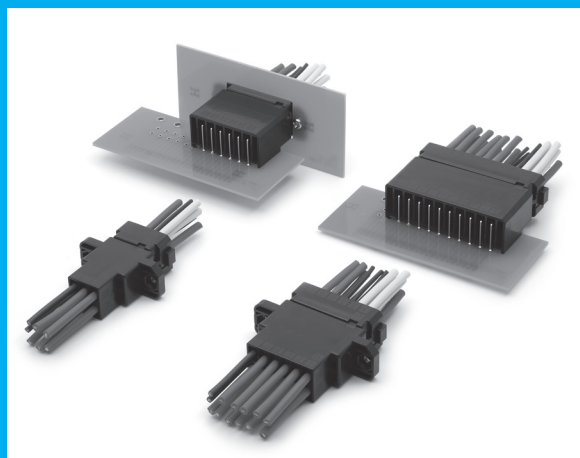


# FTC SERIES

## 5.08 mm PITCH CONNECTOR FOR DISCRETE CABLE/TWO CABLES CRIMPABLE TYPE



### FEATURES

- ▶ This connector allows two cables to be crimped into one contact.
- ▶ The crimped contact of the cable can be mounted anywhere on the housing.
- ▶ By crimping two cables, space is saved and power supply can be transferred between the connectors.
- ▶ Absorbs  $\pm 3$  mm (0.118") gap in XY directions.
- ▶ Movement of the screwed part of the cable connector can absorb maximum  $\pm 0.7$  mm in the XY direction in mating condition.
- ▶ Highly reliable design with an effective mating length of 3 mm.
- ▶ Twin-Leaf Pinching 2 point contact structure prevents contact buckling and improves reliability with stable contact force.
- ▶ The receptacle side connector has drawer type (FTC01), with lock type (FTC02). The plug side connector has right angle type (FTC11) and cable relay type (FTC12).

### ORDER CODE

**FTC0**  -

①                      ②

\*Please order in multiples of the quantity per package.

① **[Type]** Receptacle (Cable side connector) **FTC01** : Drawer type **FTC02** : With lock type

② **[Number of contacts]** (FTC01) **12** : 12pin (FTC02) **06** : 06pin **10** : 10pin **12** : 12pin **20** : 20pin

\*Above order code FTC0- is for housing only, crimp contact are sold separately. About contact order code, please refer next page.

### ORDER CODE

**FTC11**-

①                      ②                      ③                      ④

\*Please order in multiples of the quantity per package.

① **[Type]** **FTC11** : Plug (PCB side connector)

② **[Number of contacts]** (S type) **06** : 6pin **12** : 12pin **20** : 20pin (L type) **06** : 6pin **10** : 10pin **12** : 12pin **20** : 20pin

③ **[Contact tail style]** **S** : Straight **L** : Right angle

④ **[Gold plating thickness]** **B** : 0.1 $\mu$ m min **F** : 0.38 $\mu$ m min

### ORDER CODE

**FTC12**-

①                      ②

\*Please order in multiples of the quantity per package.

① **[Type]** **FTC12** : Plug (Cable-relay type)

② **[Number of contacts]** **06** : 6pin **10** : 10pin **12** : 12pin **20** : 20pin

\*Above order code FTC12- is for housing only, crimp contact are sold separately. About contact order code, please refer next page.

### SPECIFICATIONS

Material and plating		Electrical characteristics	
Insulator material	Glass-filled PBT (UL94V-0), Black	Current rating	Refer the next page "Rated current table"
Contact material	Copper alloy	Rated voltage	600V AC-DC
Contact plating	[FTC0 <input type="text"/> /12] Nickel base (Contact area) Gold (Crimping area) Nickel [FTC11] Gold over Nickel	Contact resistance	10 m $\Omega$ max.
		Dielectric withstanding voltage	2,200V AC for 1 minute.
		Insulation resistance	1,000 M $\Omega$ min. at 500V DC
		Operating temperature	-55°C to +105°C
Retention clip material	Copper alloy	Durability of inser tion and withdrawal	[Gold plating thickness 0.1 $\mu$ m min.] 100 times [Gold plating thickness 0.38 $\mu$ m min.] 500 times
Retention clip plating	Gold over Nickel	Recommended cable	#14/16/18/20 AWG Discrete wire cables (Outer diameter of cable coating: $\Phi$ 1.8 to $\Phi$ 3.4mm)
Washer/Rivet material	Stainless steel	Tensile strength of crimped part	[AWG #14/16] 190N min. [AWG #18] 120N min. [AWG #20] 75N min.

