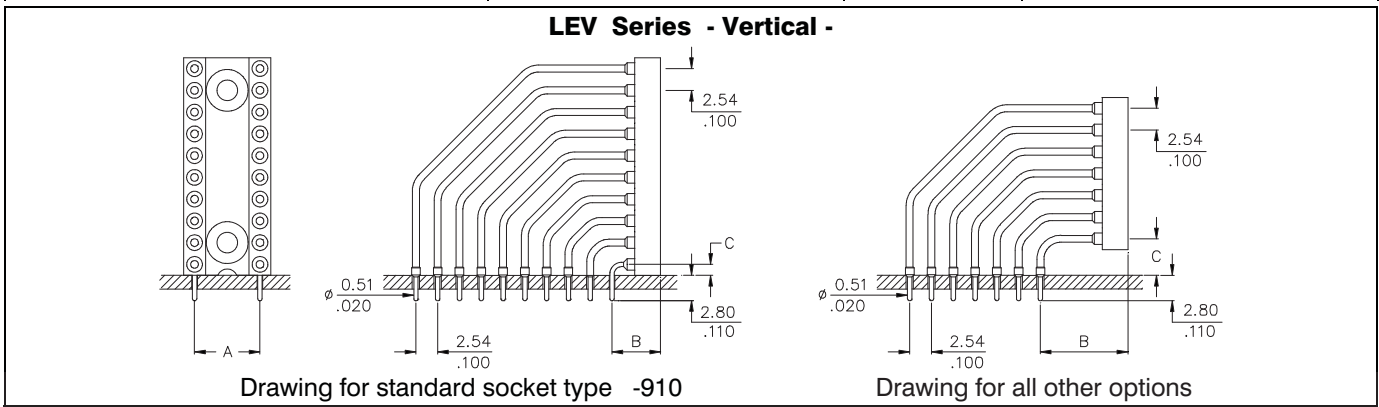
The sockets are available in horizontal and vertical executions.

The contacts are designed to hold many different IC's and LED's with short leads.

The LED sockets are also designed to accept DIP Switches.



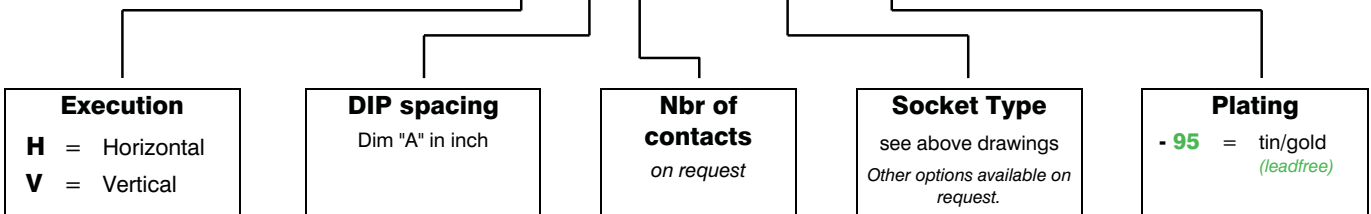
Ordering Code	Dimensions of the various socket types					all types Dim. "C"
	Standard type	-900-	Option -901	Option -902	Option -903	
pin-outs on request	Dim. "A"	Dim. "B"	Dim. "B"			
<b>LEH - 2 xx - S xxx - 95</b>	5,08/.200	5,08/.200	2,54/.100	7,62/.300	-	1,27/.050
<b>LEH - 3 xx - S xxx - 95</b>	7,62/.300	7,62/.300	2,54/.100	5,08/.200	-	1,27/.050
<b>LEH - 4 xx - S xxx - 95</b>	10,16/.400	10,16/.400	2,54/.100	5,08/.200	7,62/.300	1,27/.050
<b>LEH - 6 xx - S xxx - 95</b>	15,24/.600	7,62/.300	15,24/.600	-	-	1,27/.050
<b>LEH - 6 xx - S904 - 95</b>	15,24/.600	7,62/.300	-	-	-	2,87/.112



Ordering Code	Dimensions								
	all types	Standard Type -910		Options -915		Options -916		Options -917	
pin-outs on request	"A"	"B"	"C"	"B"	"C"	"B"	"C"	"B"	"C"
<b>LEV - 2 xx - S xxx - 95</b>	5,08/.200	5,60/.220	1,27/.050	8,14/.320	3,81/.150	10,68/.420	6,35/.250	13,22/.520	
<b>LEV - 3 xx - S xxx - 95</b>	7,62/.300	5,60/.220	1,27/.050	8,14/.320	3,81/.150	10,68/.420	6,35/.250	13,22/.520	
<b>LEV - 6 xx - S xxx - 95</b>	15,24/.600	5,60/.220	1,27/.050	8,14/.320	3,81/.150	10,68/.420	6,35/.250	13,22/.520	
<b>LEV - 3 xx - S911 - 95</b>	7,62/.300	10,16/.400	4,87/.192	<b>For technical specifications please refer to page 49</b>					

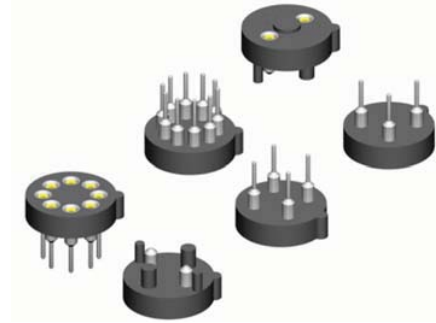
How to order

LE X - x xx - S xxx - 95





Sockets for TO-5 and TO-18 packages.  
 3-pole for transistors  
 and 2-pole TR-5 Fuse Holders shown on this page.  
 Embedded terminals prevent shortings.  
 High contact reliability with the 4-finger clips.



Transistor- & TO-Sockets				
3 - pin	4 - pin	8 - pin	10 - pin	
TOS-503-S118-95	TOS-504-S118-95	TOS-508-S118-95	TOS-610-S118-95	← Order Codes

Specifications			
<b>Mechanical data</b>		<b>Electrical data</b>	
Insertion force	1,80 N (avg)	Contact resistance at 1A	4,3 mΩ typ.
Extraction force	0,90 N (avg)	Current rating	1A max., 100V
Contact life	> 100 cycles	Contact capacitance at 1MHz	2 pF max.
Solderability	as per IEC 60068-2-58	Insulation resistance at 500V DC	5 × 10 <sup>9</sup> Ω min.
Contact security:		Breakdown voltage at 60 Hz	500 V AC
-Vibration	as per EN60352-4	Contact resistance	≤ 7 mΩ
-Shock	as per EN60352-4		
<b>Material</b>		<b>Operating temperature</b>	
Insulator (RoHS compliant)	PBT UL 94 V-0	-55° C to +125° C	
Terminal (RoHS compliant)	CuZn	<b>More information, for example about testresult please ref. to page 49 or contact E-tec.</b>	
Plating	Sn (leadfree), Ni underplated		
Contact (RoHS compliant)	BeCu		
Plating	Au, Ni underplated		

Socket for TR 5 Fuses	Specifications	
	( vary from the above )	
	<b>Electrical</b>	
	Contact resistance at 1A	4,3 mΩ typ.
	Current rating at 250 V; 1,6 W short time	6,3 A max.
	9 A	15 sec.
	11 A	5 sec.
	16 A	
	<b>Mechanical</b>	
	Insertion force	> 13 N
	Extraction force	< 4 N
	<b>Probe diam.</b>	0,58 - 0,62mm
	<b>Material</b>	
	Insulator (RoHS compliant)	Stanyl PA 46 Type UL 94 V-0
	<b>Temperature</b>	
	Operating temperature	-55° to +125°C
	Processing temperature	+250°C ±0/-5°C for 20~40sec.
<b>TOS-202-S001-95</b>		



2,50mm / 5,00mm / 7,50mm pitch connector

for 90° board-to-board connections.

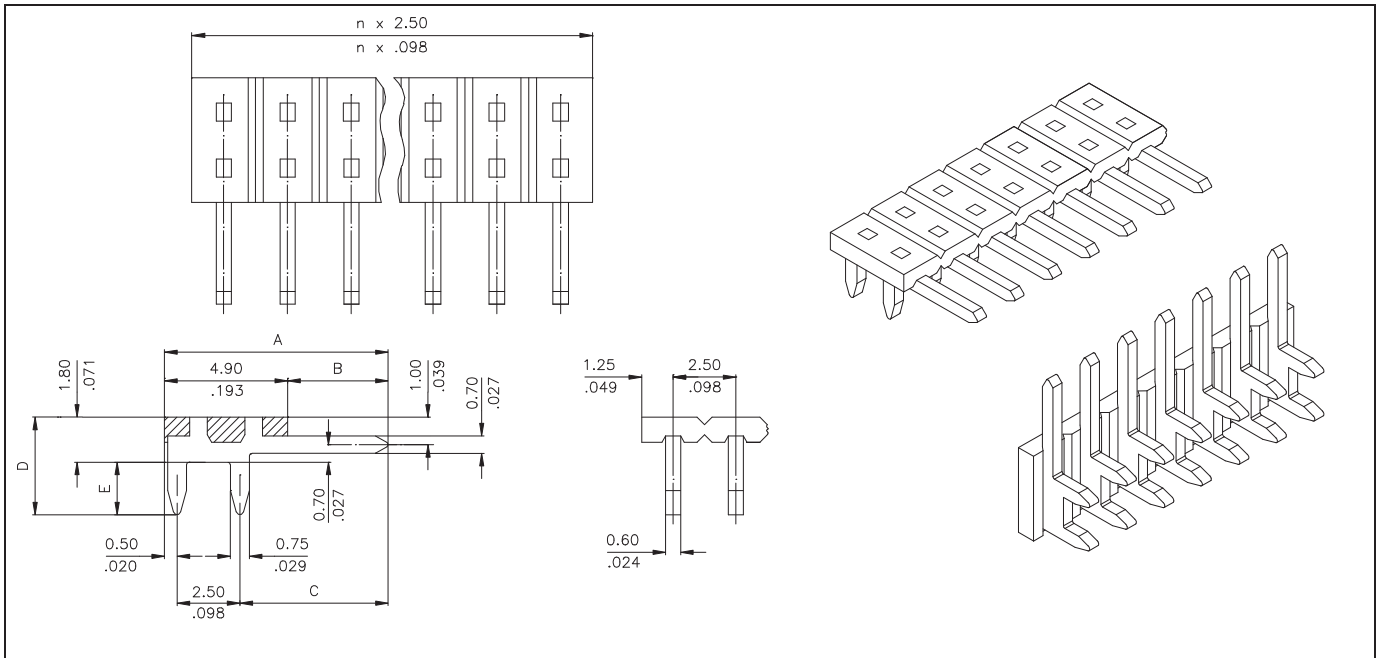
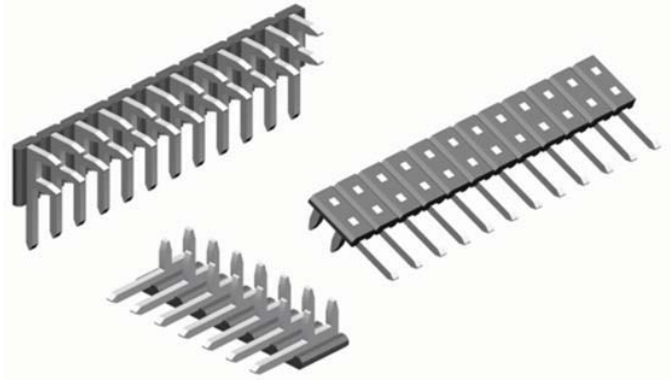
Compatible with ITT Cannon G09 connectors.

Ultra low profile with only 1.80mm above board.

Used in consumer as well as industrial applications.

Any pincount available between 1 and 27.

Plastic can be easily broken to desired size.

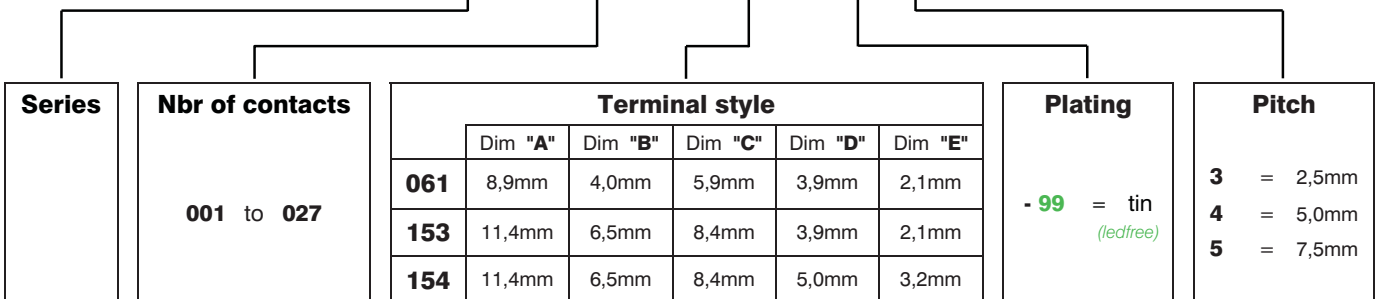


**Specifications**

Pitch	2,50 / 5,00 / 7,50mm	Insulation resistance	5 x 10 <sup>9</sup> MΩ
Contact material	(RoHS compliant) CuZn	Breakdown voltage	600 V AC
Insulator	(RoHS compliant) high temp plastic UL 94 V-0	Contact resistance	<10 mΩ
Operating temperature	-55° C to +125° C	Current rating	3 A max., 250V

How to order

PCB - xxx - Rxxx - 99 / x



# PGA/PGI/MGS - Series

## Pin Grid Array Sockets



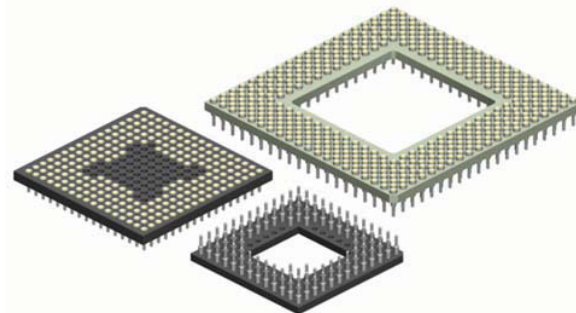
E-tec offers any configuration.

You may choose between open frame and closed frame socket bodies.

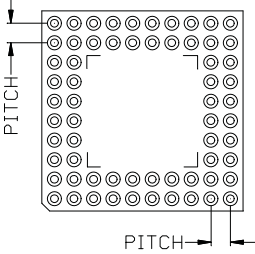
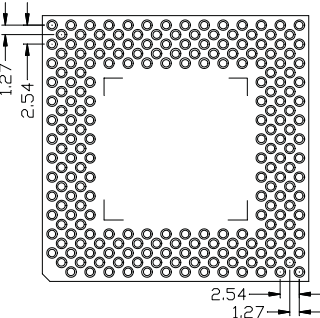
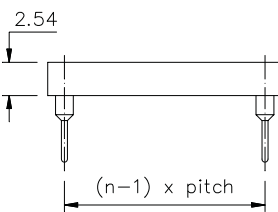
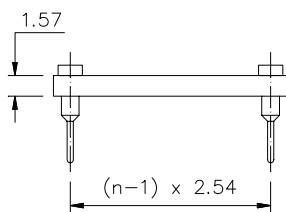
The E-tec PGA sockets with Insulator code "S" will be supplied either in plastic or FR4 Epoxy depending on material availability.

If you wish to receive the sockets in FR4 Epoxy material only, then you need to specify the code "E" in the order code.

If you only accept plastic, then you have to request E-tec for availability first.



All interstitial PGA (PGI) and Mini-Grid sockets (MGS) in any grid size and standard PGA sockets with grid size 19x19 or higher are delivered in FR4 Epoxy only.

Series PGA & MGS	Series PGI Interstitial zig-zag pitch	Plastic insulator dimensions	Epoxy FR4 insulator dimensions
<p>Pitch 1.27mm (.050") or 2,54mm (.100")</p> 	<p>2,54mm/1,27mm (.100"/.050")</p> 		<p>For PGI Sockets generally</p> 

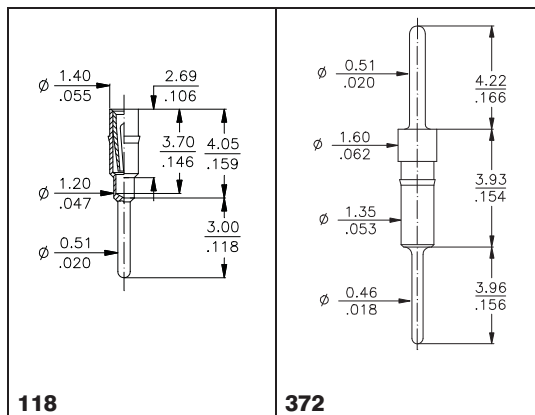
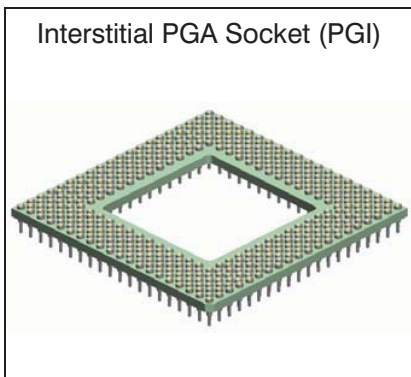
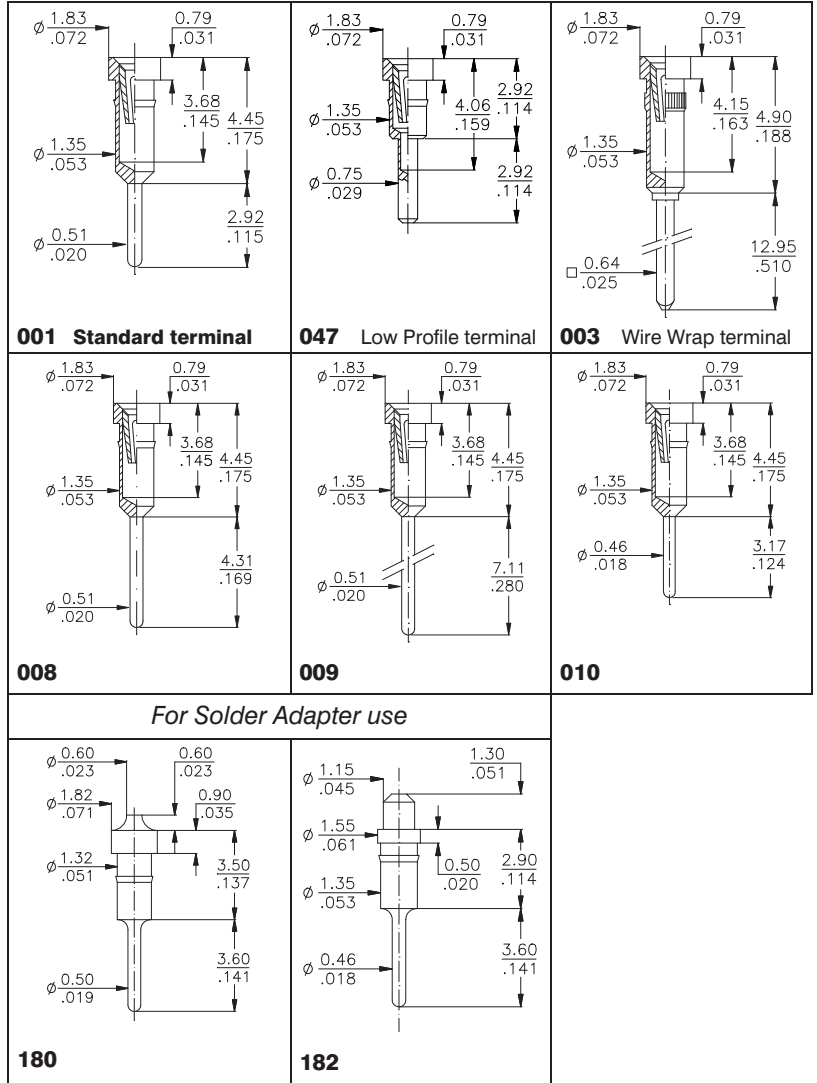
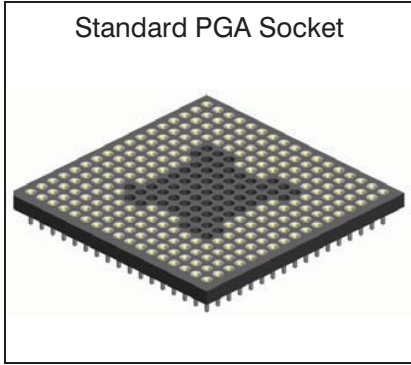
Specifications			
<p><b>Mechanical data</b></p> <p>Insertion force (avg) 0,70 N for PGA / 0,40 N for PGI            Extraction force (standard) 0,25 N for PGA / 0,15 N for PGI            Contact life &gt; 100 cycles            Solderability as per IEC 60068-2-58            Contact security: as per EN60352-4            -Vibration as per EN60352-4            -Shock as per EN60352-4</p> <p><b>Material</b></p> <p>Insulator: "S" version (RoHS compliant) PBT UL 94 V-0            "E" version (RoHS compliant) Epoxy FR4            Terminal (RoHS compliant) CuZn            Contact (RoHS compliant) BeCu</p>		<p><b>Electrical data</b></p> <p>Contact resistance at 1A 4,3 mΩ typ.            Current rating 1A max., 100V            Contact capacitance at 1MHz 2 pF max.            Insulation resistance at 500V DC 5 × 10<sup>9</sup> Ω min.            Breakdown voltage at 60 Hz 500 V AC            Contact resistance ≤7 mΩ</p> <p><b>Operating temperature</b> -55° C to +125° C</p>	<p><b>More information, for example about testresult please ref. to page 49 or contact E-tec.</b></p>

