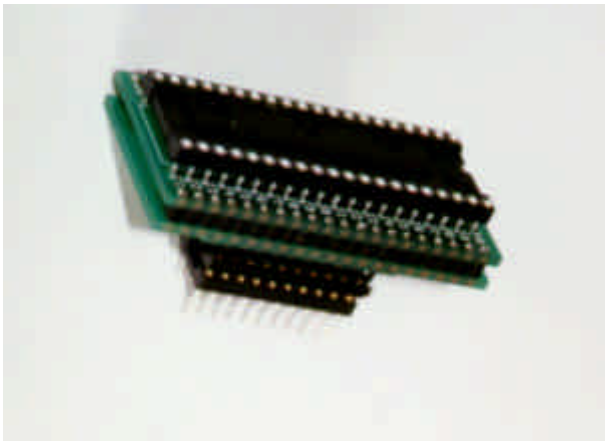
# ***Mechanical Accessories***

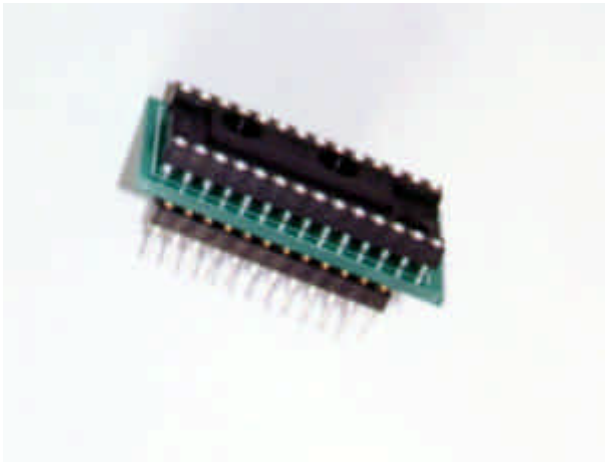
# Emulator Adapters (DIP, PLCC, QFP, SO)

## ADP-20D



Converts the 40-pin DIP footprint of an 80C51 to 20-pin DIP of an 89C1051/2051. Used with EB-51, DS-51 and many other 8051 development tools.
H³25mm L=58mm W=28mm
Upper socket: 40-pin DIP
Bottom plug: 20-pin DIP

## ADP-24D

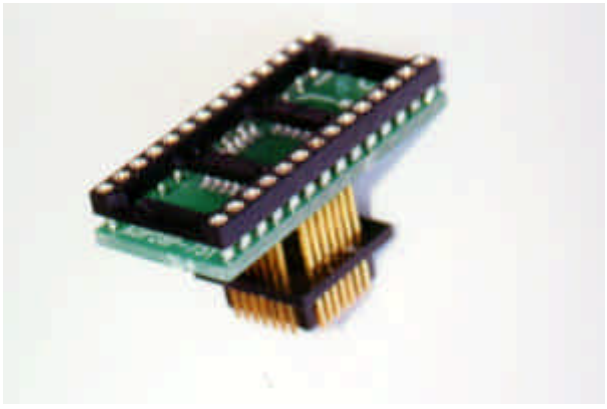


Converts the 28-pin DIP footprint of an 87C752 to 24-pin DIP of an 87C748,87C750/1. Used to adapt DS-752 or DS-51 emulators to support 87C748, 87C750/1 and others.
H³15mm L=40mm W=23mm
Upper socket: 28-pin DIP - 0.6″
Bottom plug: 24-pin DIP - 0.3″

## ADP-28P

Converts any 28-pin DIP footprint to a 28-pin PLCC. Used for 87C749, 87C752 emulation in PLCC package with DS-51 or DS-752 emulators or any other device that maintain the one-to-one pinout configuration.
H³15mm L=45mm W=28mm
Upper socket: 28-pin DIP - 0.6″
Bottom plug: 28-pin PLCC

