

## INTRODUCTION:

Adam Tech CE Series Card Edge Connectors are precision engineered PCB mount connectors developed to mate with the plated fingers of a printed circuit daughter board. Their bifurcated, cantilever contacts are set in a dual readout configuration and they offer a reliable connection for a wide range of PCB thicknesses. Adam Tech's sturdy solder tails with tapers allow easy insertion and rugged durability.

## FEATURES:

.100" x .200" centerlines  
Selectively gold plated contacts  
Wide selection of positions  
Compatible with a wide range of PCB thicknesses

## MATING PC BOARDS:

All printed circuit boards with a thickness of .055" to .075"

## SPECIFICATIONS:

### Material:

Standard insulator: PBT, 30% glass reinforced, rated UL94V-0  
Optional Hi-Temp insulator: Nylon 6T, rated UL94V-0  
Insulator Color: Black  
Contacts: Phosphor Bronze

### Contact Plating:

Gold Flash (30  $\mu$ m Optional) over Nickel underplate on contact area, tin over copper underplate on tails.

### Electrical:

Operating voltage: 250V AC max.  
Current rating: 3 Amps max.  
Contact resistance: 30 m $\Omega$  max. initial  
Insulation resistance: 3000 M $\Omega$  min.  
Dielectric withstanding voltage: 500V AC for 1 minute

### Mechanical:

Insertion force: 10 oz max.  
Withdrawal force: 3 oz min

### Temperature Rating:

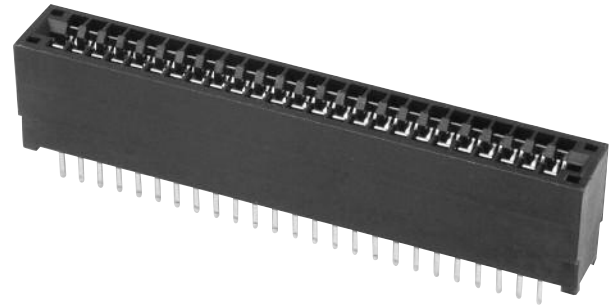
Operating temperature: -40°C to +105°C  
Soldering process temperature:  
Standard insulator: 235°C  
Hi-Temp insulator: 260°C