### How to order

XXX - xxx - X xxx - xx X - xx

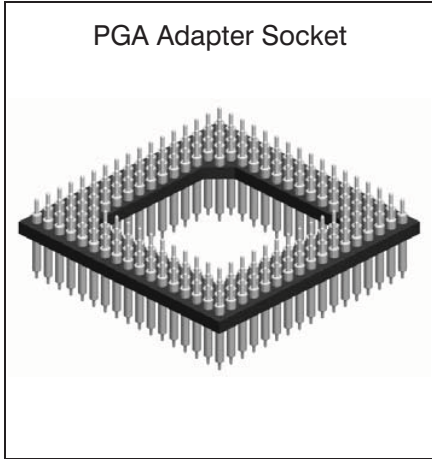
Series	Nbr of contacts	Insulator	Terminal styles	Grid Code - Config Code	Plating
<p><b>PGA</b> = Pin Grid Array pitch 2,54mm (.100")</p> <p><b>PGI</b> = Interstitial PGA pitch 2,54mm / 1,27mm (.100" / .050")</p> <p><b>MGS</b> = Mini Grid Array pitch 1,27mm (.050") <b>please refer to page 32</b></p>	<p>depends on pincount of chip</p>	<p><b>S</b> = Standard for PGA PBT or FR4 Epoxy (Depending on availability)</p> <p><b>E</b> = Standard for PGI Epoxy FR 4</p>	<p>refer to page 30 &amp; 31</p>	<p>will be given by the factory after receipt of the chip datasheet</p> <p>Refer also to <a href="http://www.e-tec.com">www.e-tec.com</a> for more information</p>	<p>- <b>95</b> = tin/gold (tin leadfree) not available for adapter terminals</p> <p>- <b>55</b> = gold/gold</p> <p>- <b>99</b> = tin/tin (leadfree)</p>

# PGA/PGI - Series Socket Terminal Styles

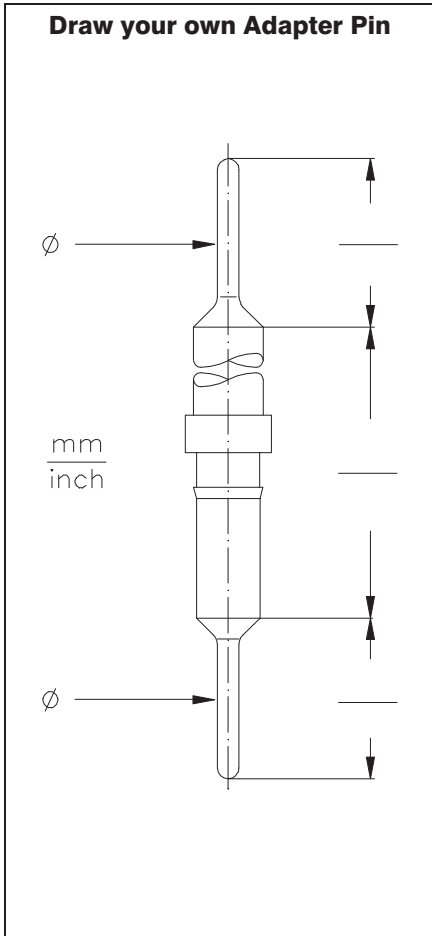




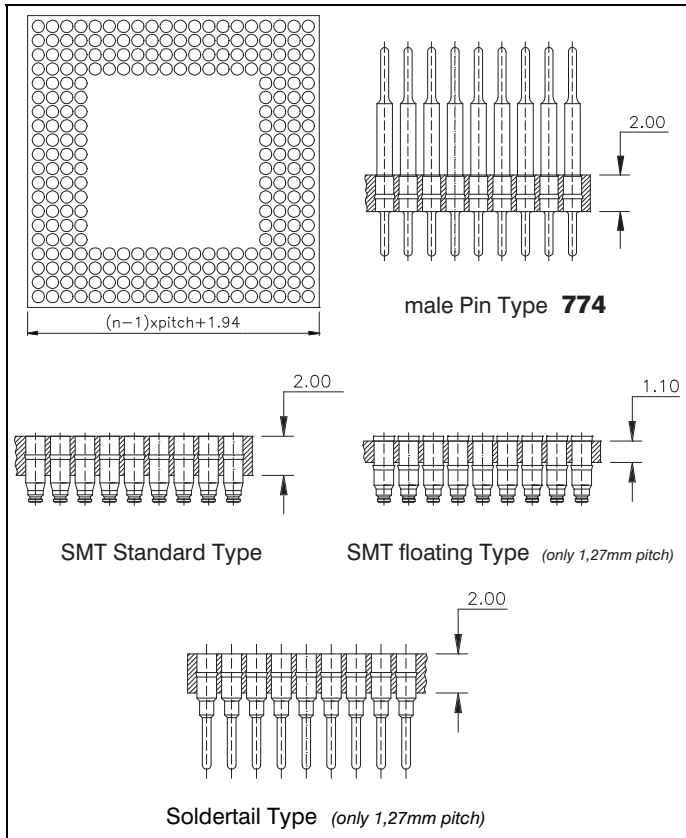
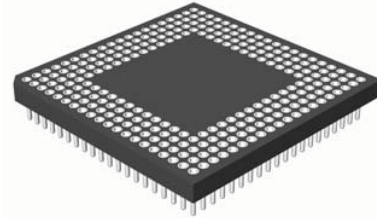
# PGA/PGI - Series Adapter Terminal Styles



<p><b>037</b></p>	<p><b>054</b></p>	<p><b>056</b></p>
<p><b>058</b></p>	<p><b>059</b></p>	<p><b>077</b></p>
<p><b>220</b></p>	<p><b>543</b></p>	<p><b>544</b></p>
<p><b>770</b></p>	<p><b>PGI Socket Adapter Pin</b></p> <p><b>372</b> (only for PGI Sockets)</p>	



E-tec offers MiniGrid sockets in any pin-out, configuration and grid size adapted to the chip and customer requirements.  
 Open frame socket bodies are also available on request.  
 Special terminal designs are possible on request also.



Terminal styles			
 <b>SMT Terminal Type 119</b> if 1,50 & 2,00mm pitch	 <b>SMT „floating” Terminal Type 120</b> if 1,50 & 2,00mm pitch	 <b>SMT Terminal Type 167</b> if 1,27 and 1,00mm pitch	 <b>SMT Terminal Type 169</b> if 0,80mm pitch
 <b>Solder-tail Terminal Type 117</b> if 1,50 & 2,00mm pitch	 <b>Solder-tail Terminal Type 172</b> if 1,27 and 1,00mm pitch	 <b>Solder-tail Terminal Type 174</b> if 0,80mm pitch	 <b>male pin Type 774</b> if 1,27 ; 1,50 & 2,00mm pitch

Specifications			
<b>Terminal Type</b> 774	<b>Material</b> CuZn	<b>Plating</b> Au over Ni over Cu	<b>Socket &amp; Adapter Material</b> FR 4 glass Epoxy UL 94V-0
117, 119, 120, 167 169, 172, 174	Terminal : CuZn Contact clip : BeCu	Sn over Ni over Cu Au over Ni over Cu	<b>Others</b> Operating Temperature -55°C to +125°C ; 260°C for 60 sec.

### How to order

MGS xxxx - E xxx - xx X 95 xx

<b>Nbr of contacts</b>  as per device	<b>Terminal styles</b>  Please refer to the drawings shown above.  Accepted male pin diameters: Pins 119, 120, 117 : 0.38 to 0.51mm Pins 167, 172 : 0.18 to 0.33mm Pins 169, 174 : 0.15 to 0.28mm	<b>Grid size</b>  <i>will be given by the factory after receipt of the chip datasheet.</i>	<b>Config Code</b>	<b>Plating</b>  95 = tin/gold (tin leadfree)  for male pin -774 plating gold only = 55	<b>Pitch of Grid Array</b>  08 = 0.80mm 10 = 1.00mm 12 = 1.27mm 15 = 1.50mm 20 = 2.00mm  others on request
---	--	--	--------------------	--	--



Production sockets for JEDEC Type "C" LCC chips.

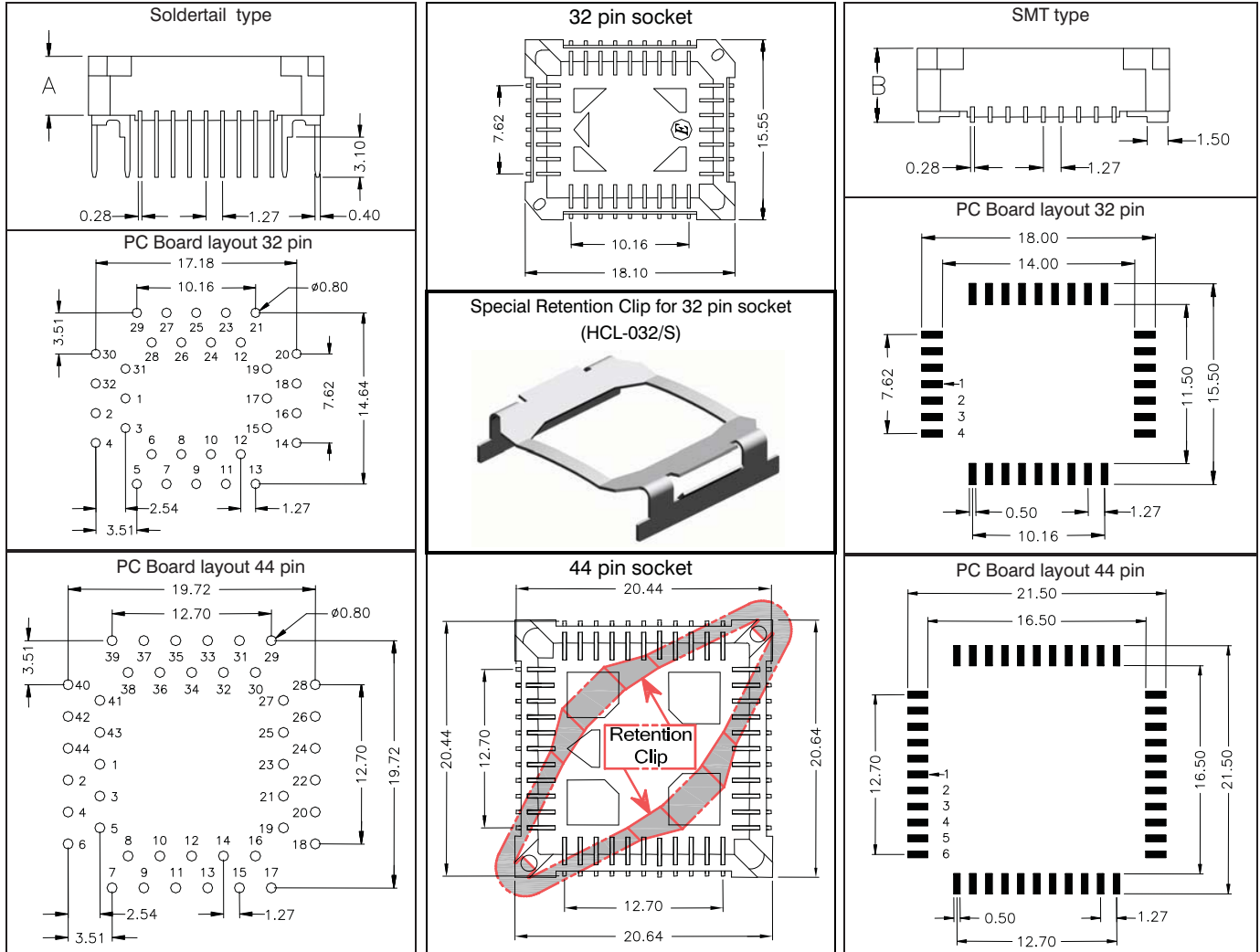
Socket design for automatic assembly and vacuum pick and place machines, available in soldertail and SMT version.

*In order to ensure compatibility with newer generation 44-pin LCC chip packages we have replaced the previous H200 contact style by new style H403. The previous generation 44-pin chip packages are also adapted to this new contact style.*

The SMT terminals extend beyond the side of the socket body, which permits direct access of the infrared heat to the terminal, thus preventing an undesired heat exposure of the insulator.

Optional retention clips are available, which can be mounted and demounted without any tools.

Chips can be easily removed with the Universal extraction tool PUL-200.



Pin	Soldertail Type Ordering Code	DIM "A"
32	<b>LCC-032-H210-55</b>	5,20/.244
44	<b>LCC-044-H210-55</b>	6,80/.268

Retention Clip Styles - Ordering Code	
32-pin	= <b>HCL-032/S</b> (square)
32-pin	= <b>HCL-032</b> (diagonal)
44-pin	= <b>HCL-044</b>

Pin	SMT Type Ordering Code	DIM "B"
32	<b>LCC-032-H200-55</b>	5,40/.213
44	<b>LCC-044-H403-55</b> previous OC: LCC-044-H200-55	6,00/.236

**Specifications**

Mechanical data		Electrical data	
Contact material (RoHS compliant)	BeCu	Insulation resistance at 500V DC	1000 MΩ min.
Plating	Au over Ni over Cu (Sn on request)	Breakdown voltage at 60 Hz	700V AC for one min
Insulator (RoHS compliant)	high temp plastic UL 94 V-0	Contact resistance at 10 mA	30 mΩ max.
Operating temperature	-55°C to +125°C	Capacitance	1pF max.
Processing temperature	250°C +0/-5°C for 20~40 Sec.	Current rating	1 A max., 100V
		Pitch	1,27 mm (.050")

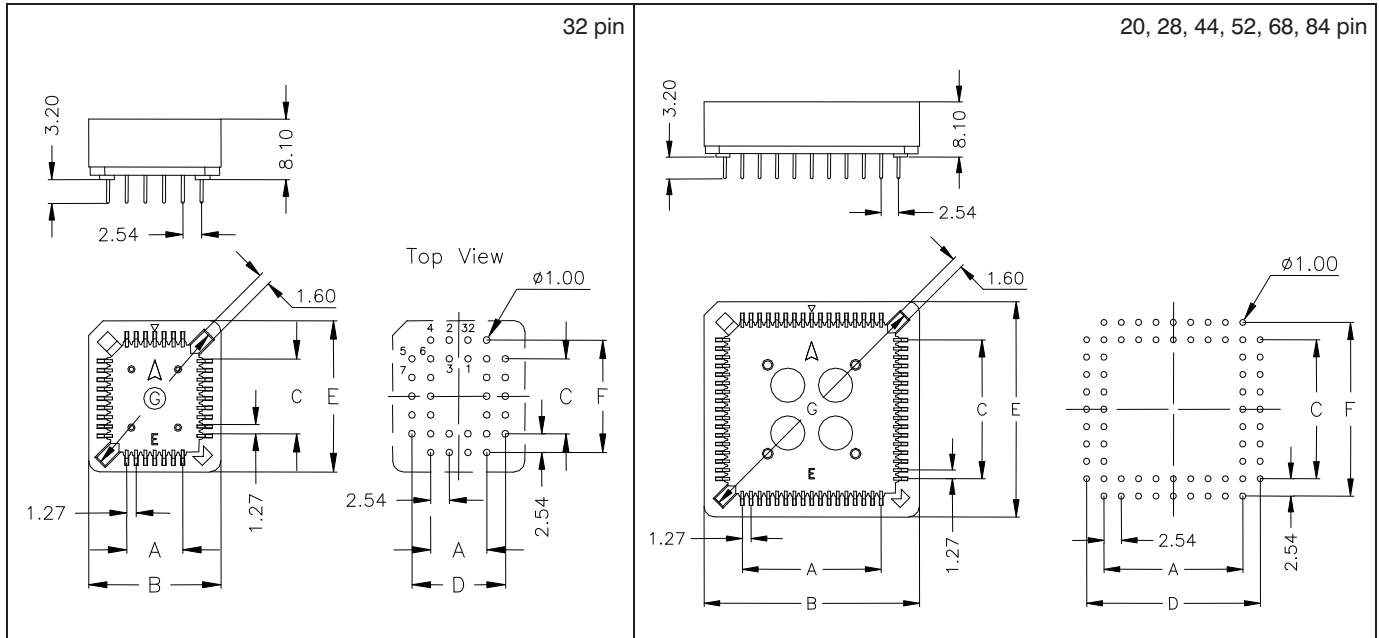
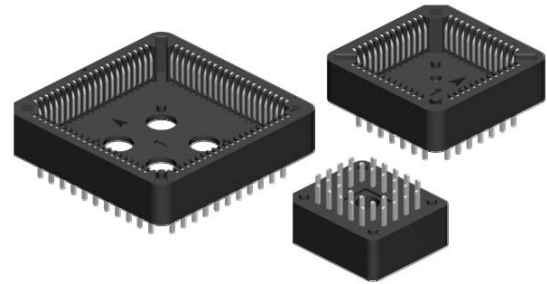


The „commercial“ PLE sockets have very solid solder legs for safe assembly to PCB.