## ADP-28P-751

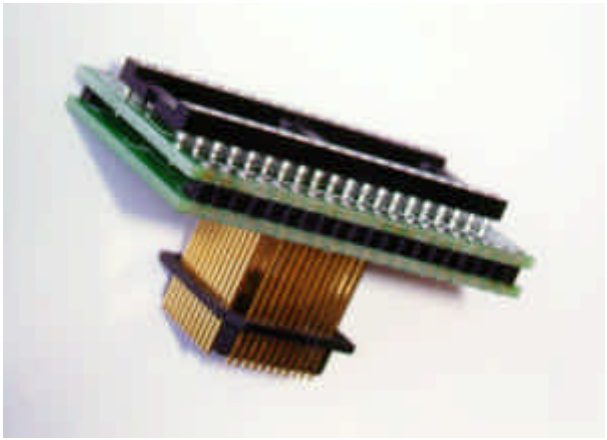


Converts the 28-pin DIP footprint of an 87C752 to a 28-pin PLCC of 87C748, 87C750/1. Used for 87C748, 87C750/1 emulation in PLCC package with DS-51 or DS-752 emulators.
H³15mm L=45mm W=28mm
Upper socket: 28-pin DIP - 0.6″
Bottom plug: 28-pin PLCC

## ADP-40D

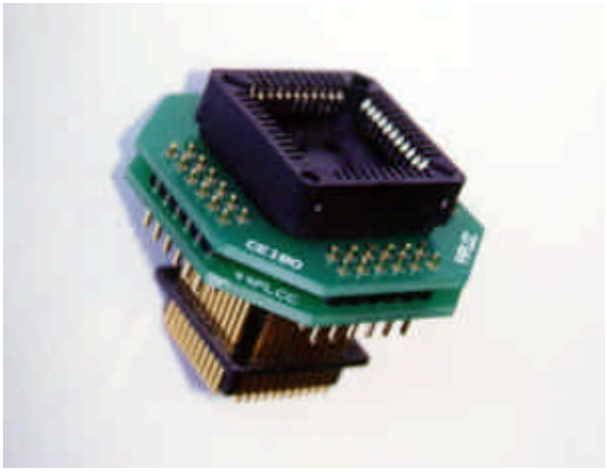
Converts the 44-pin PLCC footprint of 8051 microcontrollers to 40-pin DIP of 8051 microcontrollers or equivalents. Used with DB-51, EB-51 and many other 8051 development tools.
H³25mm L=58mm W=28mm
Upper socket: 44-pin PLCC
Bottom plug: 40-pin DIP - 0.6″

## ADP-44P



Converts the 40-pin DIP footprint of 8051 microcontrollers to 44-pin of 8051 microcontrollers or equivalents. Used with DS-51, EB-51 and many other 8051 development tools.
H³32mm L=58mm W=28mm
Upper socket: 40-pin DIP
Bottom plug: 44-pin PLCC

## ADP-44P-E



This is a PLCC extender for 44-pin devices. Used to provide more space from the emulator to the target board.

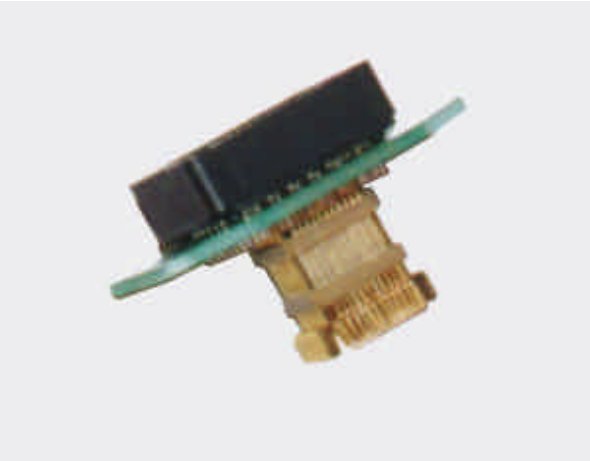
H³20mm L=28mm W=28mm
Upper socket: 44-pin PLCC
Bottom plug: 44-pin PLCC

## ADP-44Q

Converts the 40-pin DIP footprint of 8051 microcontrollers to 44-pin QFP of 8051 microcontrollers or equivalents. The bottom plug is soldered to the target board. Used with DS-51, EB-51 and many other 8051 development tools. Equals to OM5020 and OM5019.