## PACKAGING:

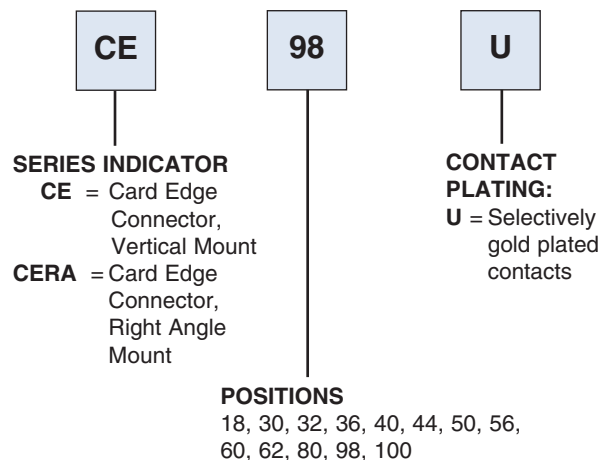
Anti-ESD plastic trays

## SAFETY AGENCY APPROVALS:

UL Recognized File No. E224053  
CSA Certified File No. LR1578596



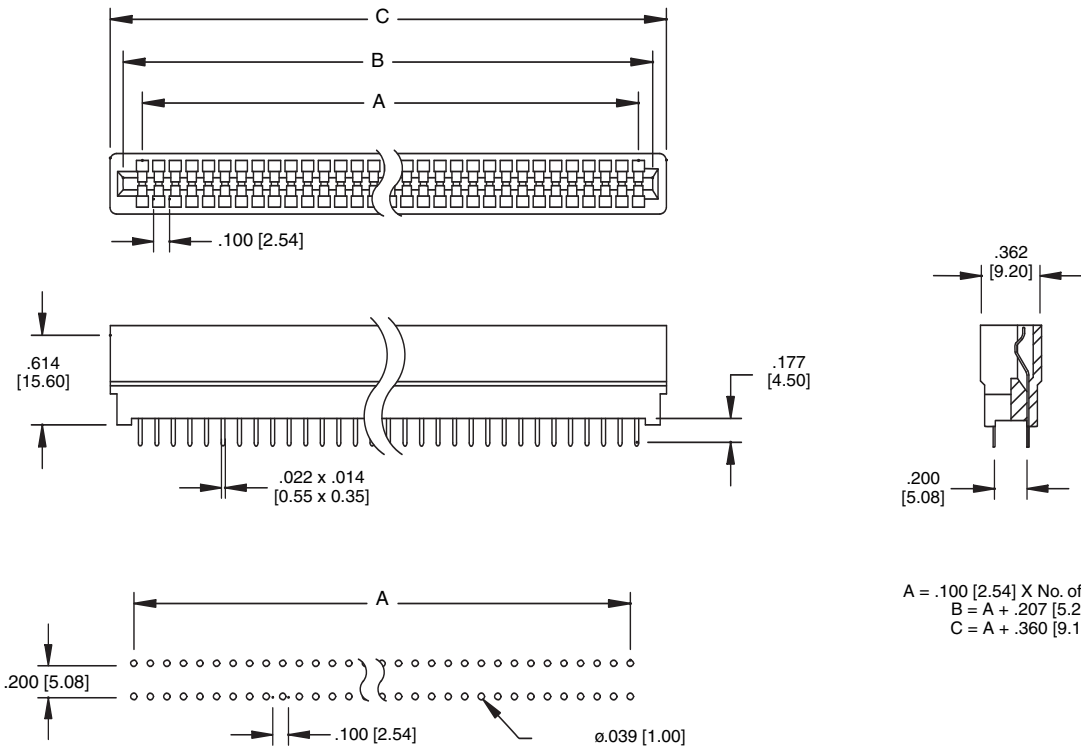
## ORDERING INFORMATION



## OPTIONS:

Add designator(s) to end of part number  
30 = 30  $\mu$ m gold plating in contact area  
HT = Hi-Temp insulator for Hi-Temp soldering processes up to 260°C

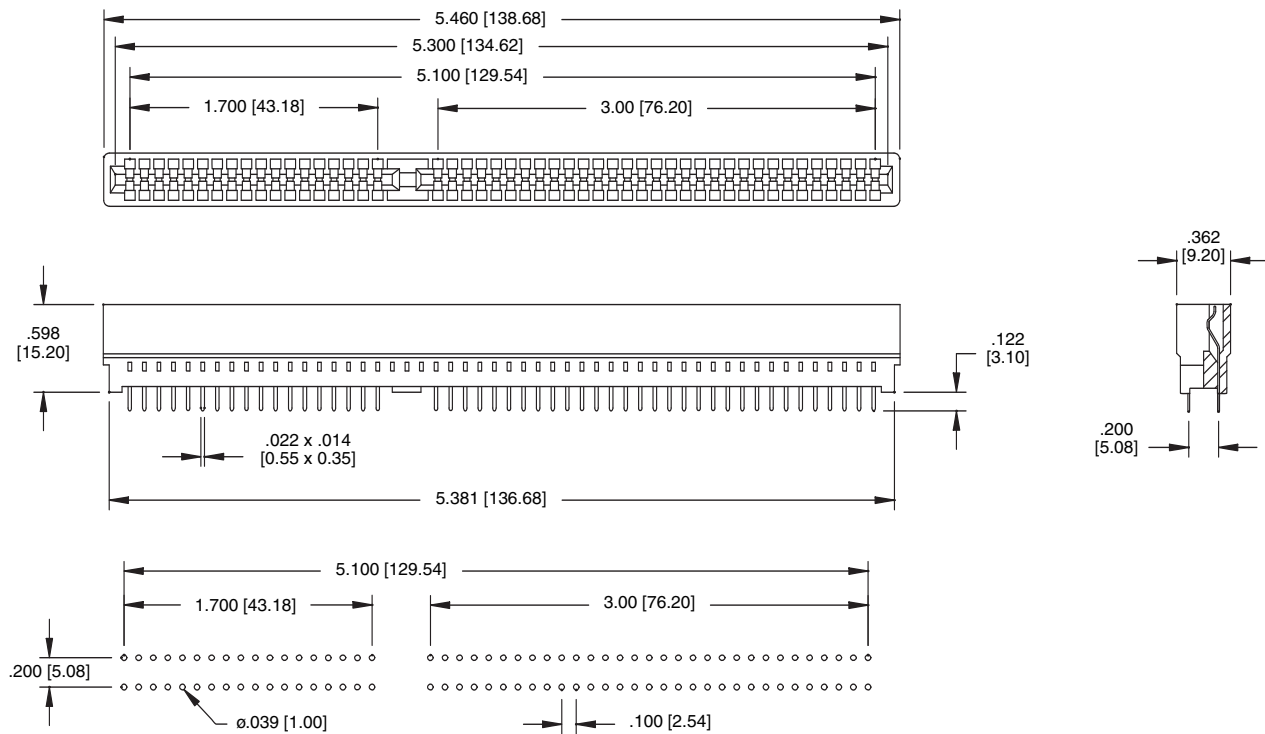
18P-100P



A = .100 [2.54] X No. of spaces  
 B = A + .207 [5.28]  
 C = A + .360 [9.14]

Recommended PCB Layout

98P



Recommended PCB Layout

### INTRODUCTION:

Adam Tech HMCA Series Card Edge Connectors include Standard and Express versions designed for PCB's in Peripheral Component Interconnect (PCI) applications. Each is manufactured in a four row, high density package which is completely compatible to industry standards and has specially engineered contacts which provide a very short electrical path between boards. Adam Tech card edge connectors are designed for high performance with solid board pegs and precision located, selectively gold plated contacts which are ideal in high speed, increased bandwidth applications

### FEATURES:

- PCI and PCI Express Versions
- High density compact designs
- Industry standard PCI compatible
- Special contact design reduces electrical path
- Selectively plated contacts
- Open bottom for after solder cleaning

### MATING PC BOARDS:

All .050" centerline printed circuit board pads with a thickness of .062" to .072"

### SPECIFICATIONS:

#### Material:

Standard insulator: PPS, 30% glass reinforced, rated UL94V-0  
Optional Hi-Temp insulator: Nylon 6T, rated UL94V-0  
Insulator Color: Dark Brown (White 120 pos.)

Contacts: Phosphor Bronze

#### Contact Plating:

Gold Flash (30 µin Optional) over Nickel underplate on contact area, tin over copper underplate on tails.