The sockets are designed to accept PLCC Chips according to JEDEC standards.

The sockets are correctly oriented in the tubes for automatic pick and place.

Chips can be easily removed with the Universal extraction tool PUL - 200.



**Specifications**

**Mechanical data**

Insulator (RoHS compliant) High temp plastic UL 94 V-0  
 Contact (RoHS compliant) Copper Alloy  
 Plating Sn (leadfree) over Ni  
 Insertion force 0.60N max.  
 Extraction force 0.15N min.  
 Mating cycles 50 min.

**Electrical data**

Withstanding voltage 600 V RMS for 1 Minute  
 Contact resistance 20 mΩ max.  
 Insulation resistance 1000 MΩ min.  
 Current rating 1 A max., 250V AC

**Operating temperature**  
**Processing temperature**

-40°C to +105°C  
 260°C ±5°C for 5 Sec.

PIN	Ordering Code	Dimensions (mm)						
	"Commercial" PLCC through hole type	"A"	"B"	"C"	"D"	"E"	"F"	"G"
20	<b>PLE - 020 - N115 - 99</b>	5,08	15,50	5,08	10,16	15,50	10,16	17,06
28	<b>PLE - 028 - N115 - 99</b>	7,62	18,04	7,62	12,70	18,04	12,70	20,70
32	<b>PLE - 032 - N115 - 99</b> (rectangular)	7,62	18,04	10,16	12,70	20,60	15,24	22,56
44	<b>PLE - 044 - N115 - 99</b>	12,70	23,48	12,70	17,78	23,48	17,78	28,40
52	<b>PLE - 052 - N115 - 99</b>	15,24	25,88	15,24	20,32	25,88	20,32	31,76
68	<b>PLE - 068 - N115 - 99</b>	20,32	31,04	20,32	25,40	31,04	25,40	39,16
84	<b>PLE - 084 - N115 - 99</b>	25,40	36,04	25,40	30,48	36,04	30,48	46,22

**PUL - 200**

Universal extraction tool for all socket sizes (see also page 44)



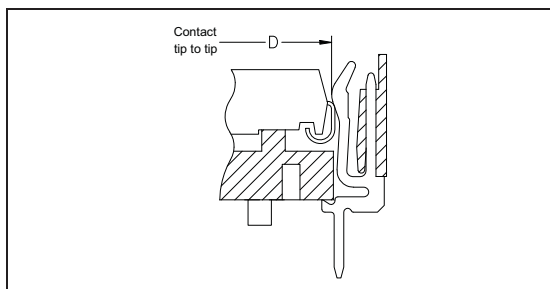
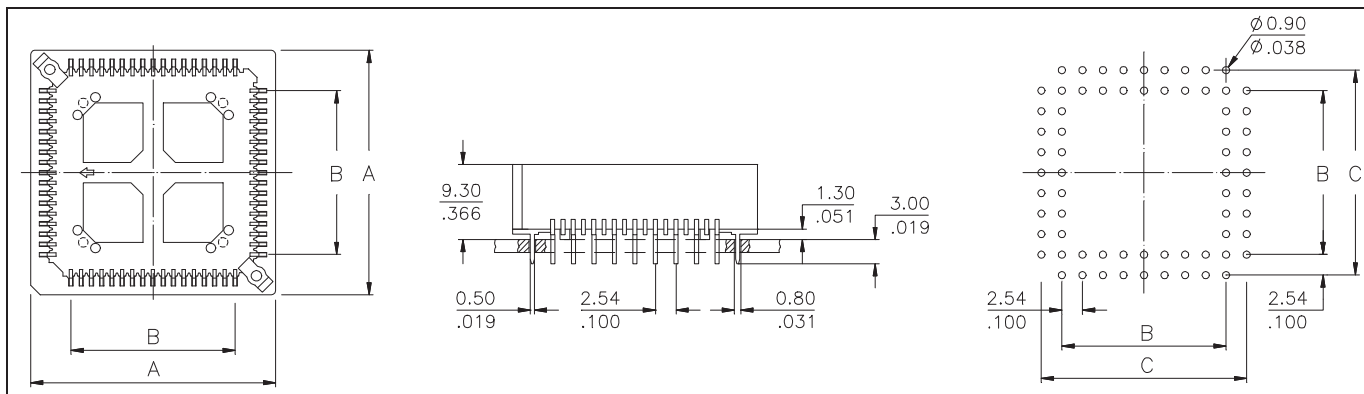
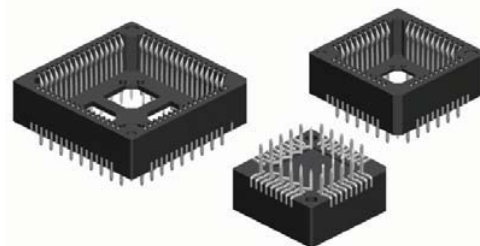
E-tec „hi-rel“ soldertail PLCC sockets correspond to JEDEC Norms. Precision stamped contact design provides special „push-down effect“ onto the leads of the chip.

Optional retention clips for very high shock and vibration applications.

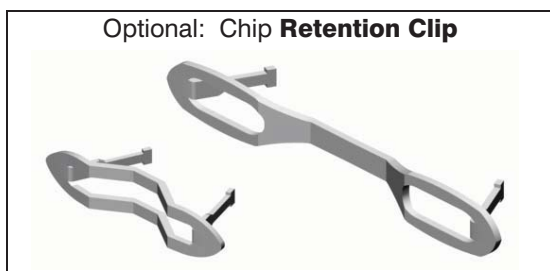
Inside polarisation corner prevents wrong insertion of the chips.

Stand-off's under the base prevent solder shorts.

Chips can be easily removed with the Universal extraction tool PUL - 200.



JEDEC Specification for Plastic Leaded Chip Carrier					
Jedec Nbr	Nbr of Pins	Dimensions mm/inch			
		"A" min.	"A" max.	„B“ min.	„B“ max.
MO-047 AB	28	12,32 / .485	12,57 / .495	1,37 / .054	2,36 / .093
MO-052 AE	32 rectang.	14,86 x 12,32 .585 x .485	15,11 x 12,57 .595 x .495	1,37 / .054	2,36 / .093
MO-047 AB	44	17,40 / .685	17,65 / .695	1,37 / .054	2,36 / .093
MO-047 AB	52	19,94 / .785	20,19 / .795	1,37 / .054	2,36 / .093
MO-047 AB	68	25,02 / .985	25,27 / .995	1,37 / .054	2,36 / .093
MO-047 AB	84	30,10 / 1.185	30,35 / 1.195	1,37 / .054	2,36 / .093



Specifications					
Mechanical data		Temperature		Electrical data	
Plating	Sn (leadfree) over Ni	Operating temp.	- 55° to +125 °C	Operating voltage	100 V RMS / 150V DC
Mating cycles	min. 50	<b>Material</b>		Breakdown voltage	>600 V RMS
Insertion force	max. 1,30N per contact	Insulator (RoHS compliant)	high temp plastic UL 94 V-0	Contact resistance	<20 mΩ
Extraction force	min. 0,90N per contact	Contact (RoHS compliant)	Phosphor Bronze	Insulation resistance	>5000 MΩ
		Retention Clip	Spring steel	Current rating	1 A max., 100V
				Capacitance	<2 pF

PIN	Ordering Code	Dimensions mm/inch			
		"A"	"B"	"C"	"D"
28	<b>PLP - 028 - N110 - 99</b>	17,60/.693	7,62/.300	12,70/.500	11,50/.453
32	<b>PLP - 032 - N110 - 99</b> (rectangular)	17,60 x 20,14 .693 x .793	10,16 x 7,62 .400 x .300	12,70 x 15,24 .500 x .600	11,50 x 14,04 .453 x .553
44	<b>PLP - 044 - N110 - 99</b>	22,68/.893	12,70/.500	17,78/.700	16,58/.653
52	<b>PLP - 052 - N110 - 99</b>	25,22/.993	15,24/.600	20,32/.800	19,12/.753
68	<b>PLP - 068 - N110 - 99</b>	30,30/1.193	20,32/.800	25,40/1.000	24,20/.953
84	<b>PLP - 084 - N110 - 99</b>	35,38/1.393	25,40/1.000	30,48/1.200	29,28/1.153

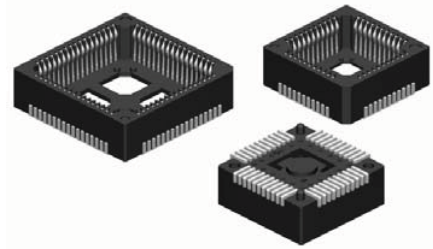
Order Code for optional **Retention Clip** : **HCP - xxx** (replace "xxx" with nbr of pins. Example. -028 if for 28-pin Socket )

**PUL - 200**

Universal extraction tool for all socket sizes (see also page 44)

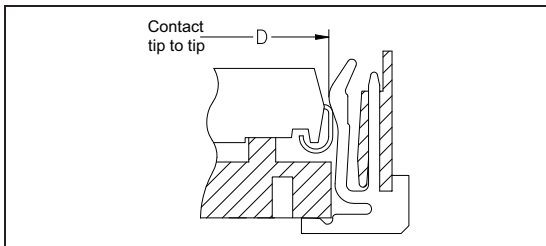
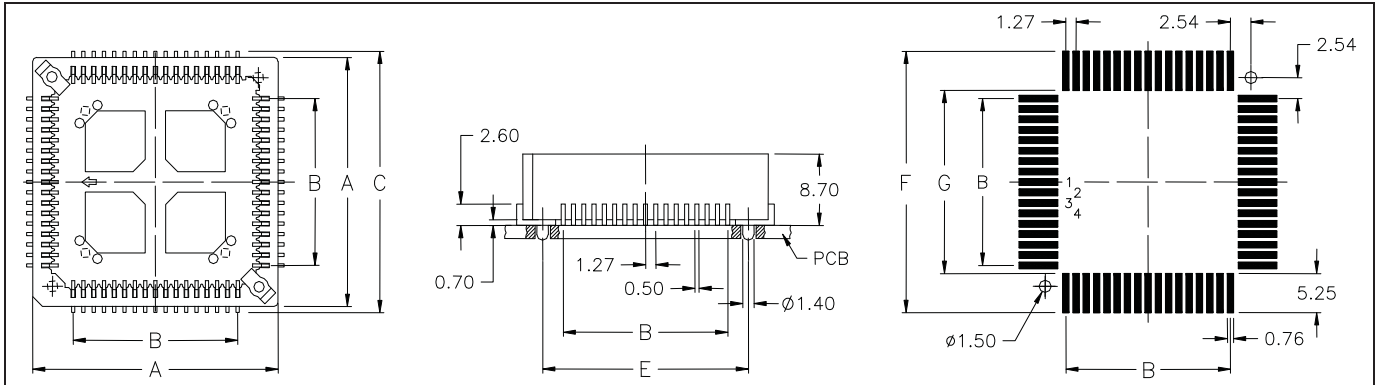


E-tec „hi-rel“ SMT PLCC sockets correspond to JEDEC Norms.  
 Precision stamped contact design provides special „push-down effect“ onto the leads of the chip.  
 For very high shock and vibration applications a chip retention clip can be obtained on request.

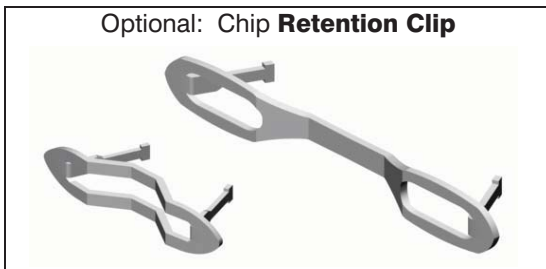


Inside polarisation corner prevents wrong insertion of the chips.  
 Stand-off's under the base prevent solder shorts.

Chips can be easily removed with the Universal extraction tool PUL-200.



JEDEC Specification for Plastic Leaded Chip Carrier					
Jedec Nbr	Nbr of Pin	Dimensions mm/inch			
		"A" min.	"A" max.	„B“ min.	„B“ max.
MO-047 AB	28	12,32 / .485	12,57 / .495	1,37 / .054	2,36 / .093
MO-052 AE	32 rectang.	14,86 x 12,32 .585 x .485	15,11 x 12,57 .595 x .495	1,37 / .054	2,36 / .093
MO-047 AB	44	17,40 / .685	17,65 / .695	1,37 / .054	2,36 / .093
MO-047 AB	52	19,94 / .785	20,19 / .795	1,37 / .054	2,36 / .093
MO-047 AB	68	25,02 / .985	25,27 / .995	1,37 / .054	2,36 / .093
MO-047 AB	84	30,10 / 1.185	30,35 / 1.195	1,37 / .054	2,36 / .093



Specifications			
<b>Mechanical data</b>	<b>Temperature</b>	<b>Electrical data</b>	
Plating: Sn (leadfree) over Ni; Au on request	Operating temp.: -55°C to +125°C	Operating voltage: 100 V RMS / 150V DC	
Mating cycles: min. 50	Soldering temp.: +250°C +0/-5°C for 20-40 sec.	Breakdown voltage: >600 V RMS	
Insertion force: max. 1,30N per contact	<b>Material</b>	Contact resistance: <20 mΩ	
Extraction force: min. 0,90N per contact	Insulator (RoHS compliant): high temp plastic UL 94 V-0	Insulation resistance: >5000 MΩ	
	Contact (RoHS compliant): Phosphor Bronze	Current rating: 1 A max., 100V	
	Retention Clip: Spring steel	Capacitance: <2 pF	

PIN	Ordering Code PLCC SMT Type	Dimensions mm/inch						
		"A" +0,10 -0,20	"B"	"C" +0,10 -0,05	"D"	"E" +0,10 -0,15	"F" +0,05 -0,00	"G" +0,00 -0,05
28	<b>PLP - 028 - H100 - 99 (/x)</b>	17,60/.693	7,62/.300	19,10/.752	11,50/.453	12,70/.500	19,60/.772	9,10/.358
32	<b>PLP - 032 - H100 - 99 (/x)</b> (rectangular)	17,60 x 20,14 .693 x .793	7,62 x 10,16 .300 x .400	19,10 x 21,64 .752 x .852	11,50 x 14,04 .453 x .553	12,70 x 15,24 .500 x .600	19,60 x 22,14 .772 x .872	9,10 x 11,14 .358 x .438
44	<b>PLP - 044 - H100 - 99 (/x)</b>	22,68/.893	12,70/.500	24,18/.952	16,58/.653	17,78/.700	24,68/.972	14,18/.558
52	<b>PLP - 052 - H100 - 99 (/x)</b>	25,22/.993	15,24/.600	26,72/1.052	19,12/.753	20,32/.800	27,22/1.072	16,72/.658
68	<b>PLP - 068 - H100 - 99 (/x)</b>	30,30/1.193	20,32/.800	31,80/1.252	24,20/.953	25,40/1.000	32,30/1.272	21,80/.858
84	<b>PLP - 084 - H100 - 99 (/x)</b>	35,38/1.393	25,40/1.000	36,88/1.452	29,28/1.153	30,48/1.200	37,38/1.472	26,88/1.058

for sockets with index pins please add: /1 = 1 pin in right angle corner /2 = 1 pin in slanted corner /3 = 2 pins diagonal

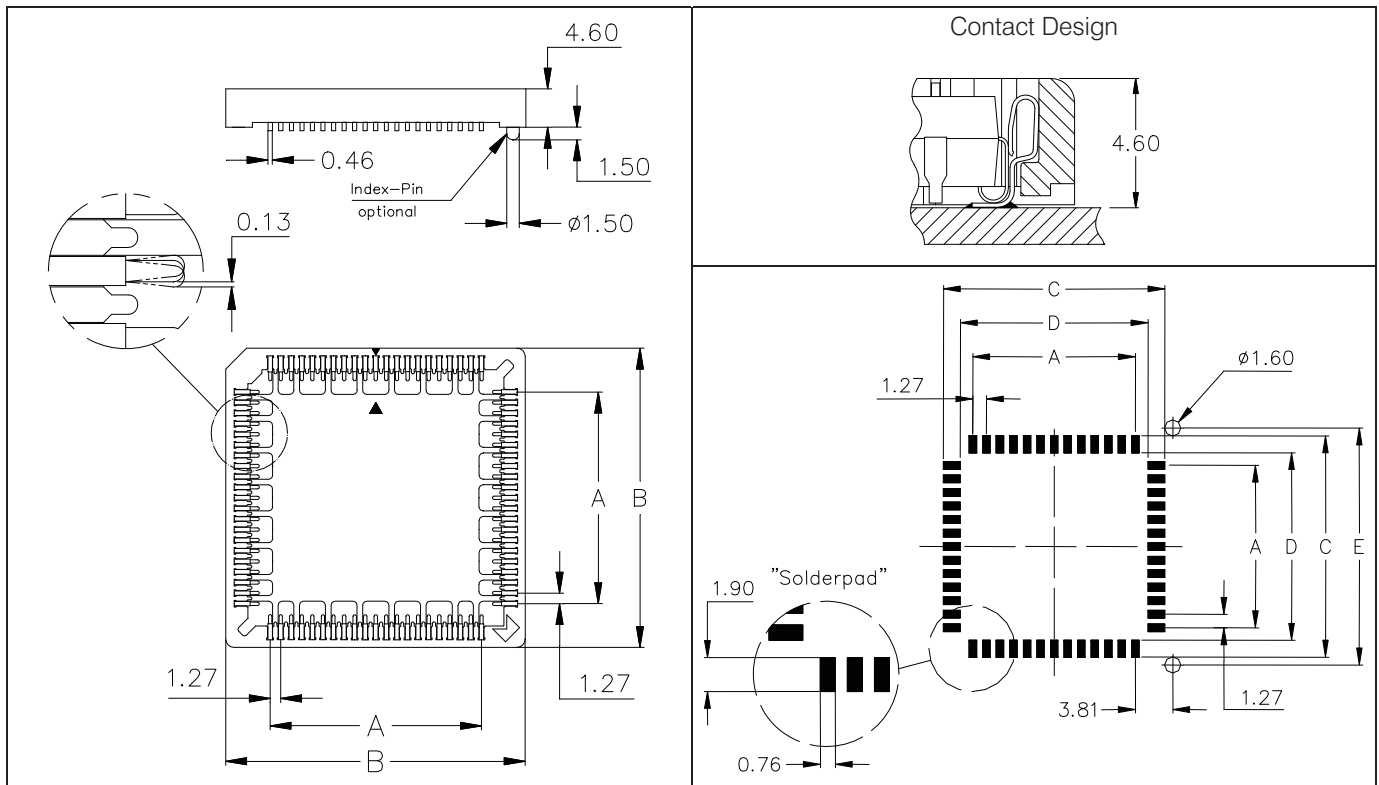
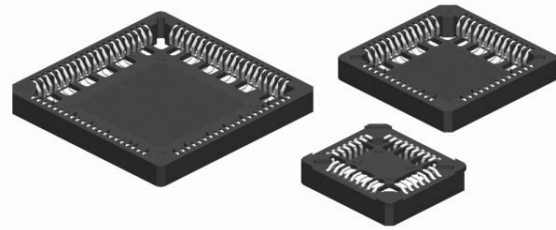
Order Code for optional Retention Clip: HCP - xxx (replace "xxx" with nbr of pins. Example. -028 if for 28-pin Socket)

**PUL - 200**

Universal extraction tool for all socket sizes (see also page 44)



Only 4.60mm height above board.  
 Identical PCB layout for socket and chip.  
 Solder terminals visible for post solder checks.  
 Available with index pins under the insulator for correct orientation of the sockets.  
 Diagonal slots for easy extraction of the chip with the Universal extraction tool PUL-200.  
 Sockets correspond to JEDEC Norms.  
 Also available in reel packaging.