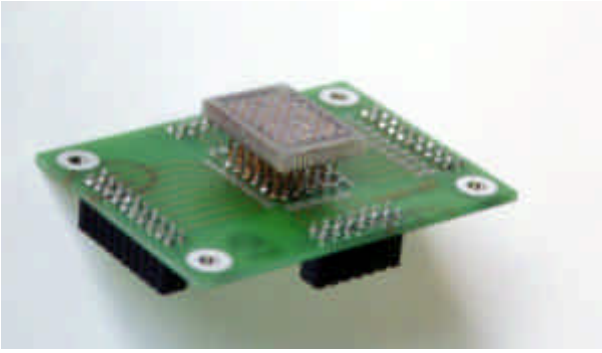
H³10mm L=58mm W=30mm
Upper socket: 40-pin DIP
Bottom plug: 44-pin QFP

## ADP-44Q-P



Converts a 44-pin PLCC footprint to 44-pin QFP. The bottom plug is soldered to the target board. Used for any QFP device emulation with one-to-one PLCC pinout configuration.
H³32mm L=58mm W=30mm
Upper socket: 44-pin PLCC
Bottom plug: 44-pin QFP

## ADP-56V



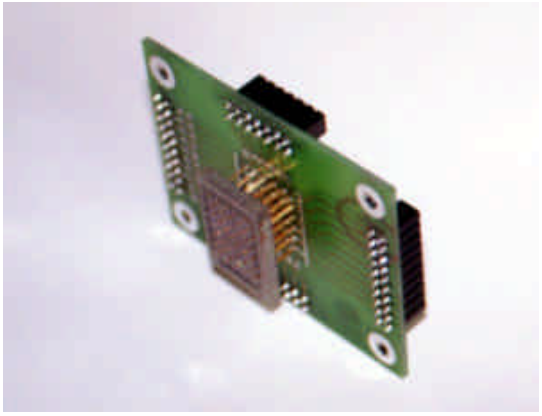
Converts the row of pins of DS-51 Emulation Header for 8xCL580 to 56-pin VSO. The bottom plug is soldered to the target board. This adapter is equivalent to OM5017 and OM5033.
H³18mm L=65mm W=50mm
Upper socket: Row of pins - 0.1″
Bottom plug: 56-pin VSO

## ADP-64Q

Converts the row of pins of DS-51 Emulation Header for 8xCL580 to 64-pin QFP. The bottom plug is soldered to the target board. This adapter is equivalent to OM5017 and OM5016.

H³18mm L=65mm W=50mm
Upper socket: Row of pins - 0.1″
Bottom plug: 64-pin QFP

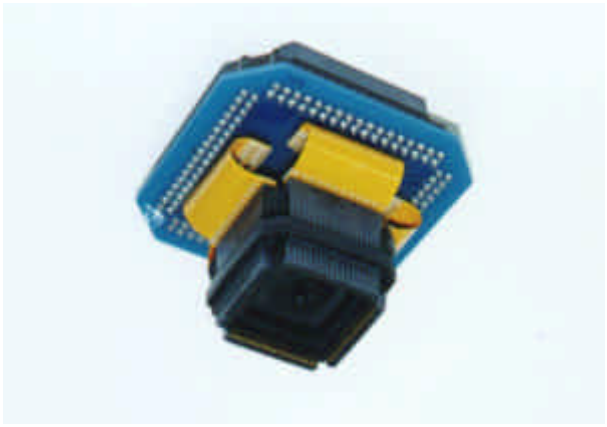
## ADP-80Q



Converts the row of pins of DS-51 Emulation Header for 8xC558/598 to 80-pin QFP. The bottom male plug is soldered to the target board. This adapter is equivalent to ET-EPP-080QF-08W.

H³40mm L=56mm W=56mm
Upper socket: Row of pins - 0.1″
Bottom plug: 80-pin QFP

## ADP-80Q-EB



Converts the PLCC DS-186 Emulation Header for 80C186EB to 80-pin QFP. The bottom plug is a surface mounted clip.