#### Electrical:

Operating voltage: 125V AC max.  
Current rating: 1 Amp max.  
Contact resistance: 30 mΩ max. initial  
Insulation resistance: 1000 MΩ min.  
Dielectric withstanding voltage: 500V AC for 1 minute

#### Mechanical:

Insertion force: 7 oz max.  
Withdrawal force: 0.9 oz min

#### Temperature Rating:

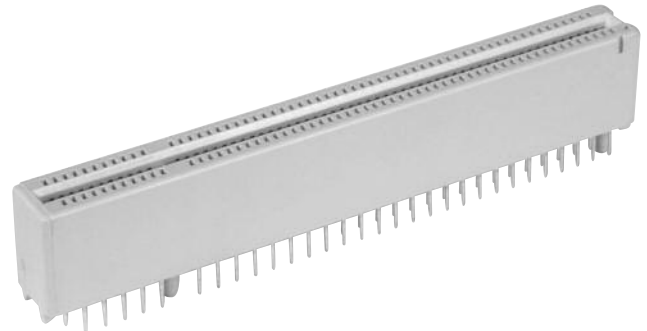
Operating temperature: -55°C to +105°C  
Soldering process temperature:  
Standard insulator: 235°C  
Hi-Temp insulator: 260°C

### PACKAGING:

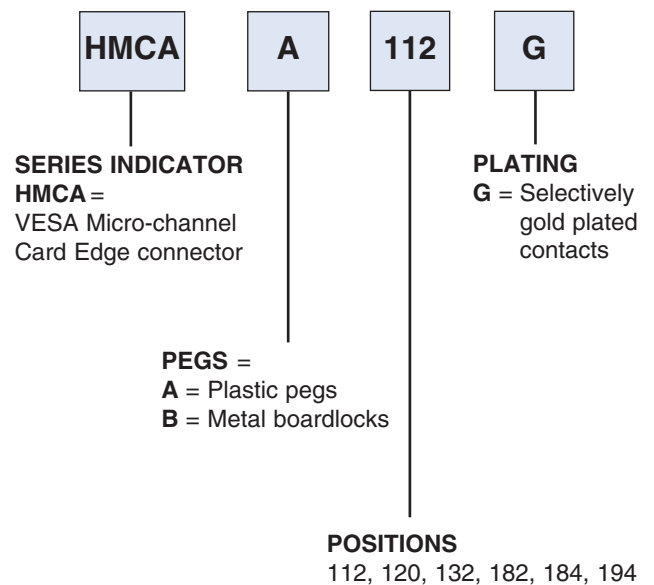
Anti-ESD plastic trays

### SAFETY AGENCY APPROVALS:

UL Recognized File No. E224053  
CSA Certified File No. LR1578596

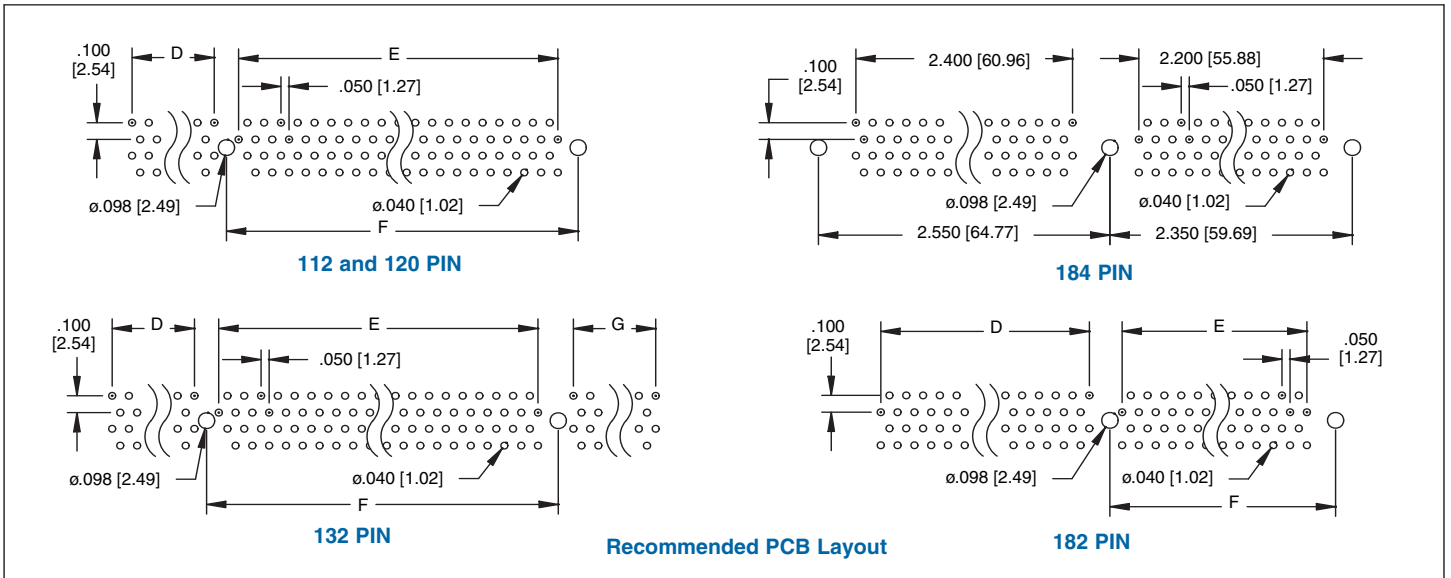
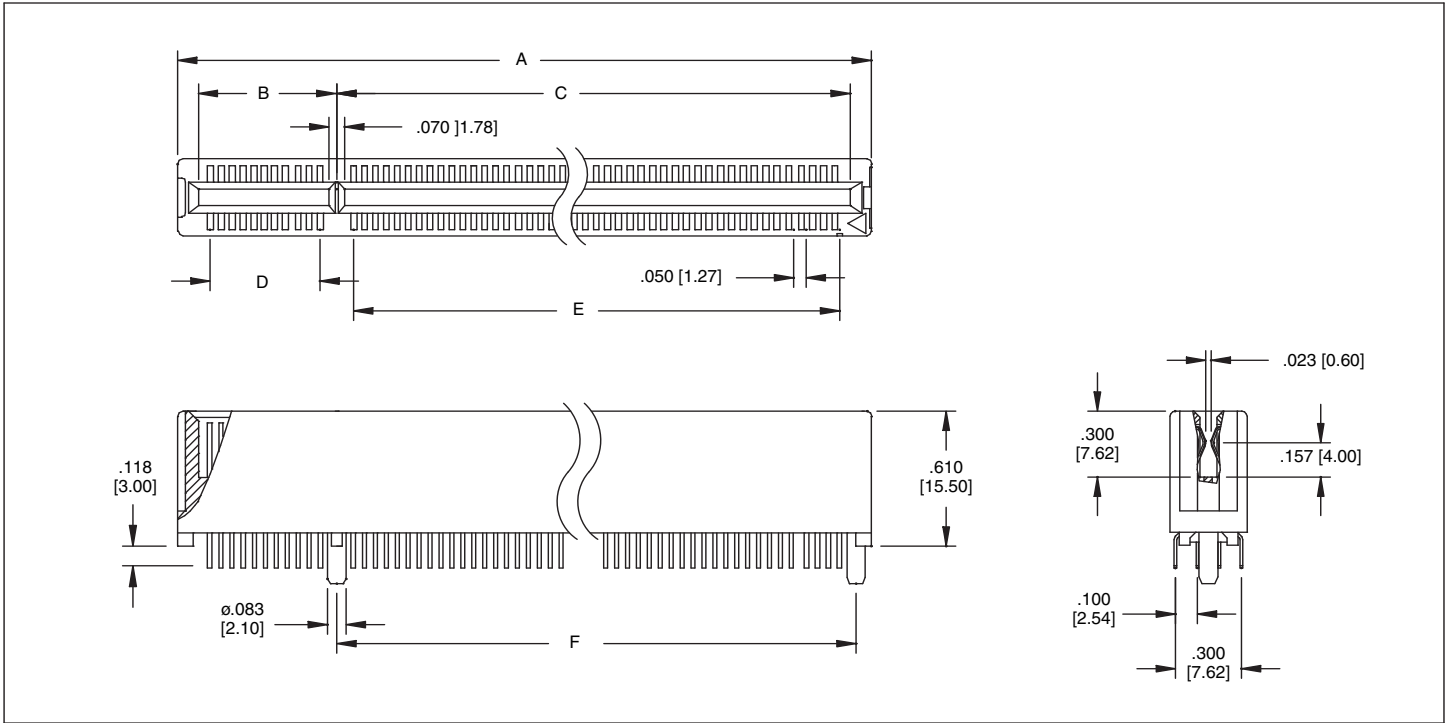


### ORDERING INFORMATION



### OPTIONS

Add designator(s) to end of part number  
30 = 30 µin gold plating in contact area  
HT = Hi-Temp insulator for Hi-Temp soldering processes up to 260°C



Unit: Inch [mm]

| Part No. & Positions | Dimensions     |               |               |               |                |               |               |
|----------------------|----------------|---------------|---------------|---------------|----------------|---------------|---------------|
