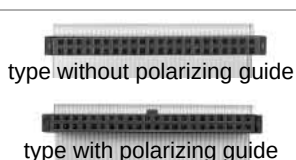
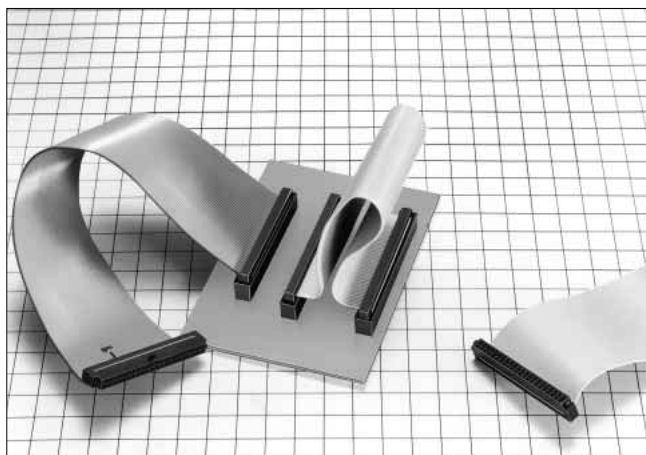


# 2mm Pitch Miniature Connector for HDD

## A3E Series



### ■Features

#### 1. Variation in Number of Contacts

This connector can be chosen according to applications, using together with other series products as follows:

- (1) Cable crimping type (A3B series)
- (2) Cable ID type (A3E series)
- (3) FFC connection type (MA18 series, A3C series)

(However, the A3E series pin header corresponds to the A3E series socket only.)

On the other hand, 44 contacts are available for AT bus connection, and 55 contacts for SCSI connection.

#### 2. Batch Insulation Displacement

1 mm pitch ribbon cable can be insulated and displaced.

#### 3. Mechanism to Prevent Mis-insertion

The connector on the socket side contains a mechanism to prevent mis-insertion in the connector on the header side.

### ■Product Specifications

|        |                         |                                                   |                                                 |
|--------|-------------------------|---------------------------------------------------|-------------------------------------------------|
| Rating | Current rating: 0.5A    | Operating Temperature Range:-55 to +85°C (Note 1) | Storage Temperature Range:-10 to +60°C (Note 2) |
|        | Voltage rating: 125V AC | Operating Moisture Range:40 to 80%                | Storage Humidity Range:40 to 70% (Note 2)       |

| Item                             | Specification                                       | Condition                                                                                                   |
|----------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 1. Insulation Resistance         | 1000M ohms min.                                     | 250V DC                                                                                                     |
| 2. Withstanding voltage          | No flashover or insulation breakdown.               | 300V AC/1 minute                                                                                            |
| 3. Contact Resistance            | 40m ohms max.                                       | 0.1A                                                                                                        |
| 4. Vibration                     | No electrical discontinuity of 1 $\mu$ s or more    | Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, 2 hours in each of the 3 directions.                   |
| 5. Humidity (Steady state)       | Insulation resistance: 1000M ohms min.              | 96 hours at temperature of 40°C and humidity of 90% to 95%                                                  |
| 6. Temperature Cycle             | No damage, cracks, or parts looseness.              | (-55°C: 30 minutes →15 to 35°C: 5 minutes max. →<br>+85°C: 30 minutes →15 to 35°C: 5 minutes max.) 5 cycles |
| 7. Durability (Mating/un-mating) | Contact resistance: 50m ohms max.                   | 100 cycles                                                                                                  |
| 8. Resistance to Soldering heat  | No deformation of components affecting performance. | Solder bath: 260°C for 10 seconds                                                                           |
|                                  |                                                     | Manual soldering: 350°C for 3 seconds                                                                       |

Note 1: Includes temperature rise caused by current flow.

Note 2: The term "storage" refers to products stored for long period of time prior to mounting and use. Operating Temperature Range and Humidity range covers non conducting condition of installed connectors in storage, shipment or during transportation.

Note 3: Information contained in this catalog represents general requirements for this Series. Contact us for the drawings and specifications for a specific part number shown.