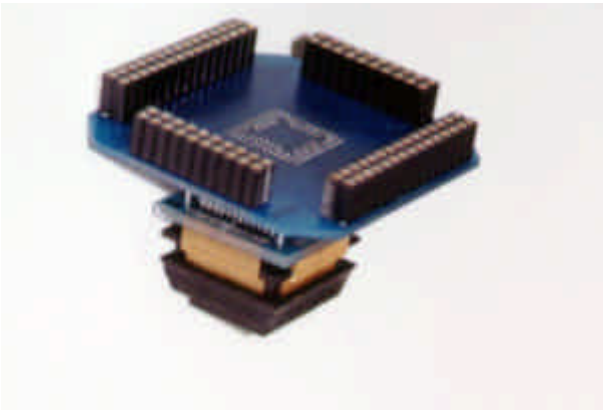
H³42mm L=56mm W=56mm
Upper socket: 84-pin PLCC
Bottom plug: 80-pin QFP

## ADP-100Q-SMC

Converts the row of pins of DS-186 Emulation Header for 80C186EC-PQFP to 100-pin QFP. The bottom plug is a surface mounted clip. This adapter is equivalent to ET-EPC-100QF01-SM3.

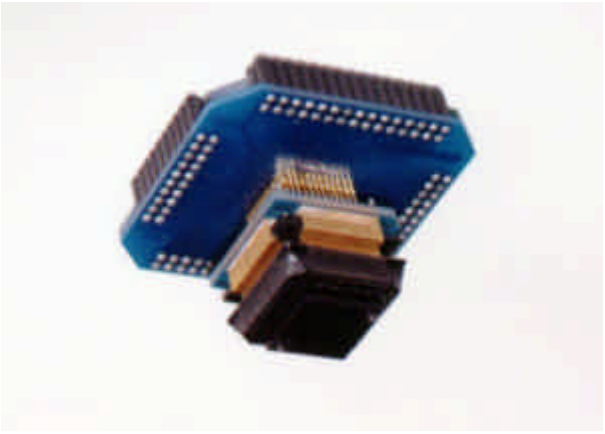
H³42mm L=56mm W=56mm
Upper socket: Row of pins - 0.1″
Bottom plug: 100-pin QFP

## ADP-100Q-AMP



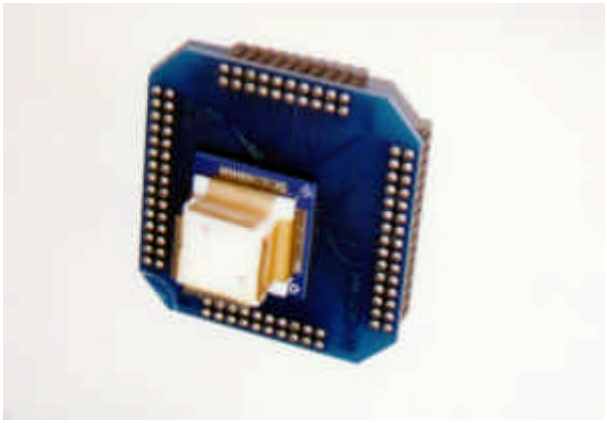
Converts the row of pins of DS-186 Emulation Header for 80C186EC-PQFP to 100-pin QFP. The bottom male plug is used for AMP sockets. This adapter is equivalent to ET-EP5-200QF01-ASM.
H≥42mm L=56mm W=56mm
Upper socket: Row of pins - 0.1″
Bottom plug: 100-pin QFP

## ADP-100Q-TEX



Converts the row of pins of DS-186 Emulation Header for 80C186EC-PQFP to 100-pin QFP. The bottom male plug is used for Textool sockets. This adapter is equivalent to ET-EP5-100QF01-TSM.
H³42mm L=56mm W=56mm
Upper socket: Row of pins - 0.1″
Bottom plug: 100-pin QFP