|                      | A              | B             | C             | D             | E              | F             | G             |
| HMCA-112-G           | 3.140 [79.76]  | 0.625 [15.88] | 2.325 [59.06] | 0.500 [12.70] | 2.200 [ 55.88] | 2.232 [56.69] | —             |
| HMCA-120-G           | 3.340 [84.84]  | 0.625 [15.88] | 2.525 [64.14] | 0.500 [12.70] | 2.400 [ 60.96] | 2.550 [64.77] | —             |
| HMCA-132-G           | 3.740 [95.00]  | 0.625 [15.88] | 2.925 [74.30] | 1.834 [46.60] | 2.200 [55.88]  | 2.350 [59.69] | 0.450 [11.43] |
| HMCA-182-G           | 4.890 [124.21] | 2.175 [55.25] | 2.525 [64.14] | 2.050 [52.07] | 2.050 [52.07]  | 2.550 [64.77] | —             |
| HMCA-194-G           | 5.290 [134.37] | 2.175 [55.25] | 2.925 [74.30] | 2.050 [52.07] | 2.200 [55.88]  | 2.350 [55.88] | 0.450 [11.43] |

#### INTRODUCTION:

Adam Tech HDCE Series EISA (Extended Industry Standard Architecture) Card Edge Connectors are .050" pitch 188 position dual level contact connectors specifically designed to mate with AT, XT and PC expansion cards. Our precision formed High Reliability contact system is contained within a Hi-Temp PPS body which features a close tolerance polarizing slot and card edge lead-in area for superior mating.