### ■Material

| Part      |            | Material         | Finish                                        | Remarks |
|-----------|------------|------------------|-----------------------------------------------|---------|
| Insulator | Pin header | Polyamid         | Black                                         | UL94V-0 |
|           | Socket     | PBT              |                                               |         |
| Contact   | Pin header | Brass            | Selective gold plated over nickel underplated | —       |
|           | Socket     | Beryllium copper |                                               |         |

■Ordering Information

●Pin Header

A3E - \* P A - 2 DSA  
① ② ③ ④ ⑤ ⑥

|   |                     |                         |
|---|---------------------|-------------------------|
| ① | Series Name         | : A3E                   |
| ② | Number of contacts: | 44, 50                  |
| ③ | P:                  | Pin header              |
| ④ | A:                  | Selective gold plated   |
| ⑤ | Contact pitch :     | 2mm                     |
| ⑥ | Contact type:       | DSA : Straight dip type |

●Socket

A3E - \* D - 2 R  
① ② ③ ④ ⑤

|   |                     |                                                                  |
|---|---------------------|------------------------------------------------------------------|
| ① | Series Name         | : A3E : With polarizing guide<br>A3EA : Without polarizing guide |
| ② | Number of contacts: | 44, 50                                                           |
| ③ | D:                  | Receptacle                                                       |
| ④ | Contact pitch:      | 2mm                                                              |
| ⑤ | Connection type:    | R : ID type                                                      |

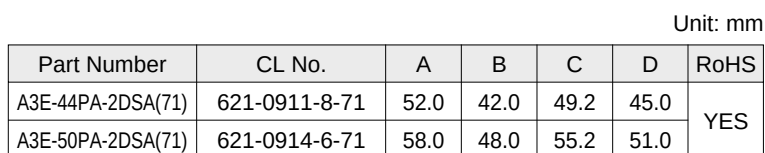


Diagram illustrating the contact layout of the test specimen. The specimen is a long rectangular bar with a central section labeled "Without contact (No.20)". The specimen is divided into four contact regions: "Contact No.2" (top left), "Contact No.1" (bottom left), "Contact No.44" (top right), and "Contact No.43" (bottom right). The central section is marked with a vertical line and a small gap.