### Rated current table

▶ Standard Rated current \*1

Unit: A (per contact)

Mating matrix		Cable size			
Receptacle	Plug	AWG#14	AWG#16	AWG#18	AWG#20
FTC01-12 *2	FTC11-12S□	9.0	8.5	7.5	7.0
	FTC11-12L□	8.5	8.5	7.5	7.0
	FTC12-12	12.0	9.5	7.5	7.5
FTC02-□□ *3	FTC11-□□S□	8.0	7.0	6.0	6.0
	FTC11-□□L□	7.0	6.0	5.5	5.5
	FTC12-□□	10.0	8.5	6.5	6.5

\* 1 The rated current varies depending on the number of contacts to be energized, so please contact our sales staff for details.

\* 2 Rated current when all 12-pin contacts are energized

\* 3 Rated current when all 20-pin contacts are energized.

▶ Rated current for UL UL1977 \*UL cUL File No. E509060

Unit: A (per contact)

Mating matrix		Cable size			
Receptacle	Plug	AWG#14	AWG#16	AWG#18	AWG#20
FTC0□-□□	FTC11-□□□□	7.0	6.0	5.5	5.5
	FTC12-□□	7.0	6.0	5.5	5.5

### Mating table

ORDER CODE		Receptacle	
Plug	FTC11-□□S□	Vertical mating / Drawer type 12pin	Vertical mating / With lock 6/12/20pin
	FTC11-□□L□	Horizontal mating / Drawer type 12pin	Horizontal mating / With lock 6/10/12/20pin
	FTC12-□□	Cable-relay mating / Drawer type 12pin	Cable-relay mating / With lock 6/10/12/20pin

### Contact number table

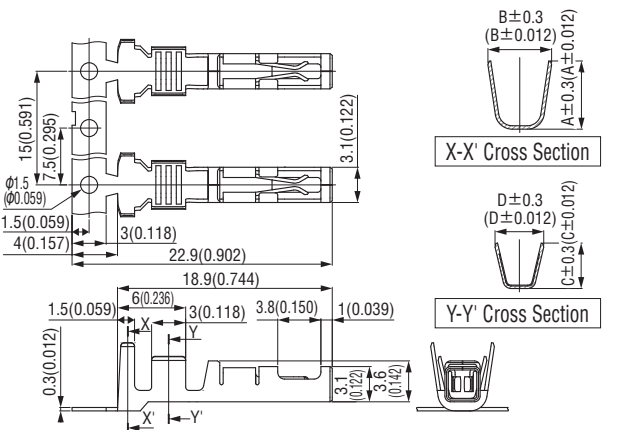
Product type	Number of contacts				
	6	10	12	20	
Receptacle	FTC01-□□ Cable side connector / Drawer type	—	—	√	—
	FTC02-□□ Cable side connector / With rock	√	√	√	√
Plug	FTC11-□□S□ PCB side connector / Vertical type	√	—	√	√
	FTC11-□□L□ PCB side connector / Horizontal type	√	√	√	√
	FTC12-□□ Cable-relay type	√	√	√	√

\* Other numbers of contacts will be developed. Please contact our sales representative for details.