Specifications	
<p><b>Mechanical data</b></p> <p>Contact (RoHS compliant) Phosphor bronze</p> <p>Plating Sn (leadfree) over Ni</p> <p>Insulator (RoHS compliant) High temp plastic black UL 94 V-0</p> <p><b>Temperature</b></p> <p>Operating temp. - 40°C to +105°C</p> <p>Processing temp. +250°C +0/-5°C for 20~40sec.</p>	<p><b>Electrical data</b></p> <p>Measuring voltage 100 V RMS / 150V DC</p> <p>Breakdown voltage &gt;600 V RMS</p> <p>Contact resistance &lt;20 mΩ</p> <p>Insulation resistance &gt;5000 MΩ</p> <p>Current rating 1 A max., 100V</p> <p>Capacitance &lt;2 pF</p>

PIN	Ordering Code		Dimensions mm				
	PLCC SMT without index pins	PLCC SMT with index pins	"A"	"B"	"C"	"D"	"E"
20	<b>PLS - 020 - H105 - 99</b>	<b>PLS - 020 - H105 - 99/4</b>	5,08	15,58	10,50	6,70	12,70
28	<b>PLS - 028 - H105 - 99</b>	<b>PLS - 028 - H105 - 99/4</b>	7,62	18,12	12,61	8,81	15,24
32	<b>PLS - 032 - H105 - 99</b> (rectangular)	<b>PLS - 032 - H105 - 99/4</b> (rectangular)	7,62 x 10,16	20,66 x 18,12	13,04 x 15,58	9,24 x 11,78	17,78
44	<b>PLS - 044 - H105 - 99</b>	<b>PLS - 044 - H105 - 99/4</b>	12,70	23,20	18,12	14,32	20,32
52	<b>PLS - 052 - H105 - 99</b>	<b>PLS - 052 - H105 - 99/4</b>	15,24	25,74	20,86	17,06	22,86
68	<b>PLS - 068 - H105 - 99</b>	<b>PLS - 068 - H105 - 99/4</b>	20,32	30,82	25,74	21,94	27,94
84	<b>PLS - 084 - H105 - 99</b>	<b>PLS - 084 - H105 - 99/4</b>	25,40	35,90	30,39	26,59	33,02
For reel packing pls. order with - 99/R							
<b>PUL - 200</b>			Universal extraction tool for all sizes (see also page 44)				

# SM Series - SIMM Sockets

1,27mm pitch



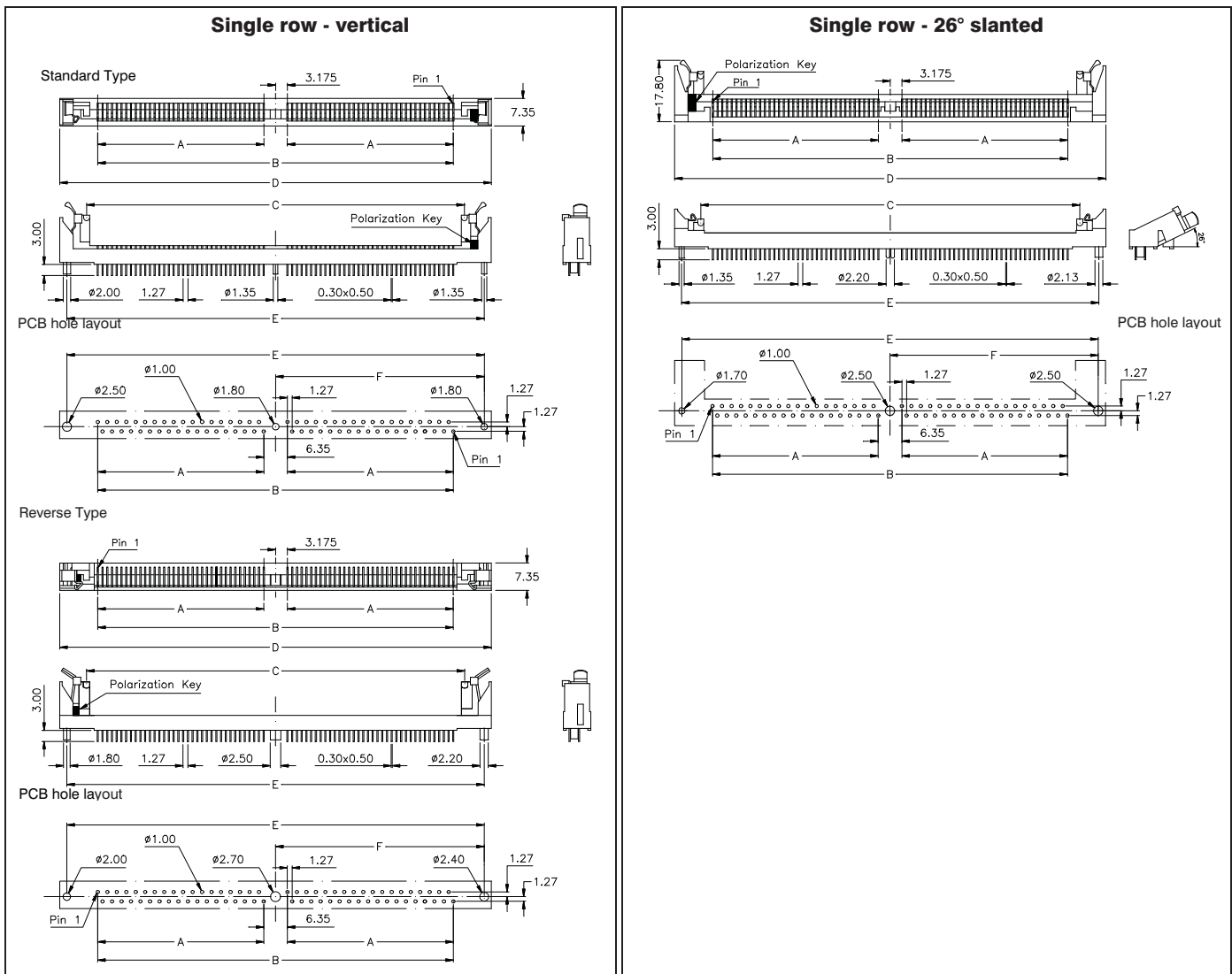
SIMM sockets are made of hi-temp resistant LCP.

Single row types are available in vertical and slanted version ( 26°).

Insertion & extraction of the module can be made without any tools.

Positive polarization prevents wrong insertion of the module.

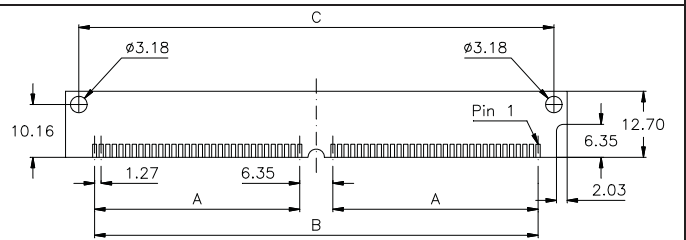
Contacts are designed with an anti-overstress feature.



### Specifications

Current rating	: 1 A max., 100V
Contact resistance	: 30 mΩ max.
Breakdown voltage	: 1,5 KV RMS max.
Insulation resistance	: 10 <sup>4</sup> MΩ min.
Capacitance	: 2 pF max.
Contact force	: 2 N min. (Module: 1.19mm to 1.37mm thick)
Operating temperature	: -55 °C to + 150 °C min.
Insulator (RoHS compliant)	: high temp plastic (ivory) UL 94 V-0
Contact (RoHS compliant)	: Phosphor bronze
Plating	: Sn (leadfree) over Ni

### Dimensions for 1,27mm pitch SIMM Modules



Pin	Execution	Ordering Code		Dimensions mm					
		Standard Type	Reverse Type	"A" +/- 0.15	"B" +/- 0.15	"C" +0.60 / - 0.30	"D" +/- 0.30	"E" +/- 0.25	"F" +/- 0.25
72	vertical	<b>SM1 - 072 - TV99 - 99 / 1M</b>	<b>SM1 - 072 - TV99 - 99 / 1MR</b>	44,45	95,25	101,20	115,45	111,56	55,78
80	vertical	<b>SM1 - 080 - TV99 - 99 / 1M</b>	<b>SM1 - 080 - TV99 - 99 / 1MR</b>	49,53	105,40	111,35	125,75	121,80	60,90
72	26° slanted	<b>SM1 - 072 - TS99 - 99 / 1M</b>		44,45	95,25	101,20	115,45	111,56	55,78
80	26° slanted	<b>SM1 - 080 - TS99 - 99 / 1M</b>		49,53	105,40	111,35	125,75	121,80	60,90



# DM - Series DIMM Sockets

vertical type 100-pin 4bit

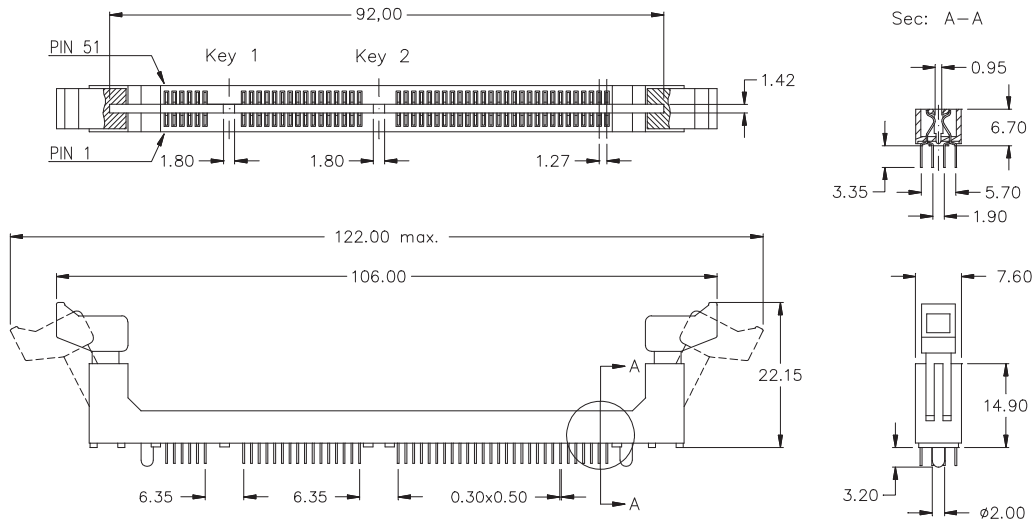


DIMM sockets are only available as long latch type  
( Module locking extractors ).

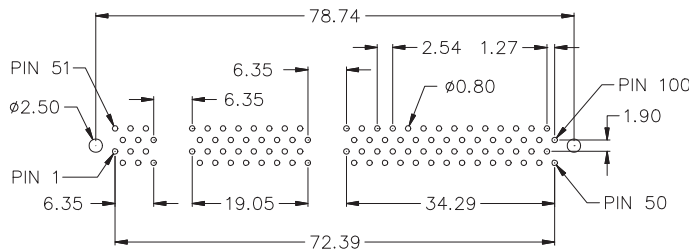
Insertion & extraction of the module can be made without any tools.

Positive polarization prevents wrong insertion of the module.

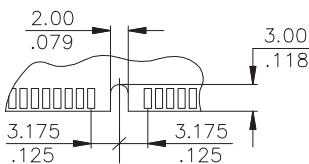
Contacts are designed with an anti-overstress feature for long contact life. Selective Gold/Tin plated. Gold only in contact area.



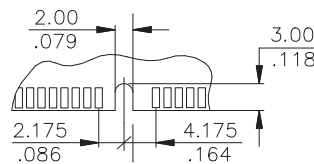
## PC Board hole layout



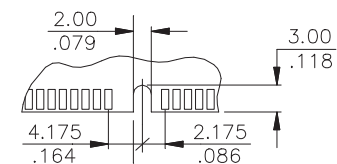
Module keying Type "A"



Module keying Type "B"



Module keying Type "C"



## Specification

Current rating 1 A max., 250V AC  
Contact resistance 30 mΩ max.  
Breakdown voltage 1,5 KV RMS max.  
Insulation resistance 10<sup>4</sup> MΩ min.  
Capacitance 1 pF max.

Operating temperature -55° C to +105° C min.  
Insulator (RoHS compliant) high temp plastic UL 94 V-0  
Contact (RoHS compliant) Copper Alloy  
Plating Au / Sn (leadfree) over Ni

Pin	Socket Type	Key No. 1	Key No. 2	Ordering Code
100 pin	DRAM 5 Volt	Type "A"	Type "B"	Please contact E-tec sales office for availability.
100 pin	SDRAM 5 Volt	Type "B"	Type "B"	Please contact E-tec sales office for availability.
100 pin	UDRAM 5 Volt	Type "C"	Type "B"	Please contact E-tec sales office for availability.
100 pin	DRAM 3,3 Volt	Type "A"	Type "A"	Please contact E-tec sales office for availability.
100 pin	SDRAM 3,3 Volt	Type "B"	Type "A"	Please contact E-tec sales office for availability.
100 pin	UDRAM 3,3 Volt	Type "C"	Type "A"	<b>DM1 - 100 - VCA9 - 95/1L</b>

# DM - Series DIMM Sockets

vertical type 168-pin

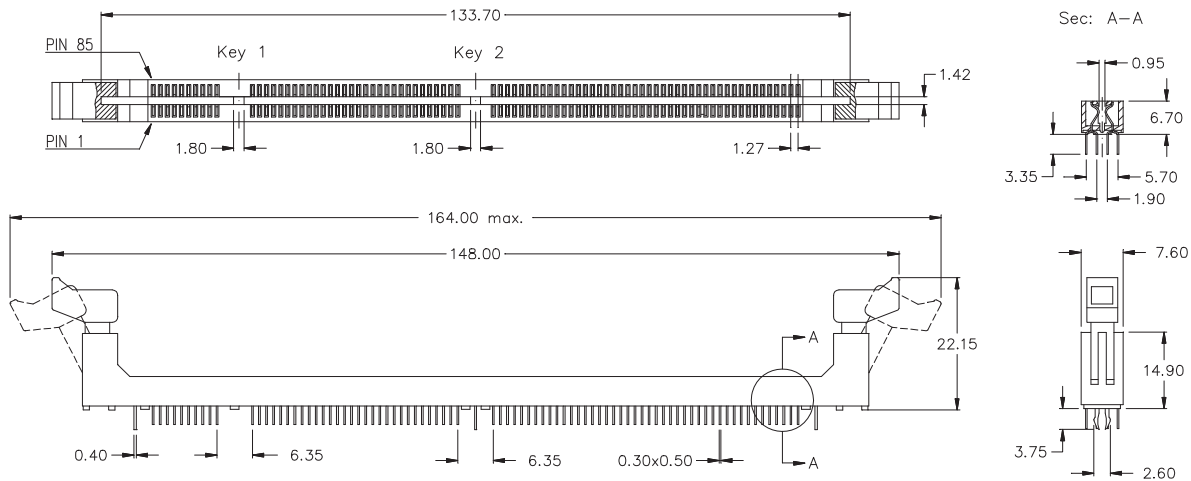


DIMM sockets are only available as long latch type  
( Module locking extractors ).

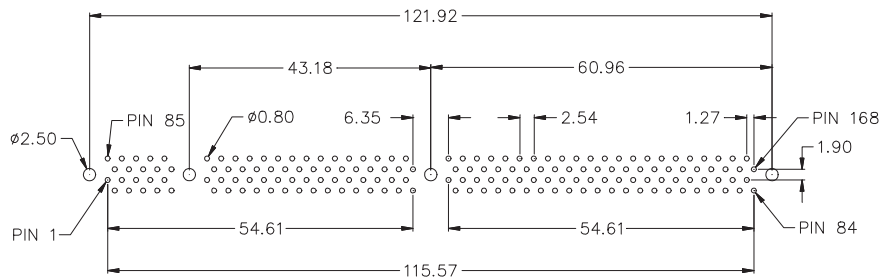
Insertion & extraction of the module can be made without any tools.

Positive polarization prevents wrong insertion of the module.

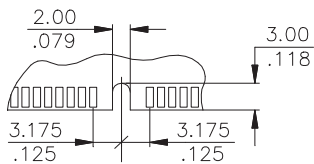
Contacts are designed with an anti-overstress feature for long contact life. Selective Gold/Tin plated. Gold only in contact area.



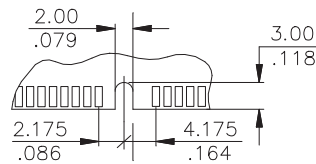
## PC Board hole layout



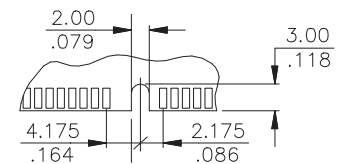
Module keying Type "A"



Module keying Type "B"



Module keying Type "C"



## Specification

Current rating 1 A max., 250V AC  
 Contact resistance 30 m $\Omega$  max.  
 Breakdown voltage 1,5 KV RMS max.  
 Insulation resistance 10<sup>4</sup> M $\Omega$  min.  
 Capacitance 1 pF max.