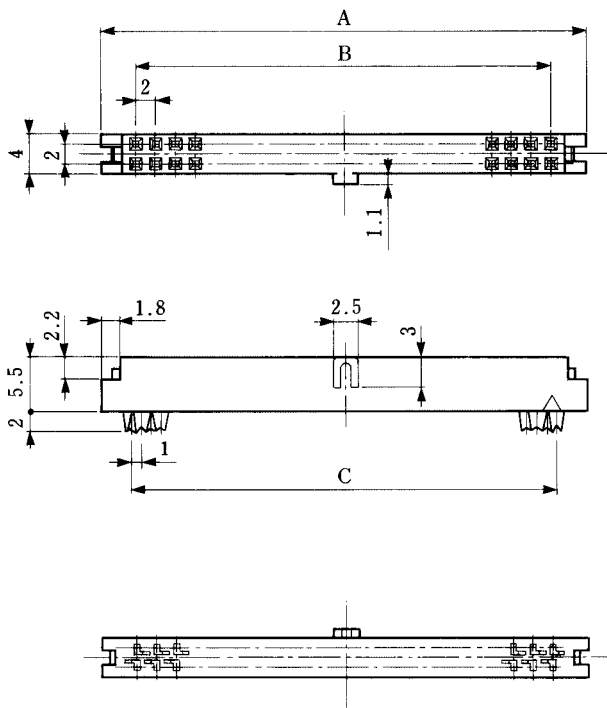


■Socket

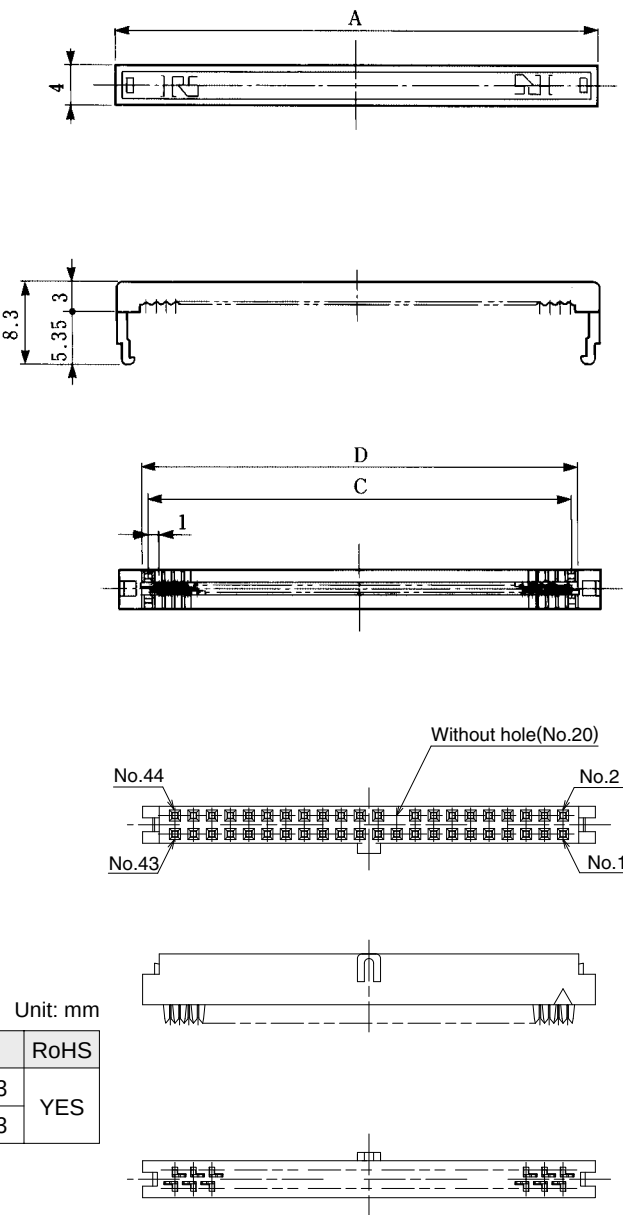
●Type with polarizing guide to prevent mis-insertion (A3E)



Body



Protector

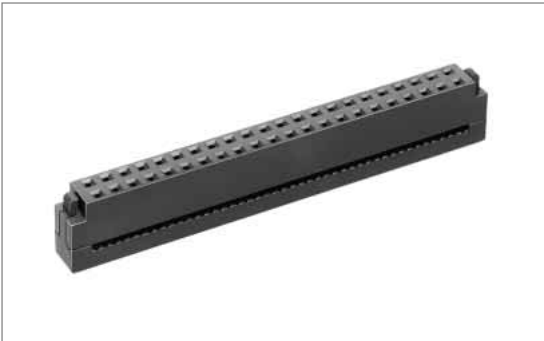


Unit: mm

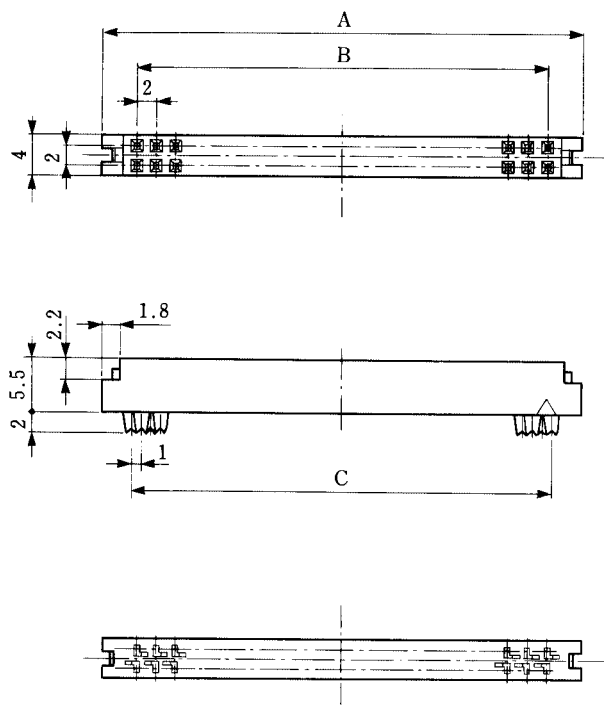
| Part Number | CL No.     | A    | B    | C    | D    | RoHS |
|-------------|------------|------|------|------|------|------|
| A3E-44D-2R  | 621-0811-3 | 49.0 | 42.0 | 43.0 | 44.3 | YES  |
| A3E-50D-2R  | 621-0814-1 | 55.0 | 48.0 | 49.0 | 50.3 |      |

Note : For 44 pos., without contact No. 20 hole soket is available.