#### FEATURES:

- High density .050" Centerlines
- Compatible with PC, XT & AT
- Durable Long Life cycle contacts
- High Pressure Contacts for Low Level Circuits

#### MATING PC BOARDS:

All .050" centerline printed circuit board pads with a thickness of .062" to .072"

#### SPECIFICATIONS:

##### Material:

Standard insulator: PPS, 30% glass reinforced, rated UL94V-0  
Optional Hi-Temp insulator: Nylon 6T, rated UL94V-0  
Insulator Color: Dark Brown (Black optional)  
Contacts: Phosphor Bronze

##### Contact Plating:

Gold Flash (30  $\mu$ in Optional) over Nickel underplate on contact area, tin over copper underplate on tails.

##### Electrical:

Operating voltage: 125V AC max.  
Current rating: 3 Amps max.  
Contact resistance: 20 m $\Omega$  max. initial  
Insulation resistance: 1000 M $\Omega$  min.  
Dielectric withstanding voltage: 500V AC for 1 minute

##### Mechanical:

Insertion force: 7 oz max.  
Withdrawal force: 0.9 oz min

##### Temperature Rating:

Operating temperature: -55°C to +105°C  
Soldering process temperature:  
Standard insulator: 235°C  
Hi-Temp insulator: 260°C

#### PACKAGING:

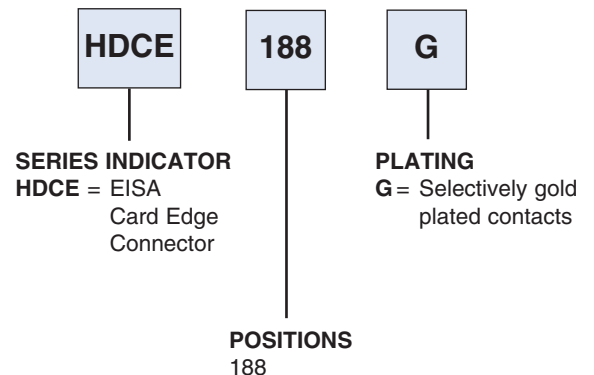
Anti-ESD plastic trays

#### APPROVALS AND CERTIFICATIONS:

UL Recognized File No. E224053  
CSA Certified File No. LR1578596



#### ORDERING INFORMATION



#### OPTIONS:

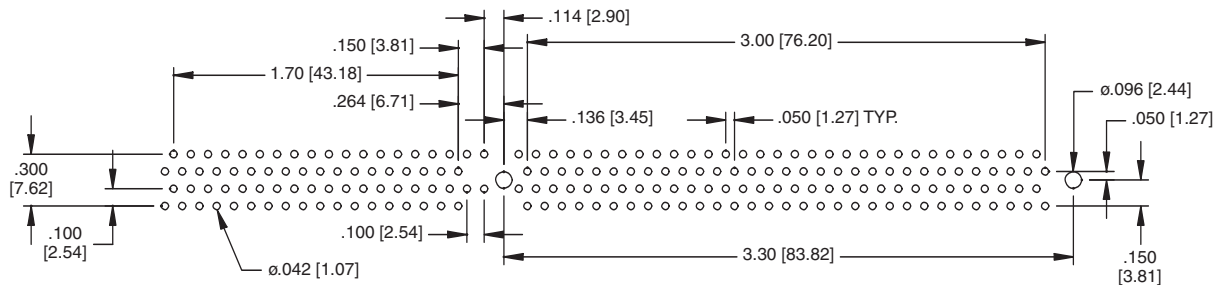
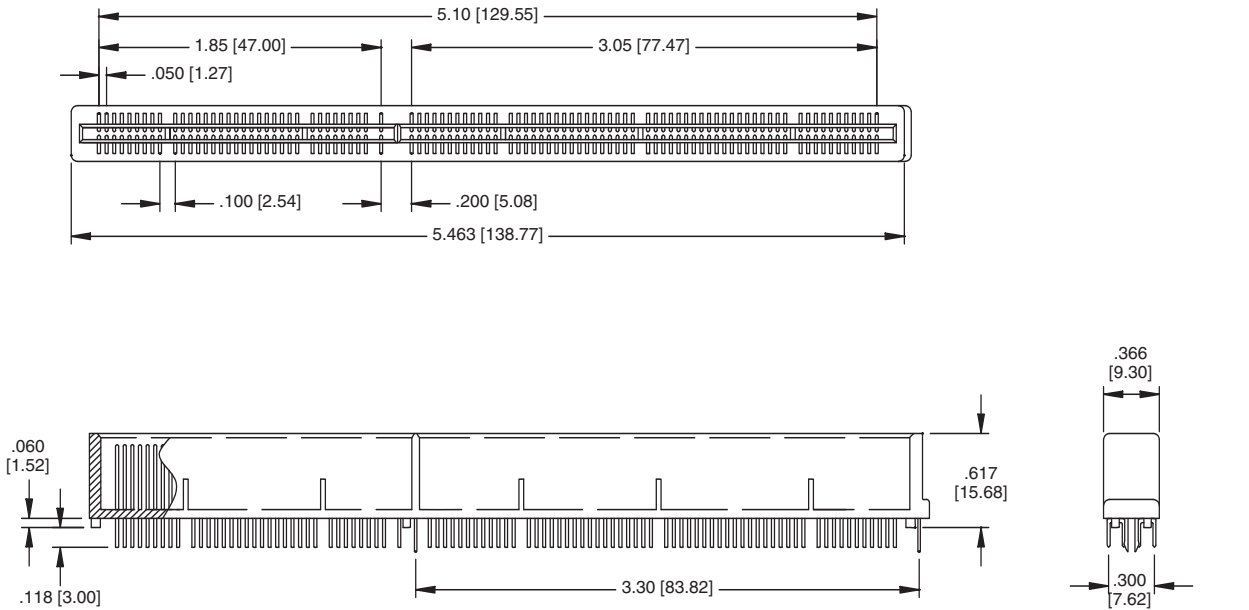
Add designator(s) to end of part number