Operating temperature -55° C to +105° C min.  
 Insulator (RoHS compliant) high temp plastic UL 94 V-0  
 Contact (RoHS compliant) Copper Alloy  
 Plating Au / Sn (leadfree) over Ni

Pin	Socket Type	Key No. 1	Key No. 2	Ordering Code
168 pin	DRAM 5 Volt	Type "A"	Type "B"	<b>DM1 - 168 - VAB9 - 95/1L</b>
168 pin	SDRAM 5 Volt	Type "B"	Type "B"	<b>DM1 - 168 - VBB9 - 95/1L</b>
168 pin	UDRAM 5 Volt	Type "C"	Type "B"	<b>DM1 - 168 - VCB9 - 95/1L</b>
168 pin	DRAM 3,3 Volt	Type "A"	Type "A"	<b>DM1 - 168 - VAA9 - 95/1L</b>
168 pin	SDRAM 3,3 Volt	Type "B"	Type "A"	<b>DM1 - 168 - VBA9 - 95/1L</b>
168 pin	UDRAM 3,3 Volt	Type "C"	Type "A"	<b>DM1 - 168 - VCA9 - 95/1L</b>

# DM - Series DIMM Sockets

## 25° slanted type 168-pin

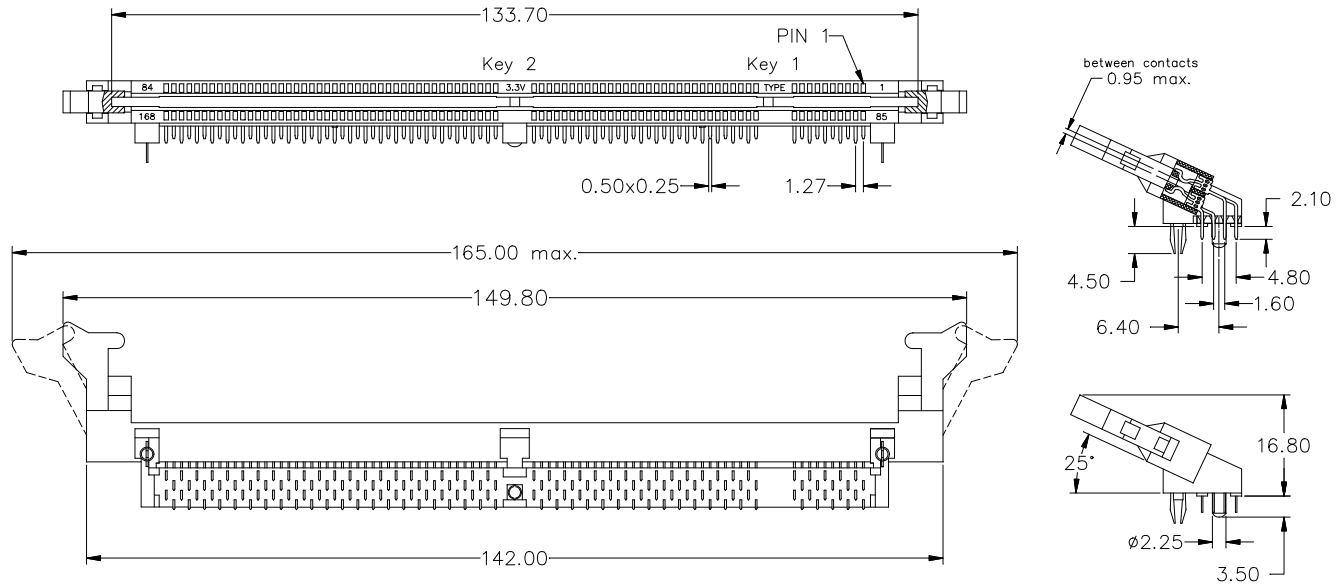


DIMM sockets are only available as long latch type  
( Module locking extractors ).

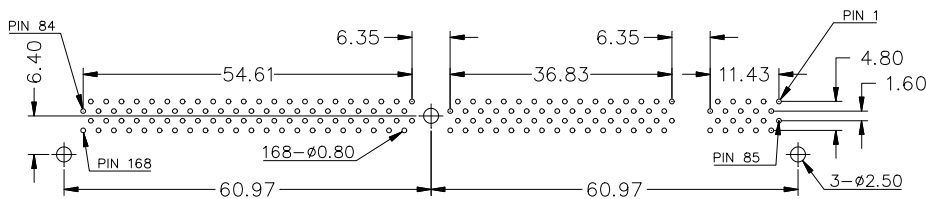
Insertion & extraction of the module can be made without any tools.

Positive polarization prevents wrong insertion of the module.

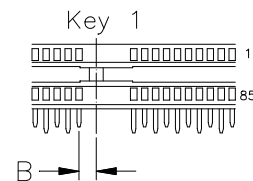
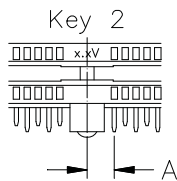
Contacts are designed with an anti-overstress feature for long contact life. Selective Gold/Tin plated. Gold only in contact area.



### PC Board hole layout



### Module keying



### Specification

Current rating	1 A max., 250V AC
Contact resistance	30 mΩ max.
Breakdown voltage	1,5 KV RMS max.
Insulation resistance	1000 MΩ min.
Capacitance	1 pF max.

Operating temperature	-25° C to +105° C min.
Insulator (RoHS compliant)	high temp plastic UL 94 V-0
Contact (RoHS compliant)	Copper Alloy
Plating	Au / Sn (leadfree) over Ni

Pin	Socket Type	Key No. 1	Key No. 2	Type	Ordering Code
168 pin	DRAM 3,3 Volt	DIM "B" = 3.175 mm	DIM "A" = 3.175 mm	AA	<b>DM1 - 168 - SAA8 - 95/1L</b>
168 pin	SDRAM 3,3 Volt	DIM "B" = 4.175 mm	DIM "A" = 3.175 mm	BA	<b>DM1 - 168 - SBA8 - 95/1L</b>
168 pin	UDRAM 3,3 Volt	DIM "B" = 2.175 mm	DIM "A" = 3.175 mm	CA	<b>DM1 - 168 - SCA8 - 95/1L</b>

# DM - Series DIMM Sockets

## 90° right angle type 168-pin

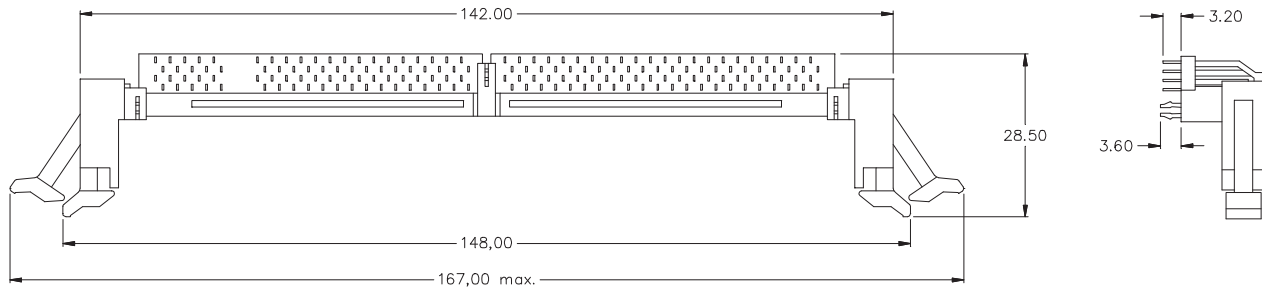
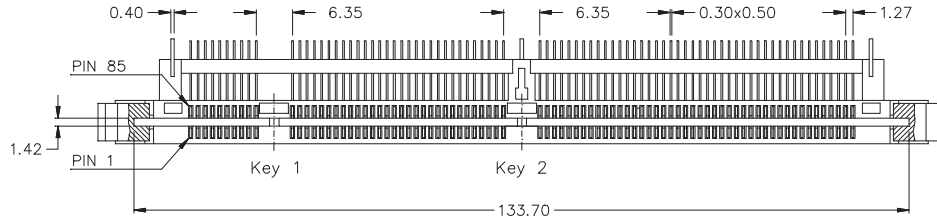


DIMM sockets are only available as long latch type  
( Module locking extractors ).

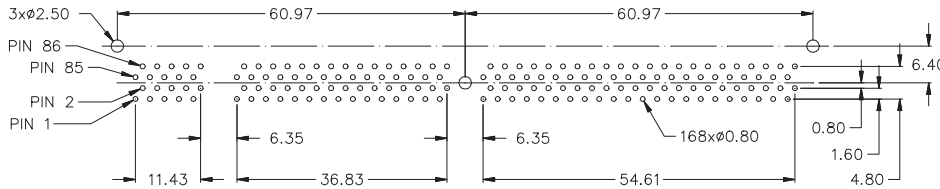
Insertion & extraction of the module can be made without any tools.

Positive polarization prevents wrong insertion of the module.

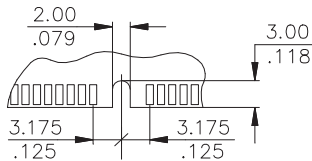
Contacts are designed with an anti-overstress feature for long contact life. Selective Gold/Tin plated. Gold only in contact area.



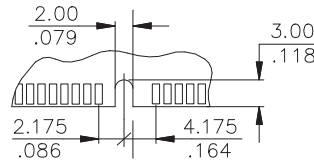
### PC Board hole layout



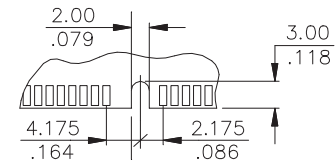
#### Module keying Type "A"



#### Module keying Type "B"



#### Module keying Type "C"



### Specification

Current rating 1 A max., 250V AC  
Contact resistance 30 mΩ max.  
Breakdown voltage 1,5 KV RMS max.  
Insulation resistance 10<sup>4</sup> MΩ min.  
Capacitance 1 pF max.

Operating temperature -55° C to +105° C min.  
Insulator (RoHS compliant) high temp plastic UL 94 V-0  
Contact (RoHS compliant) Copper Alloy  
Plating Au / Sn (leadfree) over Ni

Pin	Socket Type	Key No. 1	Key No. 2	Ordering Code
168 pin	DRAM 5 Volt	Type "A"	Type "B"	Please contact E-tec sales office for availability.
168 pin	SDRAM 5 Volt	Type "B"	Type "B"	Please contact E-tec sales office for availability.
168 pin	UDRAM 5 Volt	Type "C"	Type "B"	Please contact E-tec sales office for availability.
168 pin	DRAM 3,3 Volt	Type "A"	Type "A"	Please contact E-tec sales office for availability.
168 pin	SDRAM 3,3 Volt	Type "B"	Type "A"	Please contact E-tec sales office for availability.
168 pin	UDRAM 3,3 Volt	Type "C"	Type "A"	<b>DM1 - 168 - RCA9 - 95/1L</b>

# DR - Series DIMM Sockets for DDR Module vertical type 184-pin

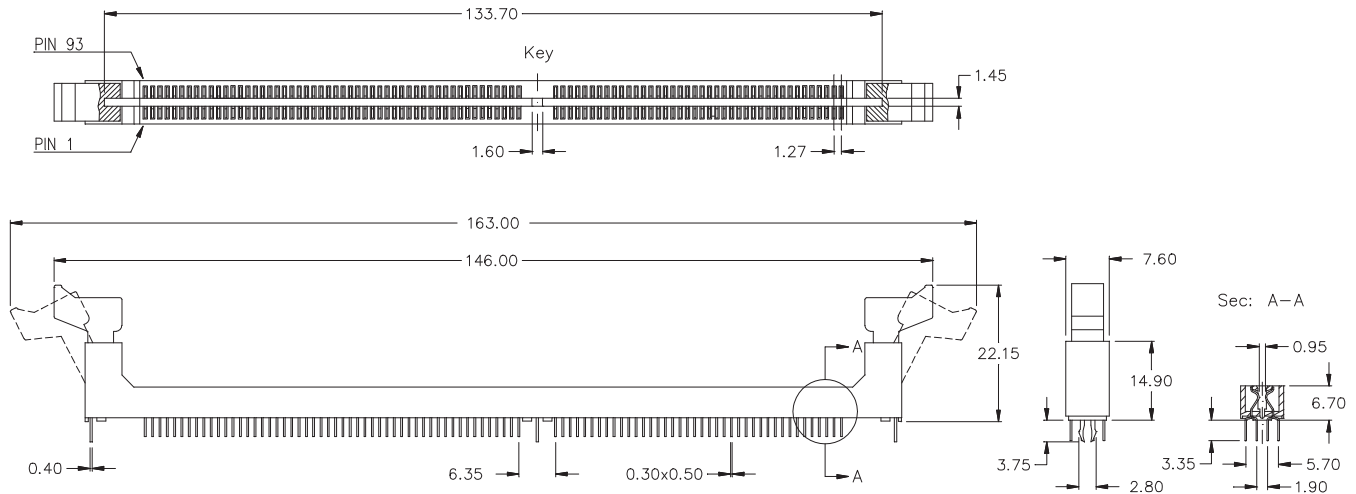


DIMM sockets for DDR module are only available as long latch type (Module locking extractors).

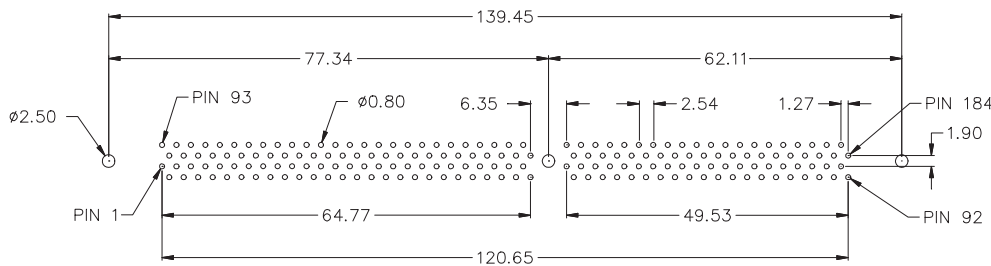
Insertion & extraction of the module can be made without any tools.

Positive polarization prevents wrong insertion of the module.

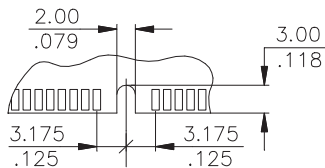
Contacts are designed with an anti-overstress feature for long contact life. Selective Gold/Tin plated. Gold only in contact area.



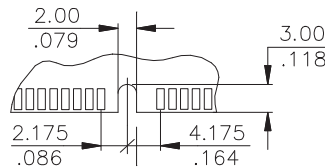
## PC Board hole layout



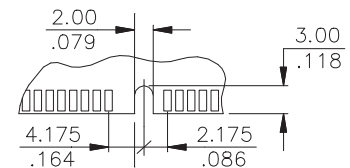
Module keying Type "A"



Module keying Type "B"



Module keying Type "C"



## Specification

Current rating 1 A max., 250V AC  
 Contact resistance 30 mΩ max.  
 Breakdown voltage 1,5 KV RMS max.  
 Insulation resistance 10<sup>4</sup> MΩ min.  
 Capacitance 1 pF max.

Operating temperature -55° C to +105° C min.  
 Insulator (RoHS compliant) high temp plastic UL 94 V-0  
 Contact (RoHS compliant) Copper Alloy  
 Plating Au / Sn (leadfree) over Ni

Pin	Socket Type	Voltage Key	Ordering Code
184 pin	1,8 Volt	Type "A"	Please contact E-tec sales office for availability.
184 pin	2,5 Volt	Type "B"	<b>DR1 - 184 - VBZ9 - 95/1L</b>
184 pin	3,3 Volt	Type "C"	Please contact E-tec sales office for availability.

# DMD Series -SO - DIMM Sockets

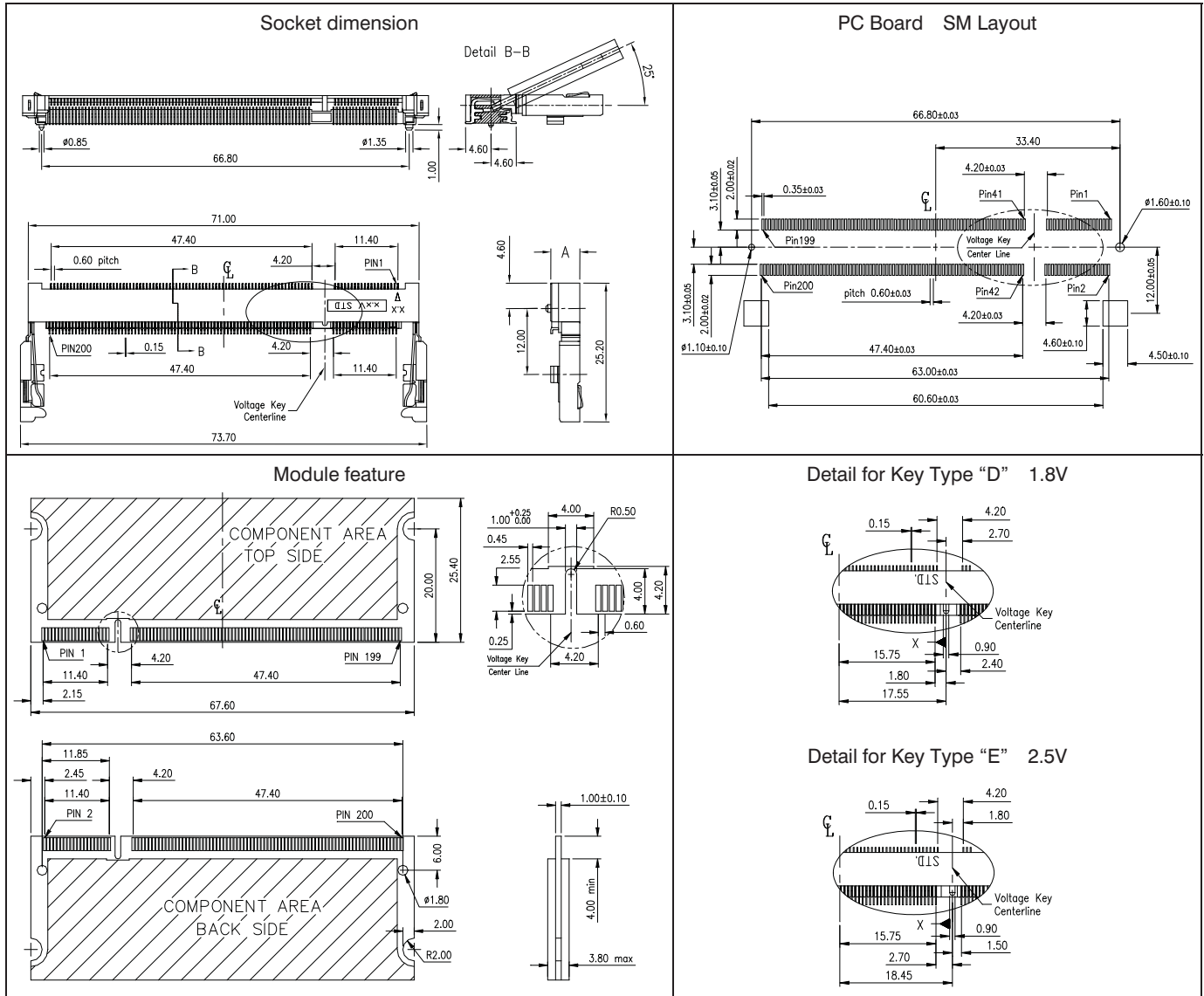
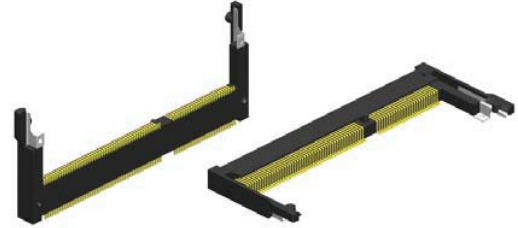
## 200-pin for DDR Module



SO-DIMM sockets for **200-pin DDR Module** are made of hi-temp resistant LCP.