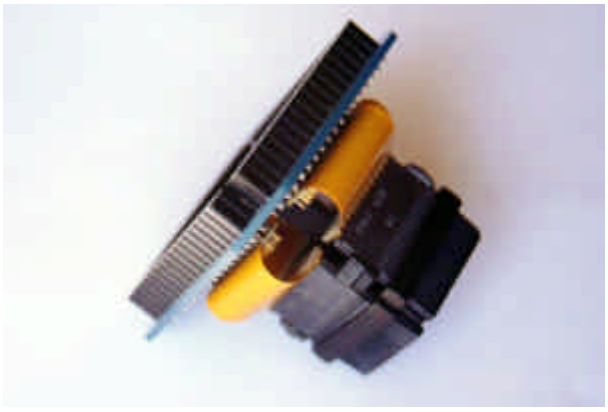
## ADP-100Q-SOL



Converts the row of pins of DS-186 Emulation Header for 80C186EC-PQFP to 100-pin QFP. The bottom male plug is a surface mounted plug soldered to pads. This adapter is equivalent to ET-EP5-100QF01-SSM.

H³42mm L=56mm W=56mm
Upper socket: Row of pins - 0.1″
Bottom plug: 100-pin QFP

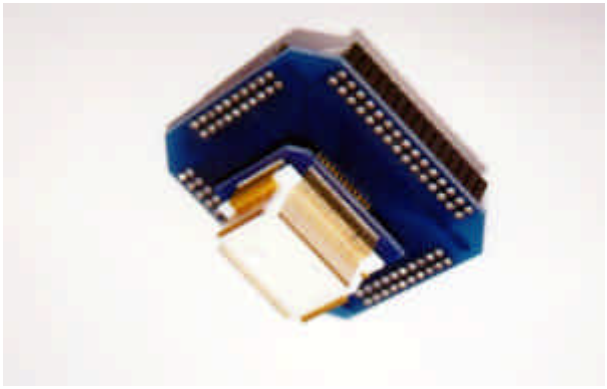
## ADP-100J-SMC



Converts the row of pins of DS-186 Emulation Header for 80C186EC-EIAJ to 100-pin QFP. The bottom male plug is a surface mounted clip. This adapter is equivalent to ET-EPC-100QF06-SMA.

H³42mm L=56mm W=56mm
Upper socket: Row of pins - 0.1″
Bottom plug: 100-pin EIAJ

## ADP-100J-SOL



Converts the row of pins of DS-186 Emulation Header for 80C186EC-EIAJ to 100-pin QFP. The bottom male plug is a surface mounted clip Soldered to pads. This adapter is equivalent to ET-EPP-100QF06-SM.

H³42mm L=56mm W=56mm
Upper socket: Row of pins - 0.1″
Bottom plug: 100-pin EIAJ

## ADP-132Q

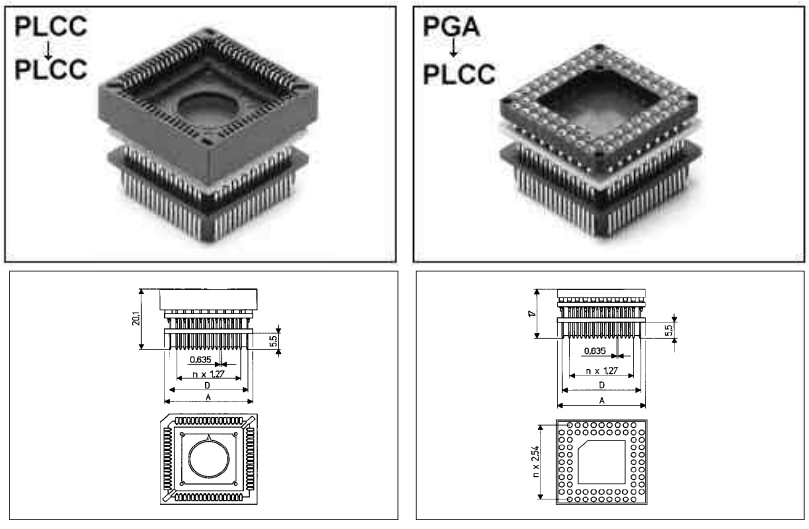
Converts the row of pins of DS-386 Emulation Header to 386E 132-pin QFP. The bottom male plug is a clip on equivalent to EPC132QF03LG2.