### Crimp contact

Unit : mm(inch)

◆ Crimp contact for FTC0□-□□ (Cable side connector) [Recommended cable size: 1M/1L]



Part number	Packaging style
#625F-1□-R	Reel
#625F-1□-B	Other

#### ▶ Product table / Dimensions

Part number	A	B	C	D	No. of packaging
#625□-1M-R	5.0(0.197)	4.68(0.184)	3.5(0.138)	3.5(0.138)	2,000
#625□-1M-B	5.0(0.197)	4.68(0.184)	3.5(0.138)	3.5(0.138)	100
#625□-1L-R	6.0(0.236)	5.61(0.221)	4.0(0.157)	4.29(0.169)	2,000
#625□-1L-B	6.0(0.236)	5.61(0.221)	4.0(0.157)	4.29(0.169)	100

#### ORDER CODE

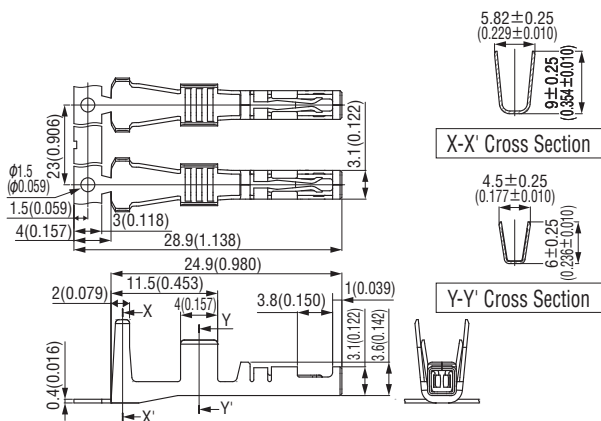
**#625** - **1** - □

① ② ③ ④

\*Please order in multiples of the quantity per package.

- [Contact name]** #625 : Crimp contact for FTC0□
- [Gold plating thickness]** B : 0.1μm min. F : 0.38μm min.
- [Applicable cable size]**
  - 1M** : Single crimp AWG #18/20  
(Outer diameter of cable coating: Φ 1.8 to 2.8 mm)
  - Two-piece crimp AWG#20 × 2 pieces  
(Outer diameter of cable coating: Φ 1.8 to 1.9 mm × 2 pieces)
  - Two-piece crimp AWG #18 × 2 pieces  
(Outer diameter of cable coating: Φ 2.0 to 2.1 mm × 2 pieces)
  - 1L** : Single crimp AWG #14/16  
(Outer diameter of cable coating: Φ 2.4 to 3.4 mm)
  - Two-piece crimp AWG #16 × 2 piece  
(Outer diameter of cable coating: Φ 3.0 mm × 2 pieces)
- [Type]** R : Chain shape B : In pieces

◆ Crimp contact for FTC0□-□□ (Cable side connector) [Recommended cable size: 2L]



▶ Product table

Part number	No. of packaging	Packaging style
#625□-2L-R	800	Reel
#625□-2L-B	100	Other

**ORDER CODE** #625□ - 2L - □

① ② ③ ④

\*Please order in multiples of the quantity per package.

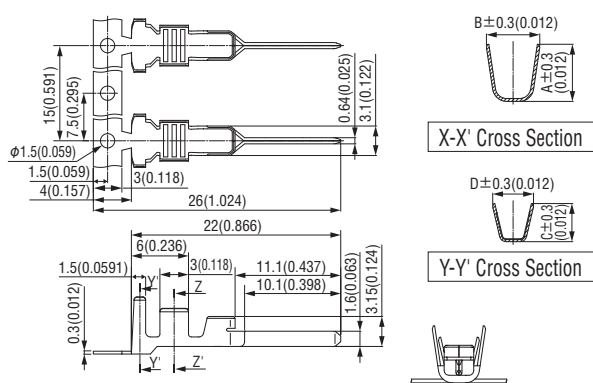
① **[Contact name]** #625 : Crimp contact for FTC0 □

② **[Gold plating thickness]** B : 0.1μm min. F : 0.38μm min.