Insertion & extraction of the module can be made without any tools.  
Positive polarization prevents wrong insertion of the module.

Contacts are designed with an anti-overstress feature for long contact life.



Specification			
Current rating	0.5 A	Insulator	(RoHS compliant) LCP <b>black</b> UL 94 V-0
Voltage rating	50 V AC	Contact	ivory on request (RoHS compliant)
Insulation resistance	500 MΩ min. (initial) 100 MΩ max. (final)	Plating	(RoHS compliant) Au over Ni
Contact resistance	50 mΩ max.	Lifetime	25 cycles min.
Operating temperature	-40°C to +80°C min.	Latch	(RoHS compliant) Stainless Steel, Sn (leadfree) plated
Processing temperature	+250°C +0/-5° for 20-40 Sec.		

Pin	SDRAM "Standard" Socket Type	Connector Dimension "A"	Ordering Code	
			1.8 Volt Key Type "D"	2.5 Volt Key Type "E"
200 pin	Low-Profile	4.00 mm	<b>DMD - 200 - RLD9 - 55</b>	<b>DMD - 200 - RLE9 - 55</b>
200 pin	Standard-Profile	5.20 mm	<b>DMD - 200 - RSD9 - 55</b>	<b>DMD - 200 - RSE9 - 55</b>

# DMD Series - SO - DIMM Socket

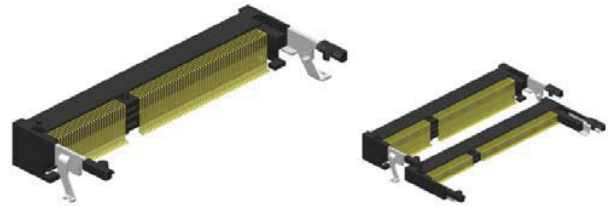
## 200-pin for DDR Module "9.20mm height"



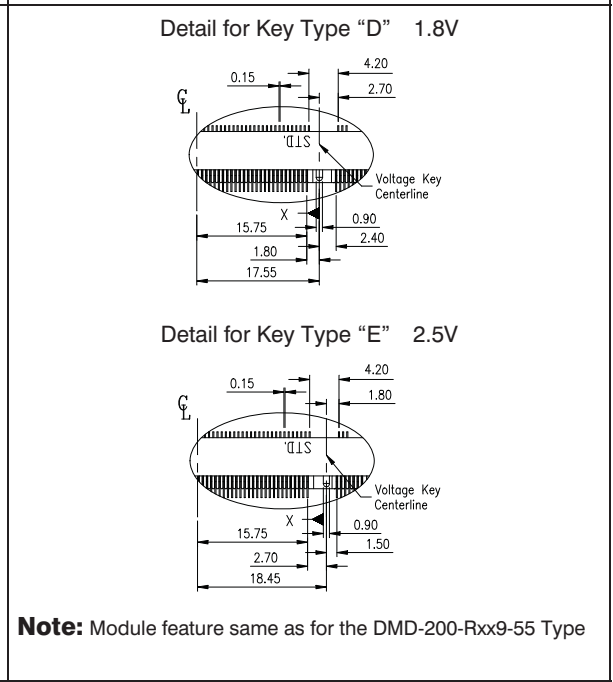
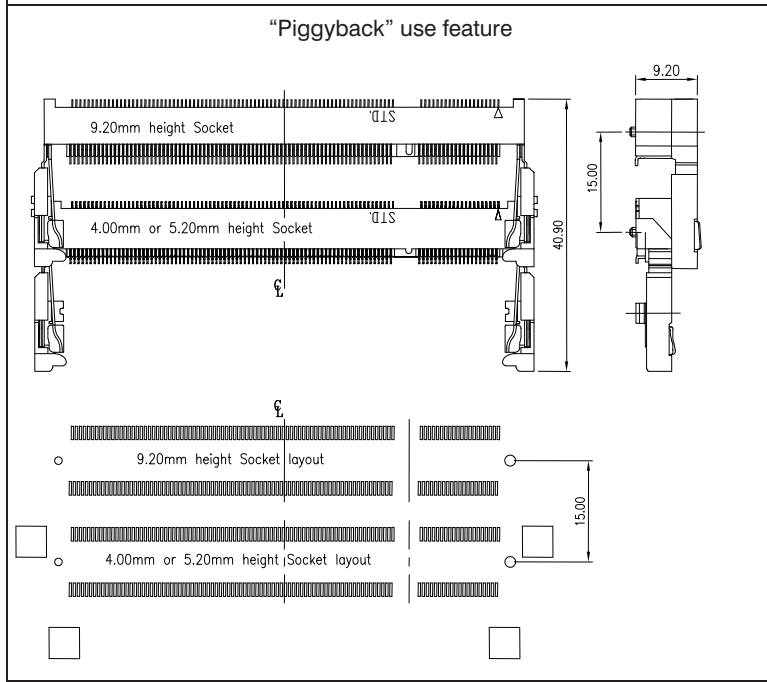
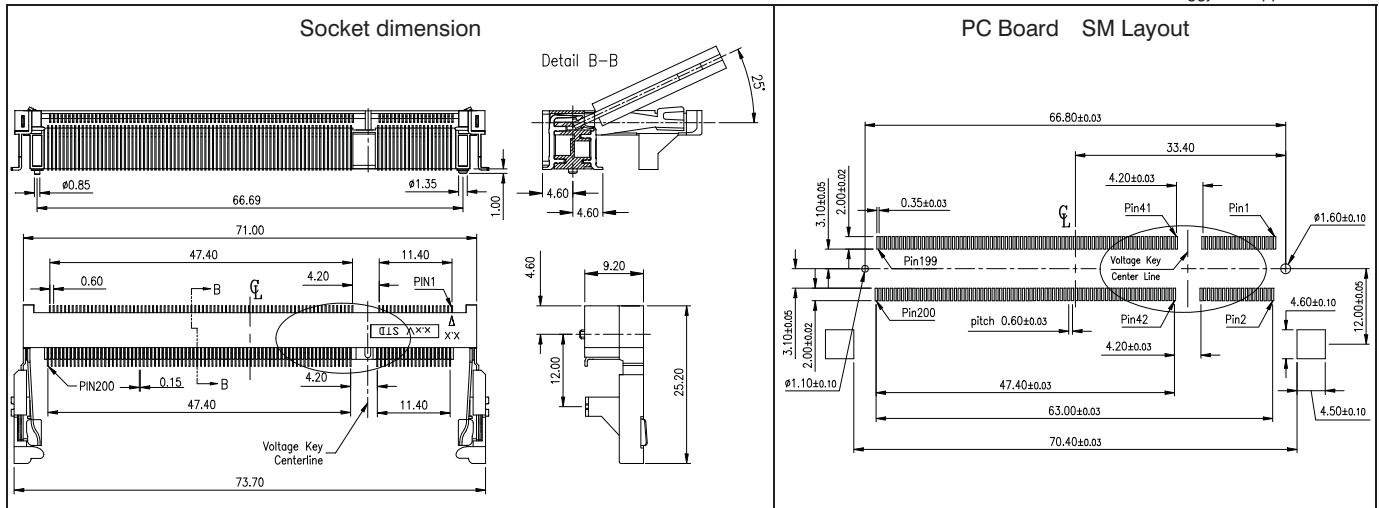
This **9.20mm height** SO-DIMM socket for 200-pin DDR Module, made of hi-temp resistant LCP, can be also used in combination with the 4.00mm & 5.20mm height type as **"Piggyback"**.

Insertion & extraction of the module can be made without any tool. Positive polarization prevents wrong insertion of the module.

Contacts are designed with an anti-overstress feature for long contact life.



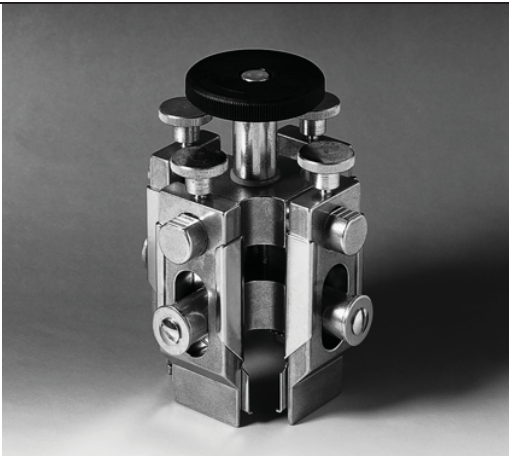
Piggyback application



Specification			
Current rating	0.5 A	Insulator	(RoHS compliant) LCP <b>black</b> UL 94 V-0
Voltage rating	50 V AC	Contact	ivory on request (RoHS compliant)
Insulation resistance	500 MΩ min. (initial) 100 MΩ max. (final)	Plating	(RoHS compliant) Au over Ni
Contact resistance	50 mΩ max.	Lifetime	25 cycles min.
Operating temperature	-40°C to +80°C min.	Latch	(RoHS compliant) Stainless Steel, Sn (leadfree) plated
Processing temperature	+250°C +0/-5° for 20-40 Sec.		

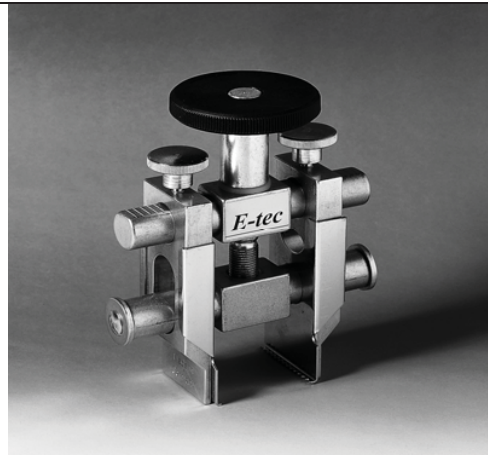
Pin	SDRAM "Standard" Socket Type	Connector Dimension "A"	Ordering Code	
			1.8 Volt Key Type "D"	2.5 Volt Key Type "E"
200 pin	"Piggyback" - Type	9.20 mm	<b>DMD - 200 - RPD9 - 55</b>	<b>DMD - 200 - RPE9 - 55</b>

**PGA Extraction Tools**  
for changing multi-pole PIN-GRID-ARRAYS



For extraction of PIN-GRID-ARRAYS from sockets with high extraction force, the **four side grip claw type** is recommended in order to prevent damaging the Array.

**Order Code: PUL – 2300 – D/26**

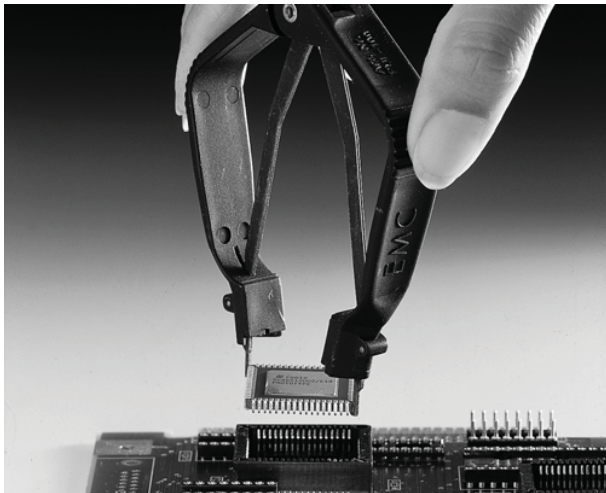


The multi-range tools have spindle actuation and a lifting mechanism with movable support jaws. Solid aluminium crossbars ensure even load distribution during the extraction operation. Their relatively large lift of approx. 15mm also permits safe extraction of arrays with bonded-on heat sinks.

**Order Code: PUL – 2300 – S**

**PLCC , SOJ & LCC “Universal” Extraction Tool**  
**WHY UNIVERSAL ?**

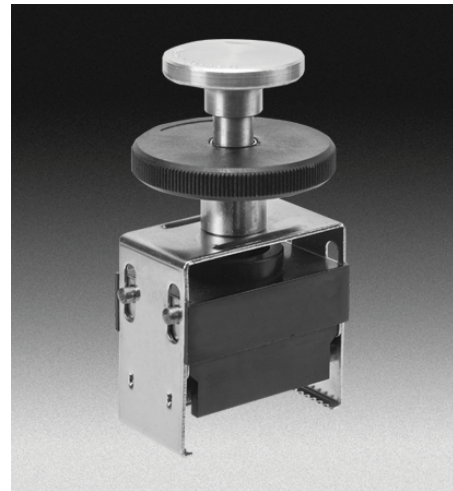
It only requires ONE tool for extracting PLCC & SOJ chips of all pin configurations and LCC 32- and 44-pin chips (E-PROM's). The plastic arms sit on the side, thus avoiding an extraction force on the socket itself. This is most important for SMD sockets, which would otherwise be torn off the board. The same tool can be used for all sockets built according to JEDEC standards and having diagonal entry slots.



**Order Code: PUL – 200**

**PGA Insertion Tools**  
**for inserting multi-pole PIN-GRID-ARRAYS**

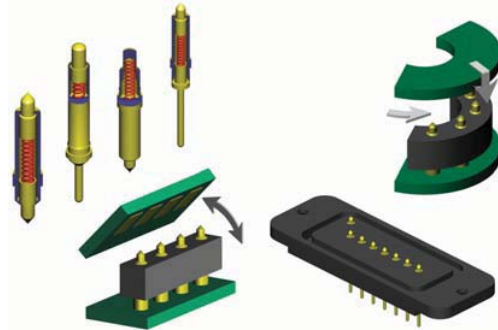
Inserting multi-pole PGA's into Sockets with precision contacts causes the same difficulties as extracting them. When inserting a PGA into a corresponding socket, even pressure must be applied to the top of the PGA. E-tec recommends the use of this PUS-2060 Series in order to avoid tilting and damaging the contact pins.



**Please consult your closest sales office for detailed information and order codes.**



Spring loaded contacts and connectors can be found in numerous environments for consumer and professional electronic applications in fixed or mobile equipments for communications, automotive, loading stations, SIM card connectors, docking stations, test & measurement instruments, cameras (picture & film), medical apparatus and many more. The probe pin and connector designs are generally specifically adapted to customer requirements.



	Plunger tip types (please circle your requirement below)			
	 Single point tip <input type="checkbox"/>	 Crown tip <input type="checkbox"/>	 Convex tip <input type="checkbox"/>	 Concave tip <input type="checkbox"/>
	Probe pin types (please circle your requirement below)			
	Solderless	SMT		Thru-hole
	 Single point tip <input type="checkbox"/>	 Crown tip <input type="checkbox"/>	 Round tip <input type="checkbox"/>	 Flat tip <input type="checkbox"/>
				 Solder tail <input type="checkbox"/>

**Probe pin and Connectors are generally produced to custom specifications.**

**Please supply a datasheet or a sketch of the required probe pin and/or connector dimensions and highlight the critical requirements for your application.**

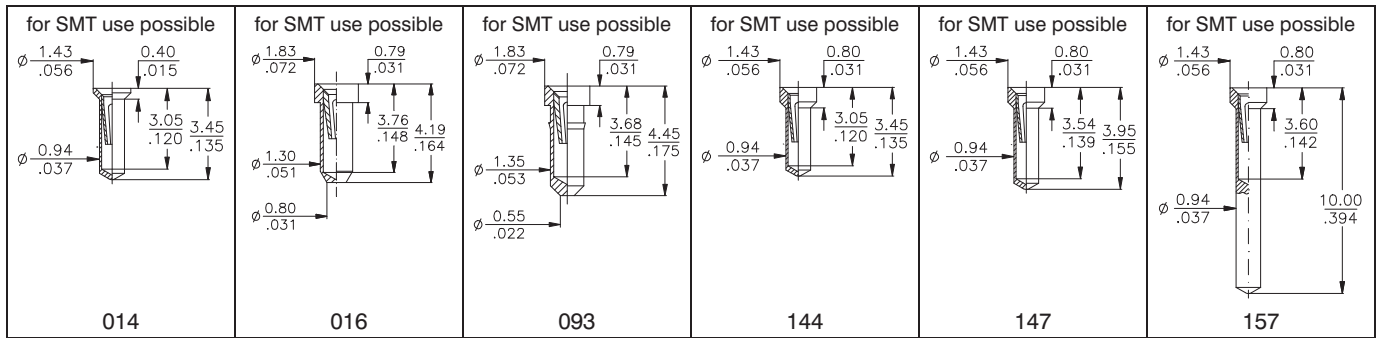
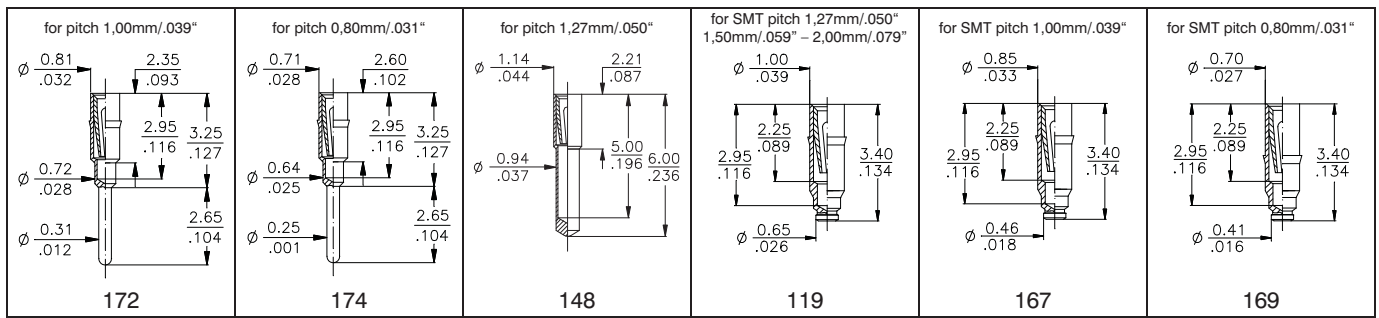
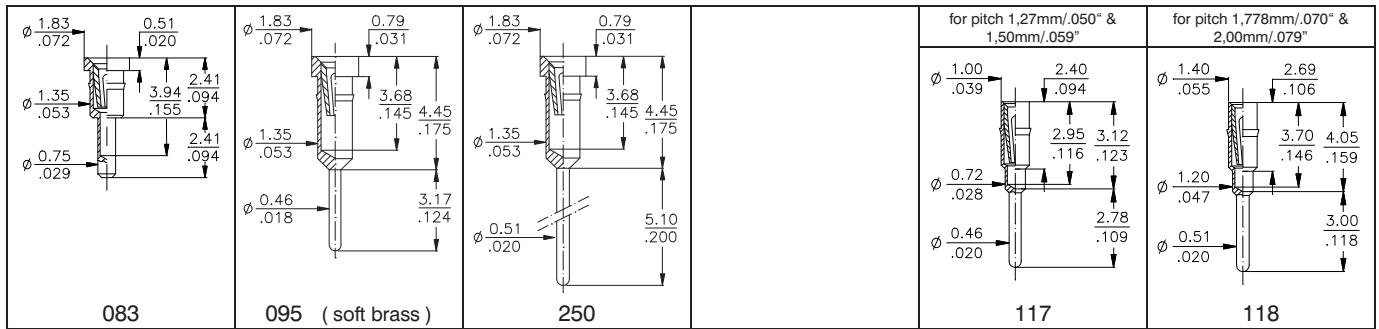
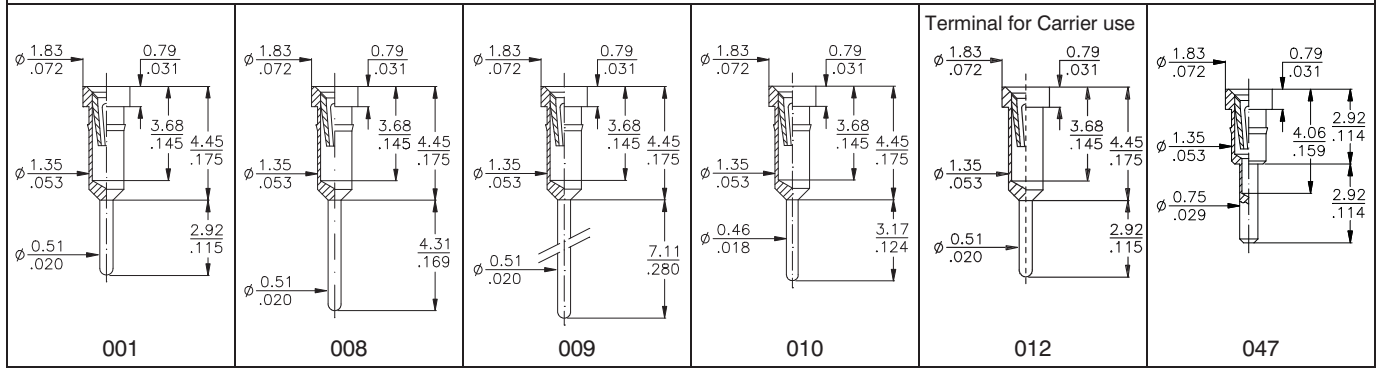
**The list above and below covers some of the probe pin aspects which need to be determined or which may be critical for your application.**