H³54mm L=63mm W=63mm
Upper socket: Row of pins - 0.1″
Bottom plug: 100-pin QFP

# Socket Converters (PLCC, PGA, DIP, SO, SOIC, SOY, TSOP)

## Converter Sockets PLCC to PLCC and PGA to PLCC

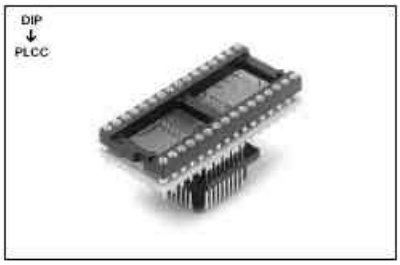
The Converter socket is used for testing purposes or when a component in PGA form is to be inserted into a PLCC socket.
The precision socket and the robustly constructed PLCC adapter with solid four sided pins ensure the highest functional security. All converter sockets are fully tested.
Special types upon request.
**Inner Spring Contacts (Clips):** Beryllium copper, gold-plated
**Contact Pins:** Turned brass, electro-strictioned, gold plated
**Insulated Body:** PLCC Socket, Glass-fiber reinforced polyethersulfon, self-extinguishing rated UL 94 V0.
**Insulator Body:** Glass fiber reinforced thermoplastic polyester, self-extinguishing rated UL 94 V0.
**PCB** Glass-fiber epoxy EP-GC 02, 35 µm copper tin-plated, self-extinguishing rated UL 94 V0.
**Insertion Diameter:** 0.4 mm. Min, PGA Socket 0.56 mm. max
**Mechanical Life:** > 50
**Rated Voltage:** 100 VRMS
**Test Voltage:** > 600 VRMS Contact / Contact
**Contact Resistance:** < 30 mΩ
**Insulation Resistance:** > 5 x $10^9$Ω
**Current Carrying Capacity:** 1 Amp. (per contact)
**Temperature:** Continual operation -55°C to +125°C.

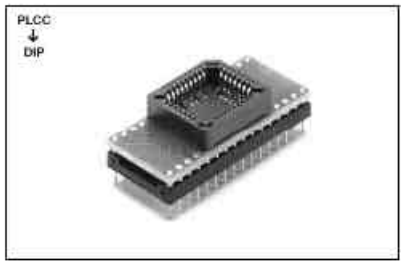


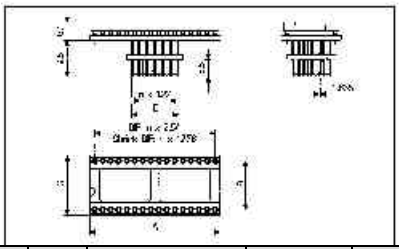

| A | D | Pins | Converter Socket | Part No. | A | D | Pins | Converter Socket | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| 17.7 | 12.3 | 28 | PLCC28-PLCC28 | 3305385 | 16.0 | 12.3 | 28 | PGA28-PLCC28 | 3305311 |
| 18.0 | 12.3 | 32 | PLCC32-PLCC32 | 3305386 | 18.0 | 12.3 | 32 | PGA32-PLCC32 | 3305312 |
| 22.2 | 14.9 | 32 | PLCC32-PLCC32 | 3305386 | 15.6 | 14.9 | 32 | PGA32-PLCC32 | 3305312 |
| 22.8 | 17.4 | 44 | PLCC44-PLCC44 | 3305387 | 20.5 | 17.4 | 44 | PGA44-PLCC44 | 3305313 |
| 25.4 | 19.9 | 52 | PLCC52-PLCC52 | 3305388 | 23.2 | 19.9 | 52 | PGA52-PLCC52 | 3305314 |
| 30.4 | 25.0 | 68 | PLCC68-PLCC68 | 3305389 | 28.4 | 25.0 | 68 | PGA68-PLCC68 | 3305315 |
| 35.5 | 30.1 | 84 | PLCC84-PLCC84 | 3305390 | 33.5 | 30.1 | 84 | PGA84-PLCC84 | 3305316 |