**30** = 30  $\mu$ in gold plating in contact area

**BK** = Black color insulation

**HT** = Hi-Temp insulator for Hi-Temp soldering  
processes up to 260°C

HDCE-188-G



Recommended PCB Layout

#### INTRODUCTION:

Adam Tech's wide range of PCI & Mini PCI Express connectors provide a low cost, highly scalable, general-purpose serial I/O interconnect that provides a unifying standard for a number of I/O solutions within one platform. They are typically used in high-speed serial link technology applications similar to that found in Gigabit Ethernet, Serial ATA (SATA), and Serial-Attached SCSI (SAS). The 36P version supports a single PCI express lane and can be used to replace standard PCI connectors. Our higher bandwidth 4 & 8 lane versions are ideal to use in many server applications.

#### FEATURES:

- Durable Long Life cycle contacts
- High Pressure Contacts for Low Level Circuits
- Hot plug and hot swap enabled
- Rated to run at up to 2.5Gbps
- Supports 2.5Gbps data transfer and scalable for future band width increases.
- Available in x1, x4, x8, and x16 configurations
- Coexists with standard PCI

#### MATING PC BOARDS:

All printed circuit boards with a thickness of .062" to .072"

#### SPECIFICATIONS:

##### Material:

- Standard insulator: PPS, 30% glass reinforced, rated UL94V-0
- Optional Hi-Temp insulator: Nylon 6T, rated UL94V-0
- Insulator Color: Dark Brown
- Contacts: Phosphor Bronze

##### Contact Plating:

Gold Flash (30 µin Optional) over Nickel underplate on contact area, tin over copper underplate on tails.

##### Electrical:

- Operating voltage: 125V AC max.
- Current rating: 3 Amps max.
- Contact resistance: 20 mΩ max. initial
- Insulation resistance: 1000 MΩ min.
- Dielectric withstanding voltage: 500V AC for 1 minute

##### Mechanical:

- Insertion force: 7 oz max.
- Withdrawal force: 0.9 oz min

##### Temperature Rating:

- Operating temperature: -55°C to +105°C
- Soldering process temperature:
  - Standard insulator: 235°C
  - Hi-Temp insulator: 260°C