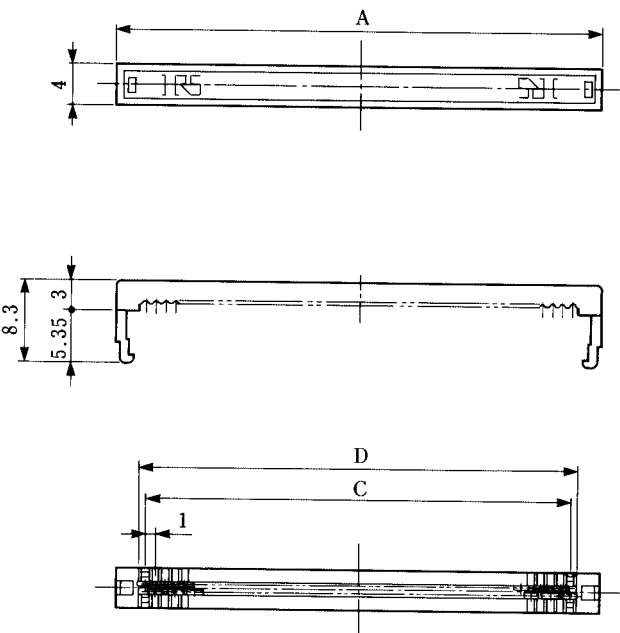
●Type without polarizing guide to prevent false-insertion (A3EA)



Body



Protector



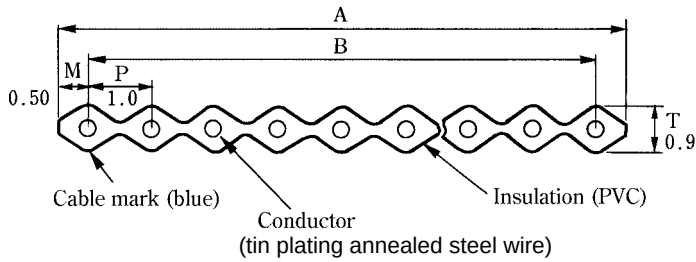
Combination View



Unit: mm

| Part Number | CL No.     | A    | B    | C    | D    | RoHS |
|-------------|------------|------|------|------|------|------|
| A3EA-44D-2R | 621-0861-1 | 49.0 | 42.0 | 43.0 | 44.3 | YES  |
| A3EA-50D-2R | 621-0864-0 | 55.0 | 48.0 | 49.0 | 50.3 |      |

■Recommended Cable for A3E Socket



Ribbon Cable

| Number of Contacts | Core wire Construction (pc./mm) | A  | B  |
|--------------------|---------------------------------|----|----|
| 44                 | 7/0.127                         | 44 | 43 |
| 50                 | 7/0.127                         | 50 | 49 |

◆Table of A3E Series Connection Tools

●Connection Press

Part Number: HI-FLEX Connection Press HHP502  
CL550-0082-2

●Pressing Block

Part Number: Pressing Block A-01  
CL550-0133-1

●Applicator

Universal Guide Plate  
Part Number: A3E-GPA  
CL550-0216-7

MA18 Series

The MA18 series is a 2mm pitch FFC socket connector developed for miniature HDD and main port connection. 44 contacts are provided for AT bus connection.