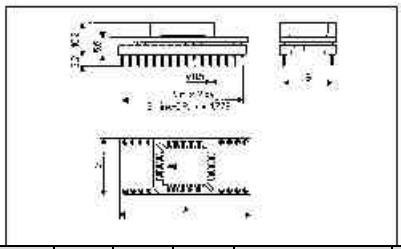
## Converter Sockets DIP /shrink DIP to PLCC and PLCC to DIP/shrink DIP

The Converter socket is used for testing purposes or when a component in DIP form is to be inserted into a PLCC socket or reversal.
The DIP sockets with turned precision pins and the robustly constructed PLCC adapter with solid four sided pins ensure the highest functional security.
All converter sockets are fully tested.
Certain PLCC components have more connection than the comparable ICs in the DIP housing. The pin-outs are shown in the table. Special types upon request.
**Inner Spring Contacts (Clips):** DIP Beryllium copper, gold plated PLCC Phosphor bronze, tin plated
**Contact Pins:** DIP Turned brass, tin plated PLCC Brass, electro-strictioned, gold plated
**Insulator Body PLCC Socket:** Glass fiber reinforced polyethersulfon, self-extinguishing rated UL 94 V0
**Insulator Body PLCC Adapter and DIP:** Glass fiber reinforced thermoplastic polyester, self-extinguishing rated UL 94 V0
**PCB:** Glass fiber epoxy EP-GC 02, 35 µm copper tin plated, self-extinguishing rated UL 94 V0
**Insertion Diameter:** DIP Socket Min. 0.4mm. Max. 0.56mm.
**Mechanical Life:** > 50
**Rated Voltage:** 100 VRMS; **Test Voltage:** > 600 VRMS Contact / Contact
**Contact Resistance:** < 30 mΩ
**Insulation Resistance:** > 5 x $10^9$Ω
**Current Carrying Capacity:** 1 Amp. (per contact)
**Temperature:** Continual operation -55°C to +125°C. Resit. to solder heat 260°C, 10 Sec.





| A | B | C | D | Converter Socket | Pin Out | Part No. |
|---|---|---|---|---|---|---|
| 25.4 | 7.62 | 15.8 | 9.8 | DIP320-PLCC20 | ---------- | 3306600 |
| 30.5 | 15.24 | 17.8 | 12.3 | DIP624-PLCC28 | 1,8,15,22 | 3305318 |
| 30.5 | 15.24 | 17.8 | 12.3 | DIP624-PLCC28 | 1,11,15,19 | 3305319 |
| 35.6 | 15.24 | 17.8 | 12.3 | DIP628-PLCC28 | | 3305317 |
| 35.6 | 15.24 | 17.8 | 14.9 | DIP628-PLCC28 | 1,9,17,25 | 3305333 |
| 35.3 | 15.24 | 17.8 | 14.9 | DIP628-PLCC28 | 1,12,17,26 | 3305334 |
| 40.7 | 15.24 | 17.8 | 14.9 | DIP632-PLCC32 | | 3305309 |
| 50.8 | 15.24 | 22.9 | 17.4 | DIP640-PLCC44 | 1,12,23,34 | 3305303 |
| 50.8 | 15.24 | 22.9 | 17.4 | DIP640-PLCC44 | 1,13,23,33 | 3305308 |
| 81.3 | 22.86 | 31.8 | 25.0 | DIP964-PLCC68 | 1,18,35,52 | 3305301 |
| 81.3 | 15.24 | 31.8 | 25.0 | ShDIP664-PLCC68 | 1,18,35,52 | 3305738 |
| 81.3 | 19.05 | 31.8 | 25.0 | ShDIP764-PLCC68 | 1,18,35,52 | 3305304 |