③ **[Applicable cable size]**  
 2L : Two-piece crimp AWG #14 × 2 pieces  
 (Outer diameter of cable coating: Φ3.4 mm × 2 pieces)

④ **[Type]** R : Chain shape B : In pieces

◆ Crimp contact for FTC12-□□□ (Cable relay type)



Part number	Packaging style
#641□-1□-R	Reel
#641□-1□-B	Other

▶ Product table / Dimensions

Part number	A	B	C	D	No. of Packaging
#641□-1M-R	5.0(0.197)	4.68(0.184)	3.5(0.138)	3.5(0.138)	2,000
#641□-1M-B	5.0(0.197)	4.68(0.184)	3.5(0.138)	3.5(0.138)	100
#641□-1L-R	6.0(0.236)	5.61(0.221)	4.0(0.157)	4.29(0.169)	2,000
#641□-1L-B	6.0(0.236)	5.61(0.221)	4.0(0.157)	4.29(0.169)	100

**ORDER CODE** #641□ - 1□ - □

① ② ③ ④

\*Please order in multiples of the quantity per package.

① **[Contact name]** #641 : Crimp contact for FTC12

② **[Gold plating thickness]** B : 0.1μm min. F : 0.38μm min.

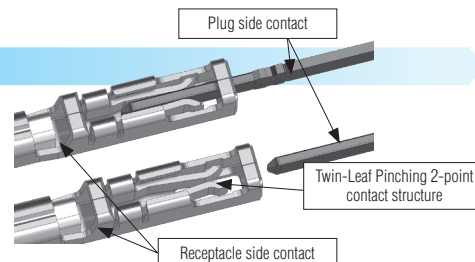
③ **[Applicable cable size]**  
 1M : Single crimp AWG #18/20  
 (Outer diameter of cable coating: Φ1.8 to 2.8 mm)  
 Two-piece crimp AWG #20×2 pieces  
 (Outer diameter of cable coating: Φ1.8 to 1.9 mm×2 pieces)  
 Two-piece crimp AWG #18 × 2 pieces  
 (Outer diameter of cable coating: Φ2.0 to 2.1 mm × 2 pieces)  
 1L : Single crimp AWG #14/16  
 (Outer diameter of cable coating: Φ2.4 to 3.4 mm)  
 Two-piece crimp AWG #16 × 2 piece  
 (Outer diameter of cable coating: Φ3.0 mm × 2 pieces)

④ **[Type]** R : Chain shape B : In pieces

Twin-Leaf Pinching 2-point contact structure

With the KEL original twin-leaf pinching 2 point contact structure, the flat plate type contact of plug connector is inserted into the contact of receptacle connector (A part of the figure on the right side) for electrical contact.

The flat plate shaped contact of plug connector is tolerant of buckling compared to pin header type contact, and the stable contact force of the pinching structure of receptacle connector assures high reliability of electrical contact.



Assembly Tool

◆ Crimping hand tool

Part number	Crimp contact	Number of cables	Applicable cable size
CH-21	#625□-1M-□ #641□-1M-□	1	AWG#18/20
		2	AWG#20×2
		2	AWG#18×2
CH-22	#625□-1L-□ #641□-1L-□	1	AWG#14/16
		2	AWG#16×2
CH-23	#625□-2L-□	2	AWG#14×2

◆ Crimping machine

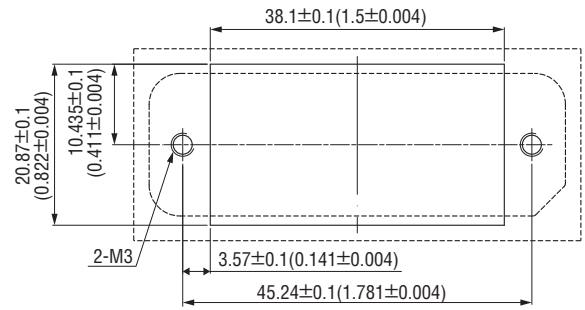
Crimp contact	#625□-1M-R	#641□-1M-R	#625□-1L-R	#641□-1L-R	#625□-2L-R
Manufacturer	Japan Automatic Machine Co.,Ltd.				
Crimping machine	LPC220S			LPC420S	
Applicator	CFX064300K	CFX050300K	QFX021900K		

\*A crimping machine and applicator can be purchased from Japan Automatic Machine Co.,Ltd.