##### PACKAGING:

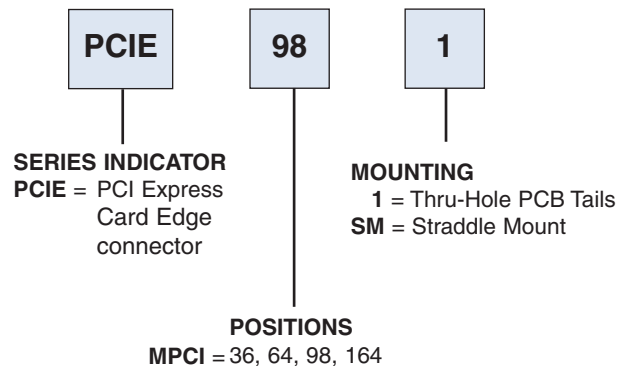
Anti-ESD plastic trays

##### APPROVALS AND CERTIFICATIONS:

- UL Recognized File No. E224053
- CSA Certified File No. LR1578596



#### ORDERING INFORMATION PCI EXPRESS



#### ORDERING INFORMATION MINI PCI EXPRESS

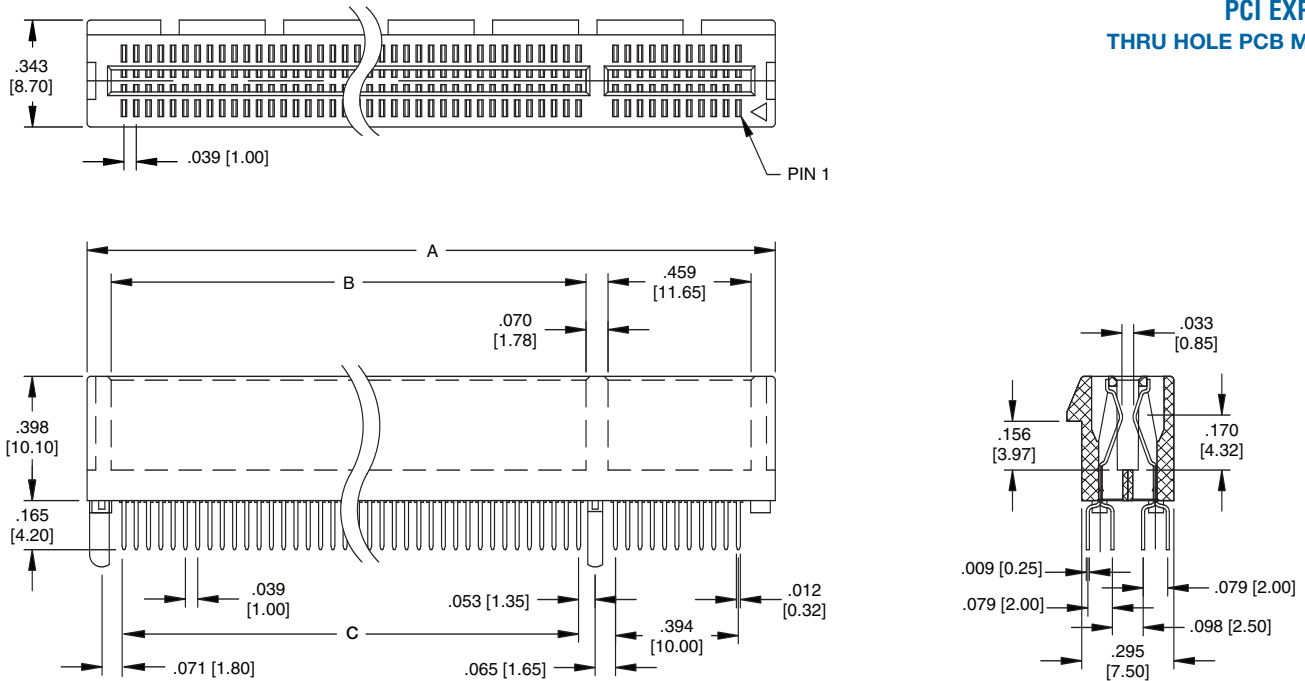
See pg. 177 for Available Types

#### OPTIONS:

- Add designator(s) to end of part number
- 30** = 30 µin gold plating in contact area
- HT** = Hi-Temp insulator for Hi-Temp soldering processes up to 260°C
- LL** = Latch option left side
- LR** = Latch option right side

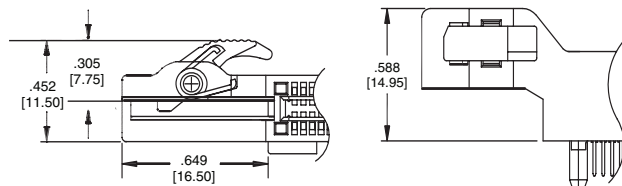


#### PCI EXPRESS THRU HOLE PCB MOUNT

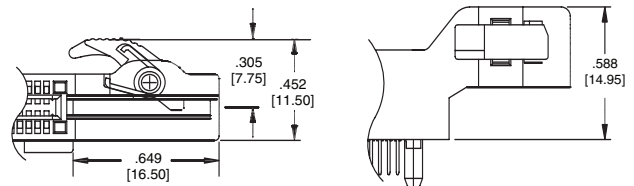


| PART NO. & POSITIONS | DIMENSIONS    |               |               |               |
|----------------------|---------------|---------------|---------------|---------------|
|                      | A             | B             | C             | D             |
| PCIE-36-1            | .984 [25.00]  | .301 [7.65]   | .236 [6.00]   | .321 [8.15]   |
| PCIE-64-1            | 1.535 [39.00] | .852 [21.65]  | .787 [20.00]  | .872 [22.15]  |
| PCIE-98-1            | 2.205 [56.00] | 1.522 [38.65] | 1.457 [37.00] | 1.541 [39.15] |
| PCIE-164-1           | 3.504 [89.00] | 2.821 [71.65] | 2.756 [70.00] | 2.840 [72.15] |

#### PCI LATCHING OPTIONS

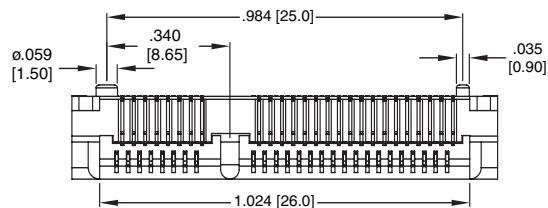


PCI Express Latching Option - Left Side

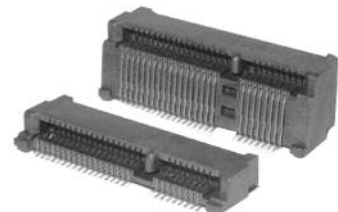
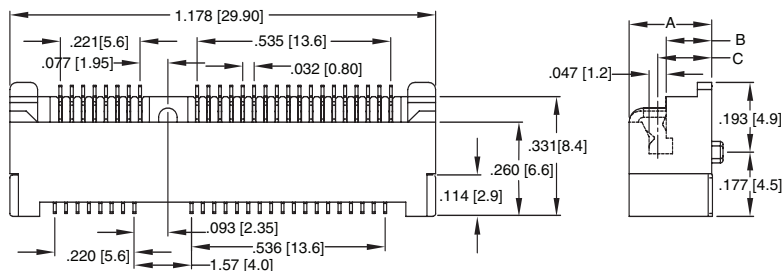