| A | B | C | Converter Socket | Pin Out | Part No. |
|---|---|---|---|---|---|
| 25.4 | 7.62 | 15.8 | PLCC20-DIP320 | ---------- | 3305338 |
| 30.5 | 15.24 | 17.8 | PLCC28-DIP624 | 1,8,15,22 | 3305330 |
| 30.5 | 15.24 | 17.8 | PLCC28-DIP624 | 1,11,15,19 | 3305331 |
| 35.6 | 15.24 | 17.8 | PLCC28-DIP628 | | 3305324 |
| 35.6 | 15.24 | 17.8 | PLCC32-DIP628 | 1,9,17,25 | 3305335 |
| 35.6 | 15.24 | 18.5 | PLCC32-DIP628 | 1,12,17,26 | 3305336 |
| 40.7 | 7.62 | 17.8 | PLCC32-DIP332 | | 3306602 |
| 40.7 | 10.16 | 17.8 | PLCC32-DIP432 | | 3306601 |
| 40.7 | 15.24 | 17.8 | PLCC32-DIP632 | | 3305326 |
| 50.8 | 15.24 | 22.9 | PLCC44-DIP640 | 1,12,23,34 | 3305329 |
| 50.8 | 15.24 | 22.9 | PLCC44-DIP640 | 1,13,23,33 | 3305321 |
| 55.9 | 10.16 | 22.9 | PLCC44-DIP444 | | 3305224 |
| 55.9 | 15.24 | 22.9 | PLCC44-DIP644 | | 3305225 |
| 81.3 | 22.86 | 31.8 | PLCC68-DIP964 | 1,18,35,52 | 3305328 |
| 81.3 | 19.05 | 31.8 | PLCC68-ShDIP764 | 1,18,35,52 | 3305310 |
| 54.0 | 15.24 | 28.0 | PLCC52-ShDIP656 | 6,7,35,50 | 3305340 |

## Converter Sockets PLCC to PGA

Converter Sockets PLCC to PGA to solder IC components in PLCC housing.
The converter socket is inserted into a PGA socket or soldered directly onto the PCB.
The electrical connections of the PLCC converters correspond to the wired PLCC/ LCC sockets.

**Pin Contacts:** Brass, electro-strictioned, tin-plated
**Insulator Body:** Glass-fiber reinforced thermoplastic polyester, self-extinguishing rated UL 94 V0.
**PCB:** Glass-fiber epoxy EP-CG 02, 35 µm copper tin-plated, self-extinguishing rated UL 94 V0.
**Temperature Continual operation:** -55°C to + 150°C. Resistance to soldering heat 215°C. for 2 minutes
**Mechanical Life:** > 50
**Rated Voltage:** 100 VRMS
**Test Voltage:** > 600 VRMS Contact/Contact
**Contact Resistance:** < 30 m Ω
**Insulation Resistance:** > 5 x $10^9$Ω
**Air and Creepage Distance:** > 0.3 mm.
**Current Carrying Capacity:** (per contact) 1 Amp.

| A | F | G | Pins | PU | Converter Socket | Part No. |
|---|---|---|---|---|---|---|
| 15.3 | 9.4 | 14.2 | 28 | 34 | PLCC28-PGA28 | 3305410 |
| 15.5 | 4.6 | 11.8 | 28 | 34 | PLCC28-PGA28 | 3305417 |
| 20.5 | 11.0 | 18.5 | 28 | 34 | PLCC28-PGA28 | 3305417 |
| 17.8 | 9.4 | 14.2 | 32 | 34 | PLCC32-PGA32 | 3305411 |
| 15.3 | 12.0 | 15.7 | 32 | 34 | PLCC32-PGA32 | 3305411 |
| 20.4 | 14.5 | 19.2 | 44 | 26 | PLCC44-PGA44 | 3305412 |
| 22.9 | 17.1 | 21.8 | 52 | 23 | PLCC52-PGA52 | 3305413 |
| 28.0 | 22.1 | 26.9 | 68 | 18 | PLCC68-PGA68 | 3305414 |
| 33.1 | 27.2 | 31.9 | 84 | 16 | PLCC84-PGA84 | 3305415 |