**Please complete and/or tick your requirements and send this page to your closest E-tec sales office.**

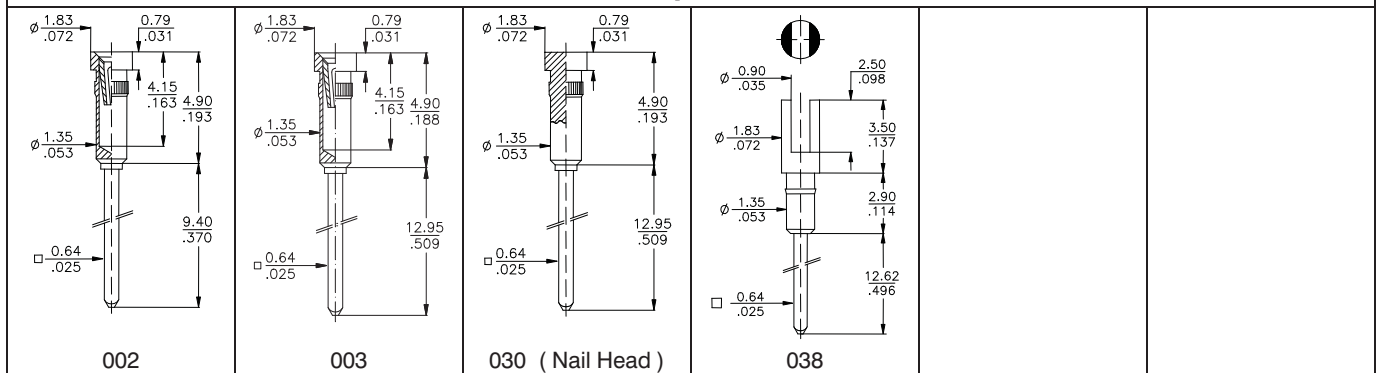
**If you need any further assistance, please do not hesitate to call.**

Overall height DIM. "A"	Plunger travel (stroke) DIM "B"	Pitch	
Contact force	Current rating	Mechanical life	
Bandwidth	Operating temperature		
Material specs for plunger			
Material specs for spring			
Material specs for barrel			
Material specs for connector body			

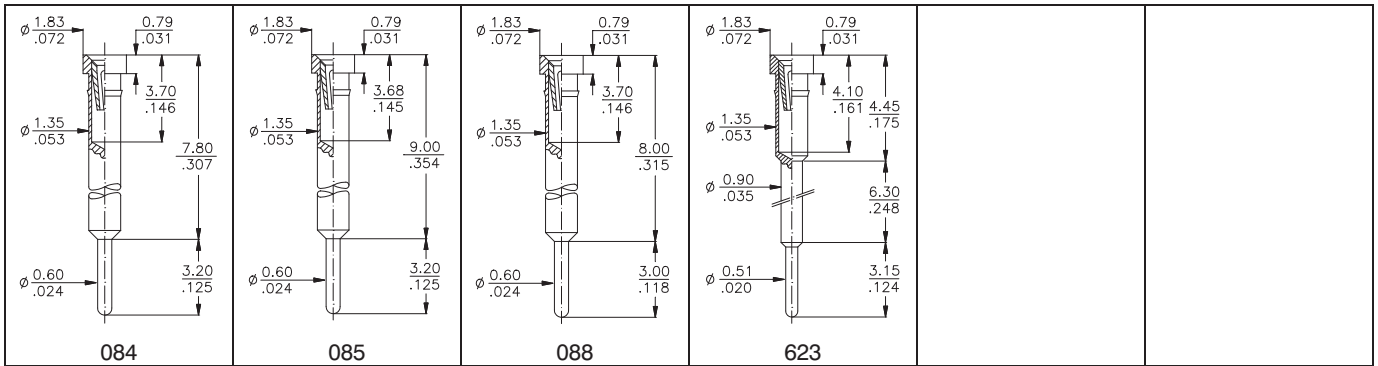
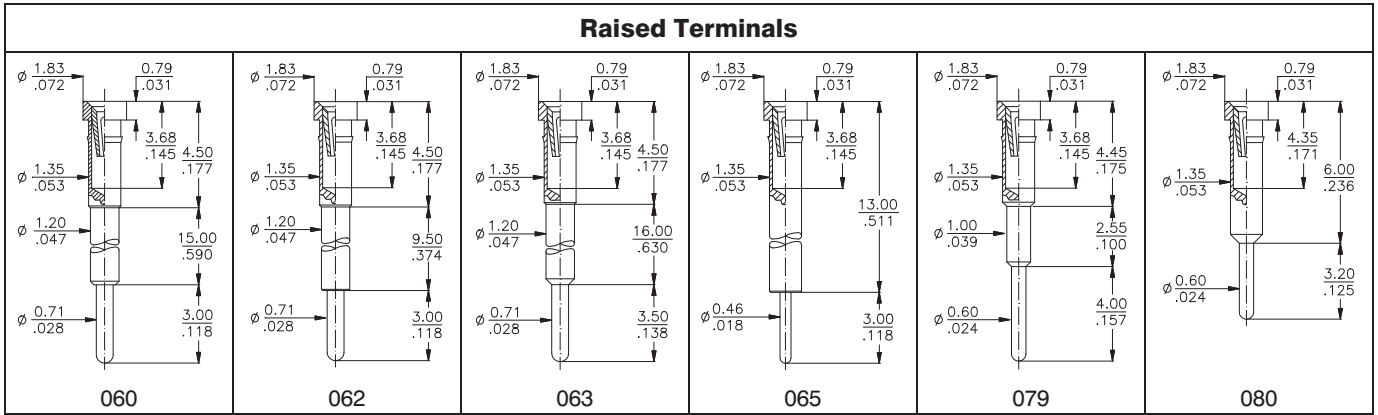
## Socket Terminals



## Wire Wrap Terminals

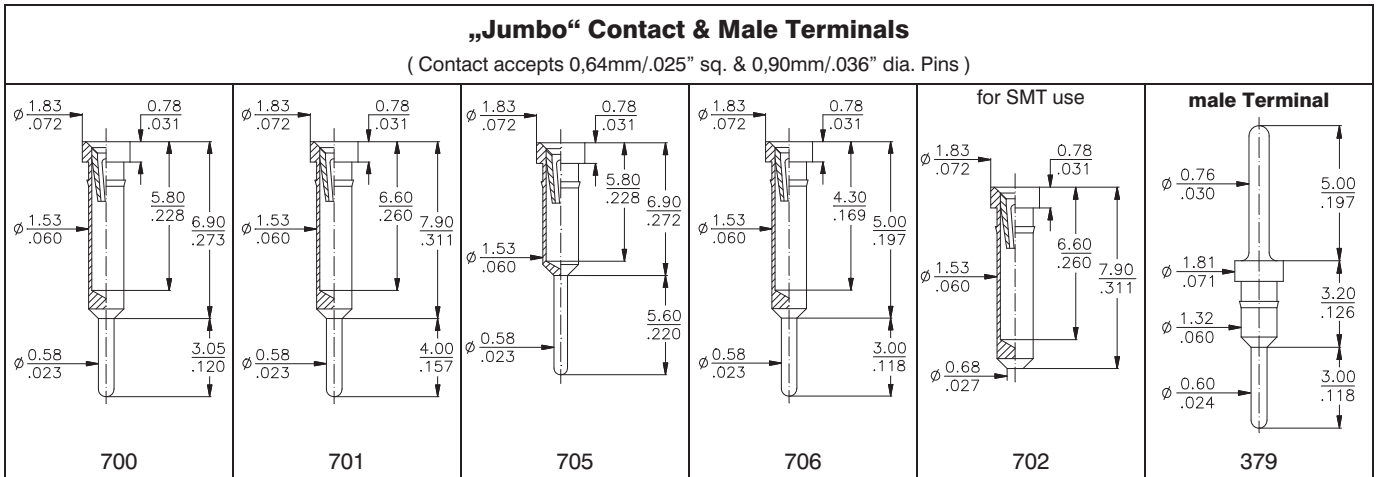


## Raised Terminals

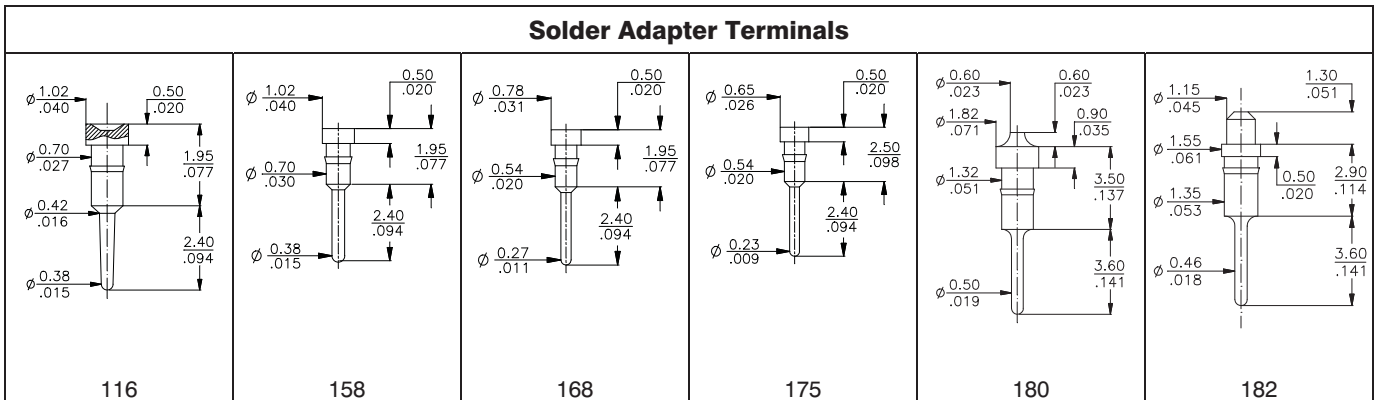


## „Jumbo“ Contact & Male Terminals

( Contact accepts 0,64mm/.025" sq. & 0,90mm/.036" dia. Pins )



## Solder Adapter Terminals



## Board to Board Terminals

<p>037</p>	<p>056</p>	<p>057</p>	<p>058</p>	<p>059</p>	
<p>077</p>	<p>078</p>	<p>220</p>	<p>372</p>	<p>377</p>	
<p>542</p>	<p>544</p>	<p>562</p>	<p>583</p>	<p>770</p>	<p>for pitch 1,27mm/.050"</p> <p>774</p>

## Header Terminals

<p>036</p>	<p>353</p>	<p>038 ( Wire Wrap )</p>			
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## General Specifications for Precision Pin Sockets

### Mechanical data

Average forces for available clip types:	
Standard type	1.80N insertion / 0.90N extraction
Low force type	0.70N insertion / 0.25N extraction
Super low force type	0.40N insertion / 0.15N extraction
High force type	4.00N insertion / 2.50N extraction
„Jumbo“ contact	1.40N insertion / 0.25N extraction
<i>Other clips and forces available on request</i>	
Contact life	min. 100 cycles
Vibration as per EN60352-4	sinusoidal, 10 to 500 Hz, 10g, 1 octave/min, 10 cycles for each axis
Shock as per EN60352-4	half sine, 50g, 11ms, 3 shocks in 3 axes
Thermal shock as per IEC 60068-2-14	-55°C/+125°C, 5 cycles, 30 minutes
Solderability as per IEC 60068-2-58	245°C to 255°C 5 sec; Sn97Ag3 solder alloy
Dry heat steady state as per IEC 60068-2-2	260°C for 20 sec.
Cold steady state as per IEC 60068-2-1	-55°C, 2h
Damp heat cyclic as per IEC 60068-2-30	55°C, 90-100%rH, 24h
Moisture sensitivity Level (JEDEC J-STD-020C)	2 for PBT & Nylon 1 for all other materials
PCB holes for 2.54mm pitch standard connectors	1.00mm diameter
Coplanarity thru-hole	0.30mm
General tolerances	+/- 0.10mm

### Operating temperature (standard)

-55°C to +125°C

### Processing temperature

injection molded insulator (high temp)	+250°C +0/-5°C for 20~40 sec. (reflow solder)
injection molded insulator (PBT)	+250°C +0/-5°C for 10 sec. (wave solder only)
Epoxy FR4 (Standard)	+220°C min. for 10 sec.
Epoxy FR4 (hi temp)	+260°C min. for 60 sec.

### Electrical data

Contact resistance at 1A	4,3 mΩ typ.
Current rating (except „Jumbo“ contact)	1A max.
„Jumbo“ contact	3A max.
Contact capacitance at 1MHz	2pF max.
Insulation resistance at 500V DC for std & hi-temp	5 × 10 <sup>9</sup> Ω min.
Insulation resistance at 500V DC for FR4 Epoxy	> 10 <sup>4</sup> MΩ
Breakdown voltage at 60 Hz	500 V AC min.
Contact resistance after 1000 ins./ext. cycles	≤ 7 mΩ

### Material (RoHS compliant)

Standard temperature plastic: PBT  
UL 94 V-0  
High-temp plastic: Nylon, PCT, SPS, PPS, LCP  
UL 94 V-0

### Belongs to page:

14, 15, 16, 23, 17, 19, 20, 24  
25, 26, 27, 29  
5, 6, 7, 8, 9, 10, 11, 12, 13, 14  
15, 16, 21, 22, 20, 25, 26, 27  
28, 33, 34, 35, 36, 37, 38, 39  
40, 41, 42, 43

### Epoxy FR4:

UL 94 V-0 & UL 94 V-1

32, 5, 6, 7, 18, 22, 24, 29

PBT, Nylon, PCT, SPS, PPS, LCP & Epoxy FR4

If necessary pls. contact E-tec for Material specification.

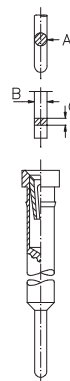
Terminal: CuZn

Contact: BeCu

### Male pin dimensions for standard clip (except „Jumbo Contact“)

(DIN 41 870, IEC 191 for square IC-legs)

DIM	min.	max.
„A“ ∅	0.42 .016"	0.56 .022"
„B“ □	0.36 .014"	0.55 .023"
„C“ □	0.20 .008"	0.30 .014"



## General information concerning the E-tec interconnect products

### Plating:

Standard tin plating:  
min. 2.50μm Sn (*leadfree*) over Ni  
Standard gold plating:  
flash, max. 0,10μm Au over Ni  
Higher gold platings are offered on request

### Specifications:

The data contained in this catalog is of general nature and refers to standard products. For example a „Current rating“ at an ambient temperature of 25° C reflects the value per individual contact. Should you require any further data or test reports, you can obtain this information from your nearest E-tec sales office.

The E-tec connectors conform with signal integrity requirements at high data and frequency rates. However we cannot offer a general information about the max. frequency or data transmission rate. For such a statement, it would require more information about the chosen configuration and pin-out, the length of the cable and/or any other specific requirements regarding the application itself and its related signal integrity.

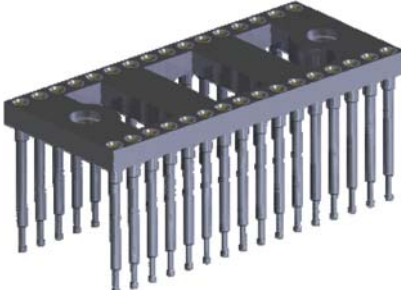
E-tec SMT connectors, male or female, are offered with a coplanarity of max. 0,10mm. They are adapted to all modern SMT soldering processes and they can be handled easily with all currently existing placing techniques. Customers may choose between various packaging options, such as tray, tube and tape & reel.

### GENERAL POLICY

All information contained in this catalog, including illustrations, specifications and dimensions are accurate to the best of our knowledge, and reflect the status as at the date of publication. Due to technical progress, it is subject to change without notice. Application information is informational in nature and shall not be construed to warrant suitability of products for any particular purpose as performance may vary depending on the conditions to which a product is subjected. Unless otherwise confirmed at the time of order, all E-tec products are non cancellable and non returnable items (NCNR). E-tec products are warranted for 30 days and the warranty is limited strictly to replacement of products. This warranty does not cover any claims for natural wear and tear, nor for any compensations, such as loss of production, loss of use, loss of orders, loss of profit, nor any other direct or indirect damages.