PCI Express Latching Option - Right Side

#### MINI PCI EXPRESS

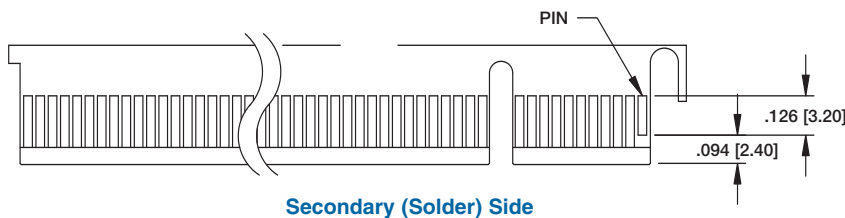
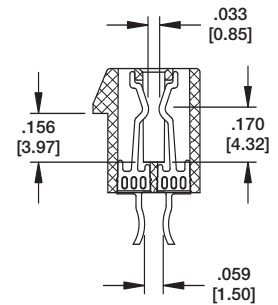
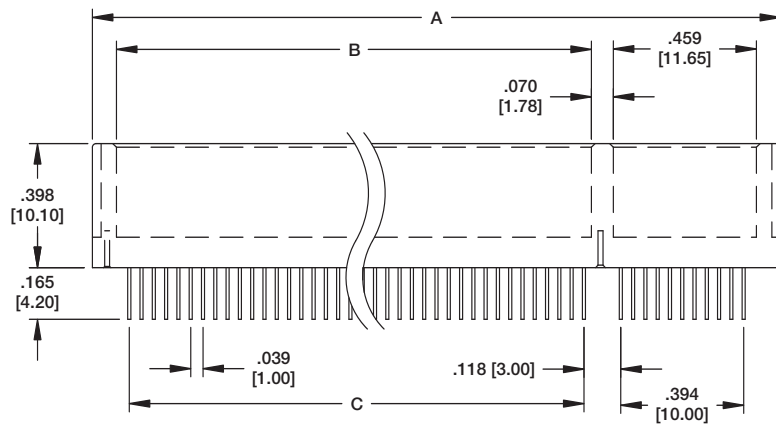
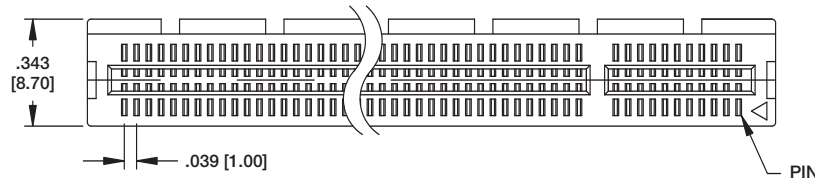


| PN     | DA | DB  | DC   |      |
|--------|----|-----|------|------|
| 6210T  | R  | 4.0 | 1.4  | 2.00 |
| 6212T  | R  | 5.2 | 2.6  | 3.20 |
| 6218T  | R  | 5.6 | 3.2  | 3.80 |
| 6218AT | R  | 5.8 | 3.2  | 3.80 |
| 62195- | TR | 6.7 | 4.35 | 4.95 |
| 62125- | TR | 8.0 | 5.65 | 6.25 |
| 6210T  | R  | 9.0 | 6.4  | 7.0  |
| 6210T  | R  | 9.9 | 7.4  | 8.0  |

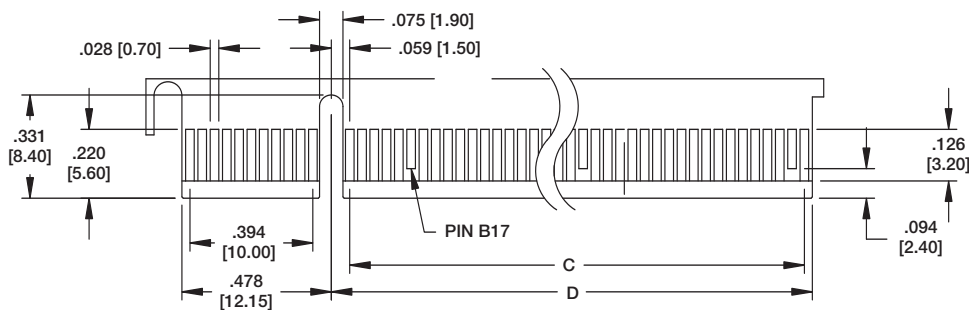




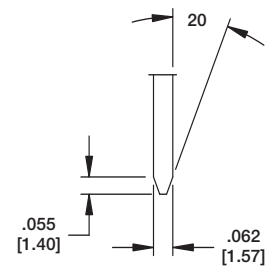
#### PCI EXPRESS STRADDLE MOUNT



Secondary (Solder) Side



Primary (Component) Side



| PART NO. & POSITIONS | DIMENSIONS    |               |               |               |
|----------------------|---------------|---------------|---------------|---------------|
|                      | A             | B             | C             | D             |
| PCIE-36-SM           | .984 [25.00]  | .301 [7.65]   | .236 [6.00]   | .321 [8.15]   |
| PCIE-64-SM           | 1.535 [39.00] | .852 [21.65]  | .787 [20.00]  | .872 [22.15]  |
| PCIE-98-SM           | 2.205 [56.00] | 1.522 [38.65] | 1.457 [37.00] | 1.541 [39.15] |
| PCIE-164-SM          | 3.504 [89.00] | 2.821 [71.65] | 2.756 [70.00] | 2.840 [72.15] |