■Ordering Information

MA18A - 44 D A - 2 DSA

①                      ②      ③      ④                      ⑤                      ⑥

|                                                       |                                                                                                          |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| ① Series Name : MA18A                                 | ⑥ Contact type (Straight type)<br>DSA : Dip length 3mm<br>DSB : Dip length 2.5mm<br>DSC : Dip length 2mm |
| ② Number of contacts : 44                             |                                                                                                          |
| ③ Contact alignment : D : Double row                  |                                                                                                          |
| ④ Contact plating type      A : Selective gold plated |                                                                                                          |
| ⑤ Contact pitch : 2mm                                 |                                                                                                          |

■Variation in Number of Contacts

| Part Number         | CL No.        | Remarks                 | RoHS |
|---------------------|---------------|-------------------------|------|
| MA18A-44DA-2DSA(71) | 588-0247-3-71 | —                       | YES  |
| MA18A-44DA-2DSB(71) | 588-0255-1-71 | —                       |      |
| MA18A-44DA-2DSC(71) | 588-0253-6-71 | —                       |      |
| MA18M-44DA-2DSB(71) | 588-0291-5-71 | High profile mount type |      |

## Variation in Connection between HDD and Main Board

### ■Pin Heade

(1) Conventional product (used as conventional HDD interface pin header)

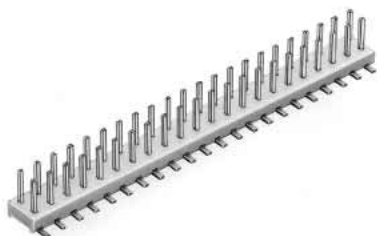
- Straight through hole type (see catalog page C15)



44 contacts : A3C-44P-2DSA (see photo)

50 contacts : A3C-50P-2DSA

- Straight SMT type (see catalog page C22)



44 contacts : A3-44PA-2SV(71) (see photo)

50 contacts : A3-50PA-2SV(71)

(With boss type available)

- Right angle through hole type (see catalog page C13)

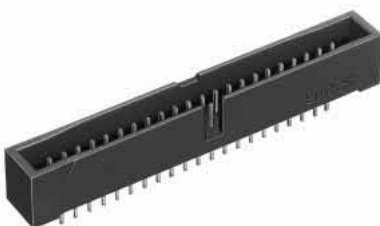


44 contacts : A3B-44PA-2DS(71) (see photo)

50 contacts : A3B-50PA-2DS(71)

(2) Box type product (Socket side prevents mis-insertion)

- Straight through hole type(see catalog page C28)



44 contacts : A3E-44PA-2DSA(71) (see photo)

50 contacts : A3E-50PA-2DSA(71)

Note: Correspond to A3E series socket only.



## ■ Socket

### (1) Products suitable to various cables

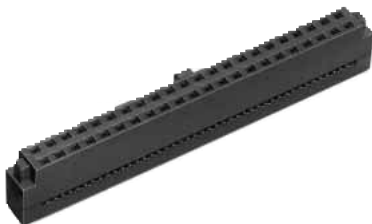
- Discrete wire Crimping Type (see catalog page C19)



44 contacts: A3B-44D-2C

Crimping contacts and crimping tools are detailed on page C20.

- Ribbon Cable (1mm pitch) Batch ID Type (see catalog page C29)



44 contacts: A3E-44D-2R (see photo)

50 contacts: A3E-50D-2R

Insulation displacement is detailed on page C31.

- FPC Connection Type



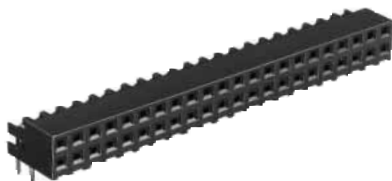
44 contacts: MA18A-44DA-2DSA(71) (photo)

( For a typical example, products  
are provided corresponding to  
various board thickness.  
For details, refer to page C32. )

50 contacts: A3C-50DA-2DSC(71)

( For a typical example, products  
are provided corresponding to  
various board thickness.  
For details, refer to page C17. )

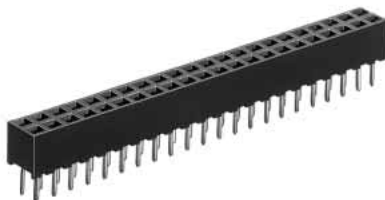
### (2) Right Angle through hole Type (see catalog page C16.)



44 contacts: A3-44DA-2DS(71) (see photo)

50 contacts: A3-50DA-2DS(71)

### (3) Straight through hole Type



44 contacts: MA18A-44DA-2DSA(71) (see photo)

(See catalog page C32.)

50 contacts: A3C-50DA-2DSA(71) (see catalog page C17.)