Contact your closest office for customized products

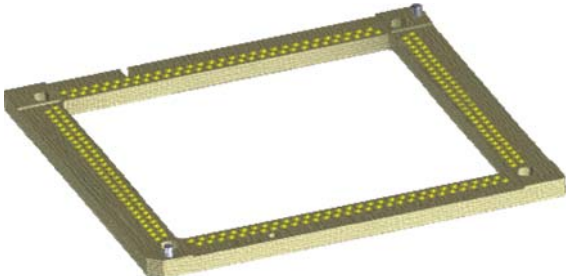
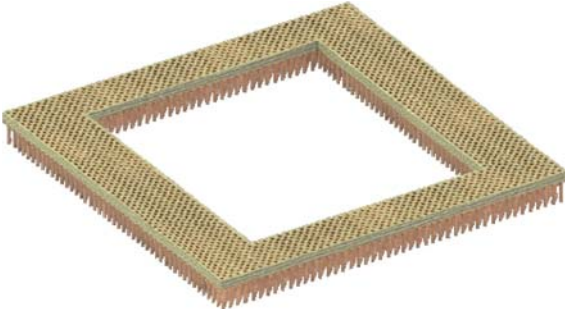
Consumer Electronics examples



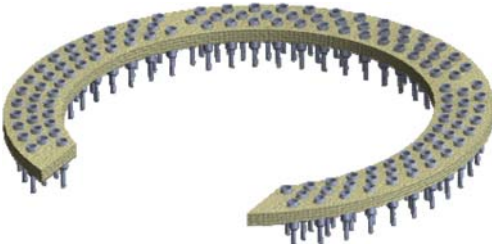
Industrial Electronics examples



Military & Aerospace Electronics examples

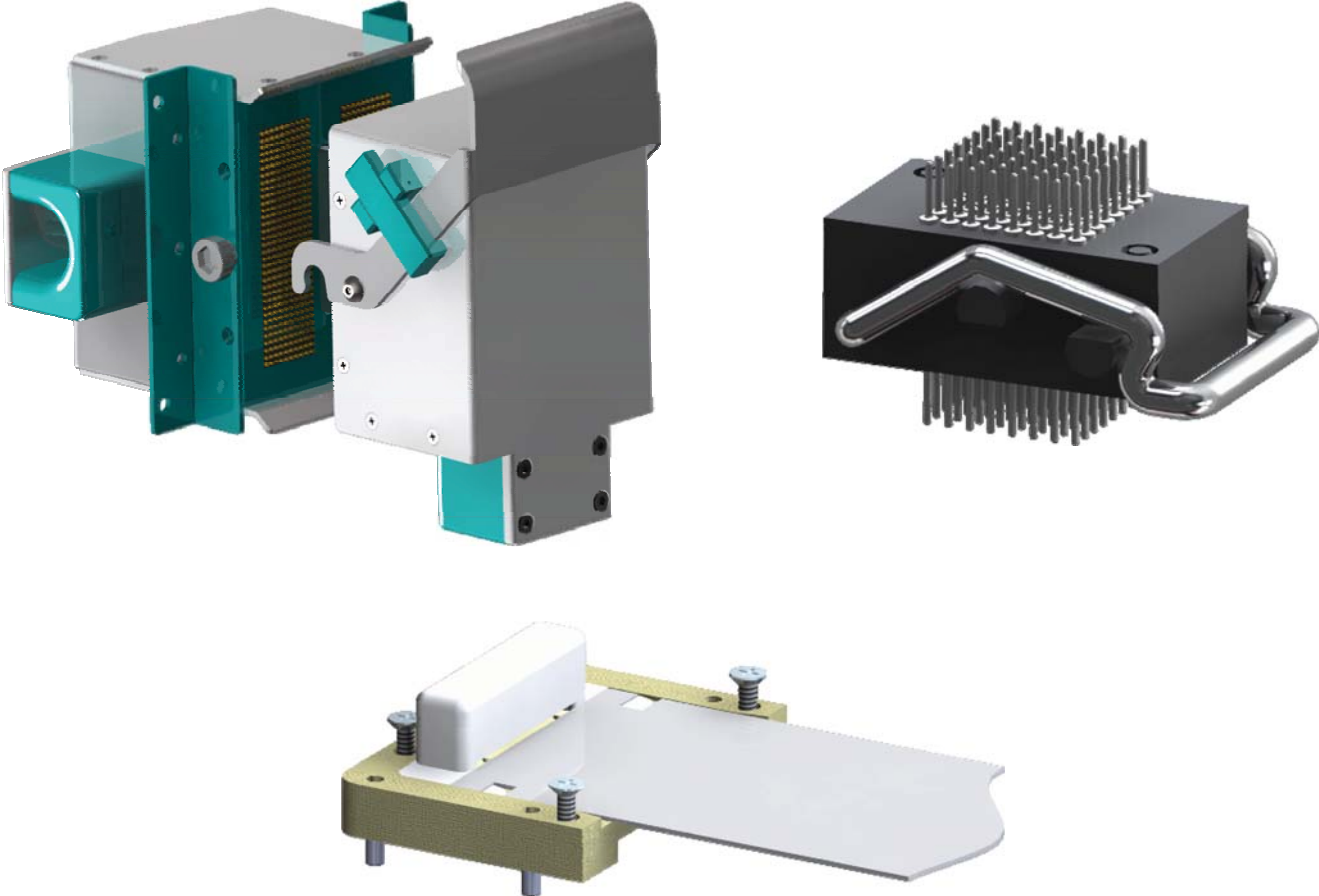


Test- & Measuring Electronics examples

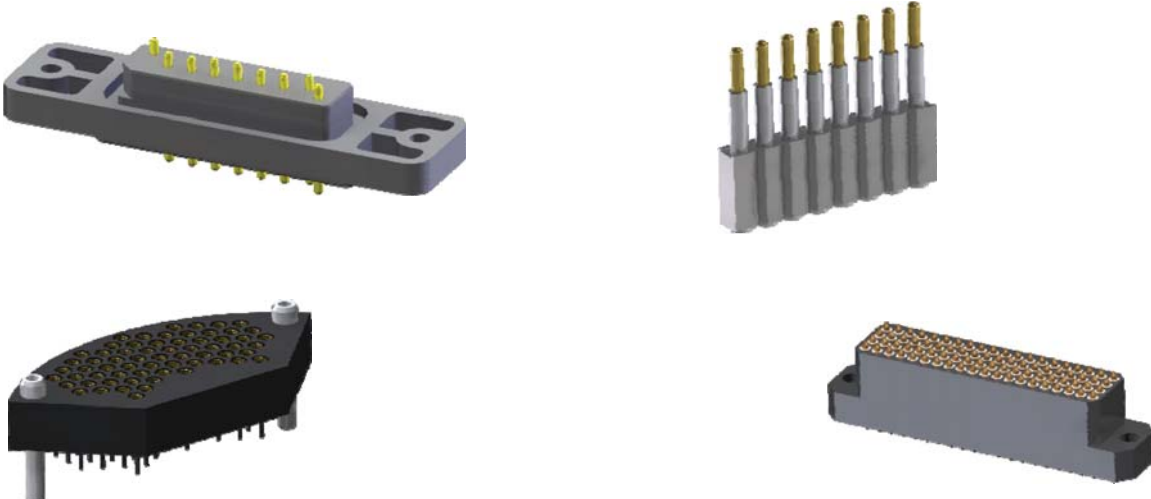


Contact your closest office for customized products

Medical Electronics examples



Telecommunication examples

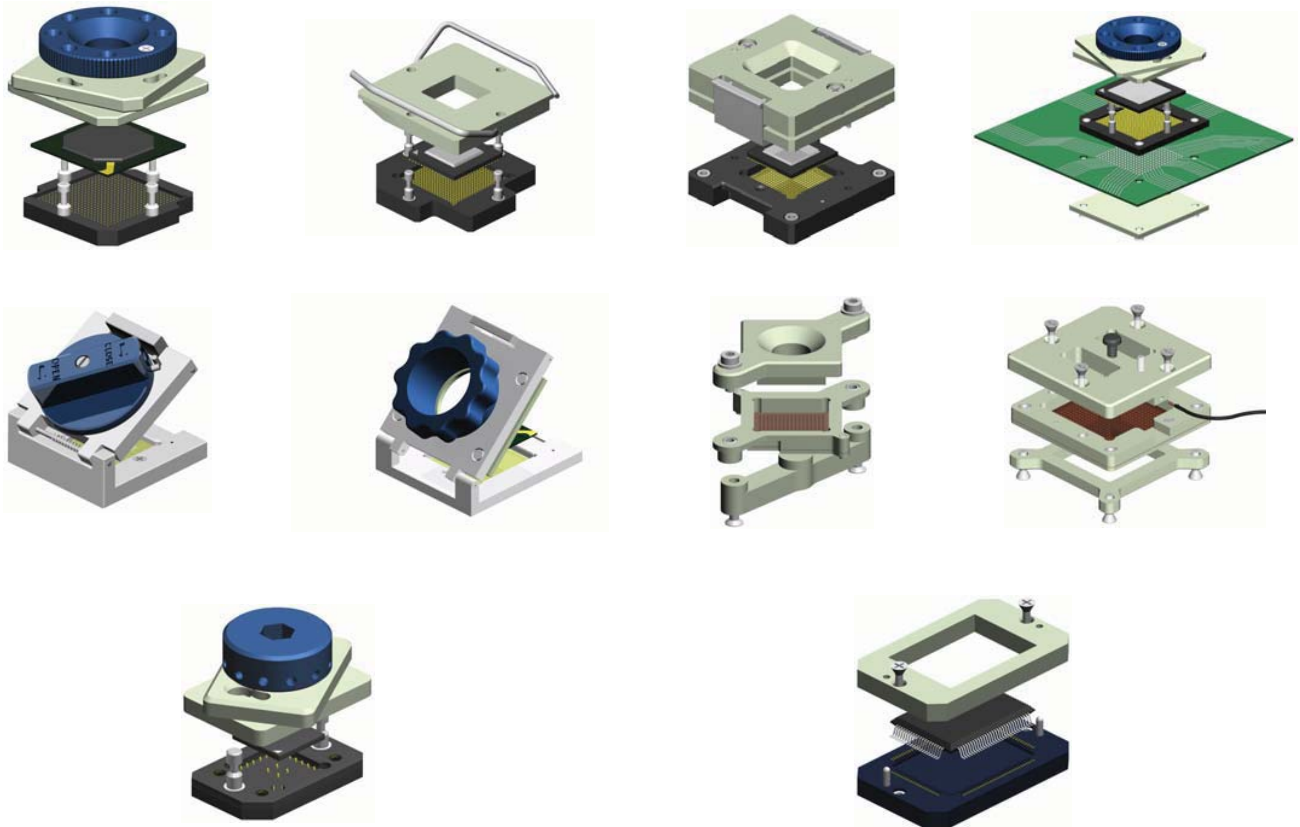


E-tec test sockets are custom made high temperature sockets to test IC packages on a PCB (BGA, LGA, CGA, QFN, GullWing type, etc.).

Generally used for prototyping, pre-production and test & burn-in, the E-tec test sockets allow the customer to insert an IC package into the socket, test it in its original condition and remove it again for final soldering to the PCB after all tests have been completed. The sockets are easily adaptable to customer requirements.

For more information please refer to our Test Socket catalog TS-01

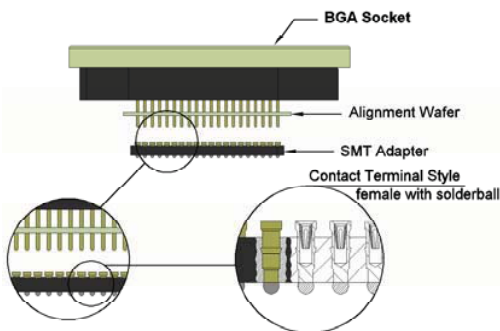
**Test Sockets (BGA, LGA, CGA, QFN, GullWing Type) available with a large variety of locking systems**



## Adapter Solutions

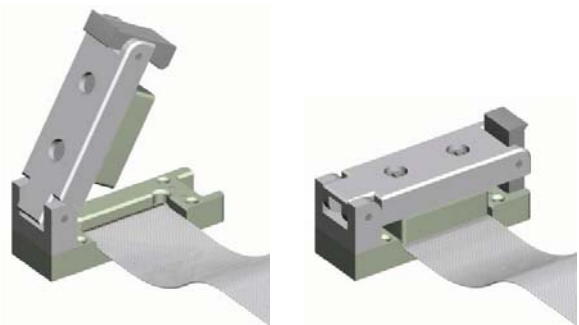
An alternative to direct soldering of test sockets to the PCB.

A light weight SMT adapter is soldered to the PCB first, and then the test socket can be plugged into this adapter and unplugged again.



## ZIF Test Sockets for Flex Cable

Used for testing components (scanner, membrane switch, etc) which need to be connected via a FFC/FPC cable.

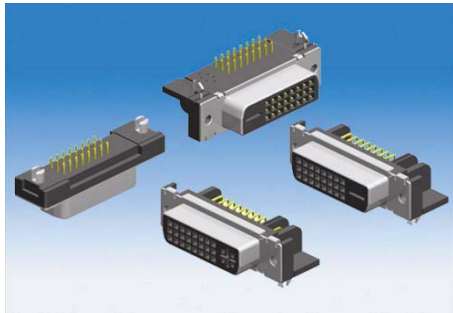




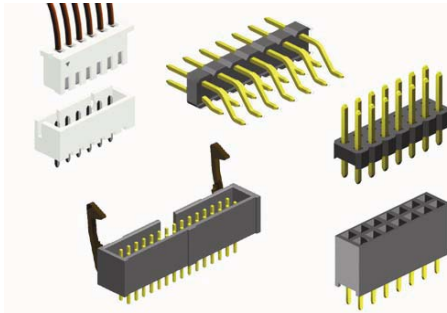
# Other products from E-tec



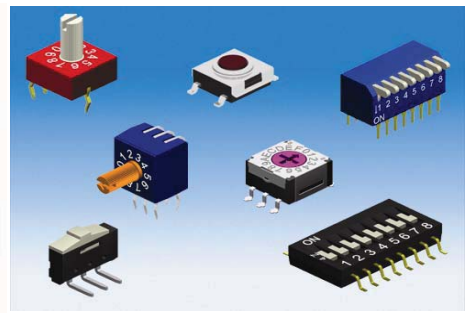
Please contact your closest sales office for further information.



DVI Connectors



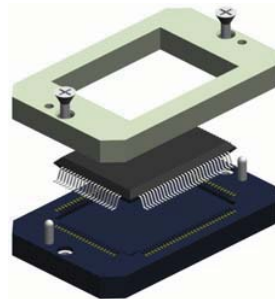
PCB Connectors



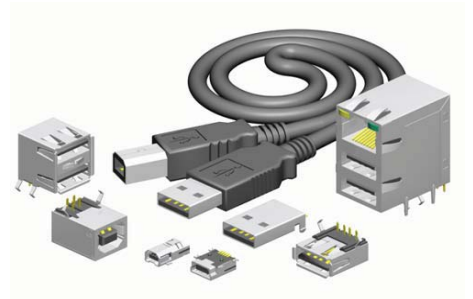
DIP Switch



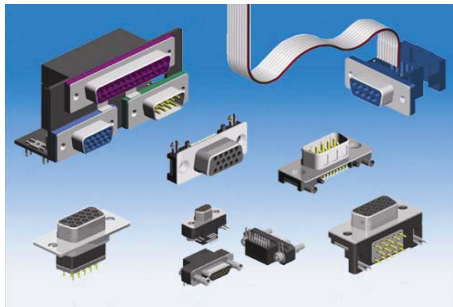
Mini DIN Connectors



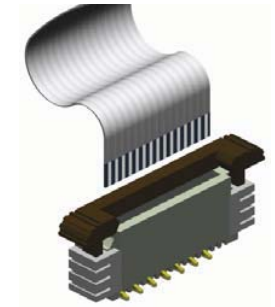
Gullwing Chip Sockets



USB & IEEE 1394 Connectors



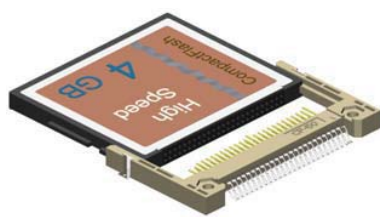
D-Sub Connectors



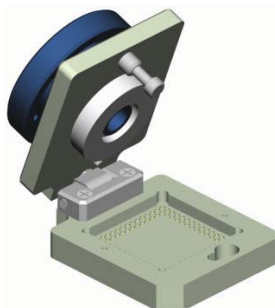
Flex Cable Connectors



HDMI Connectors



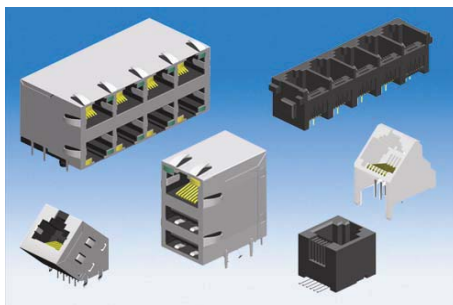
Compact Flash Connector



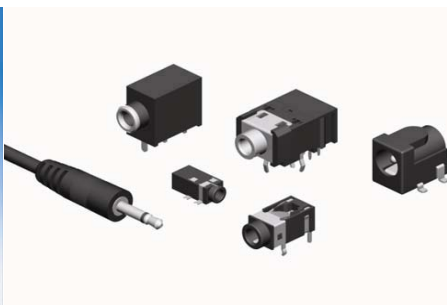
Ball / Land Grid Array Sockets



Multi Media Card Connectors



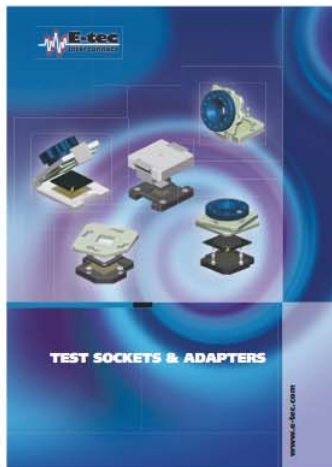
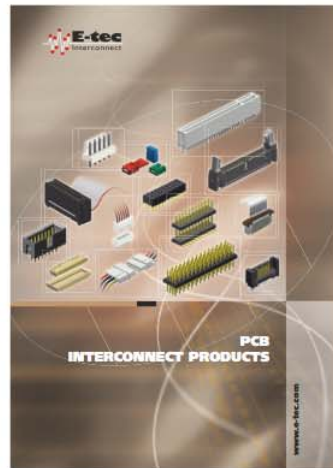
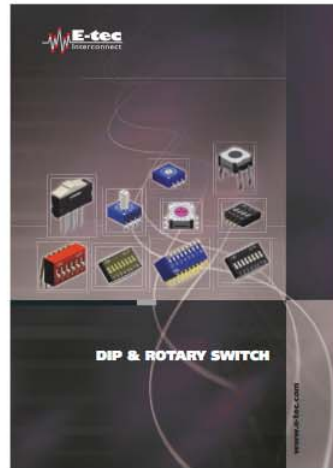
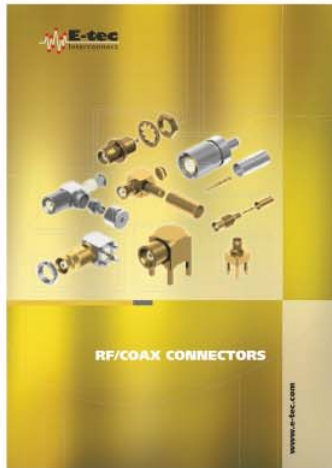
Modular Plugs & Jacks



Phono - & DC - Power Connectors



RF - Connectors



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