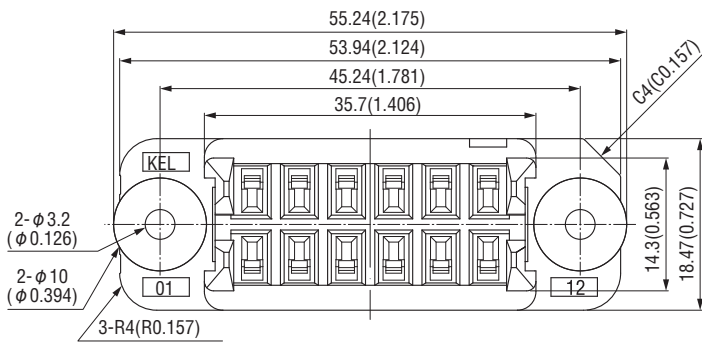
# FTC01-12 (Receptacle, Cable side connector, Drawer type)

Unit : mm(inch)

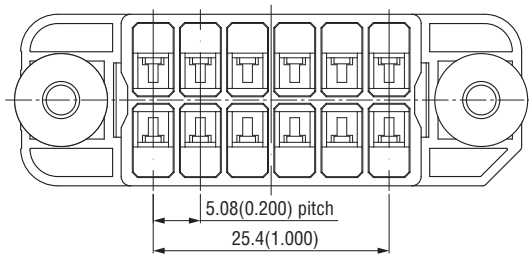
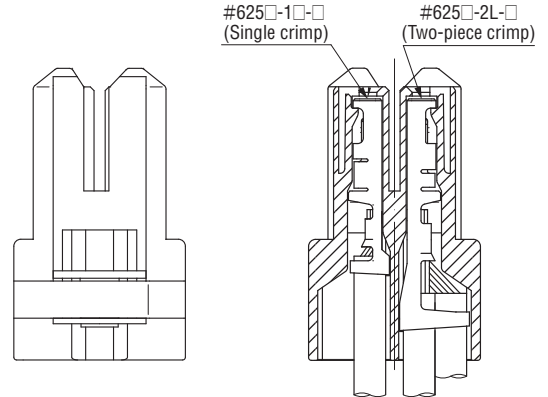
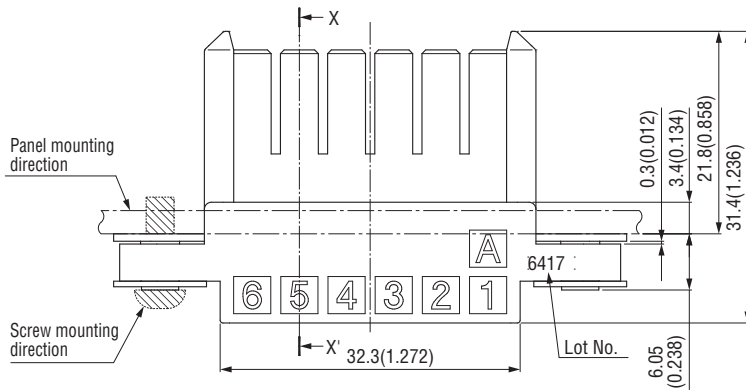
## Panel Layout(Component Side View)



Applicable panel thickness  $t=2.5(0.098)$  max.



## X-X' Cross Section (With the contact inserted)

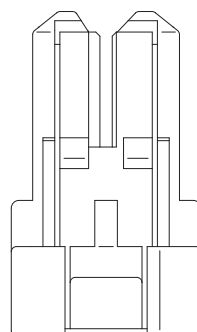
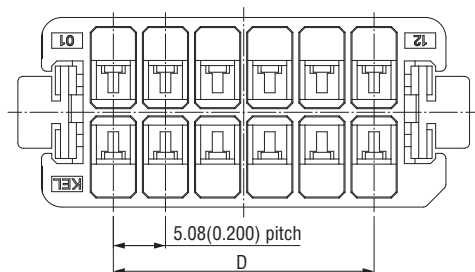
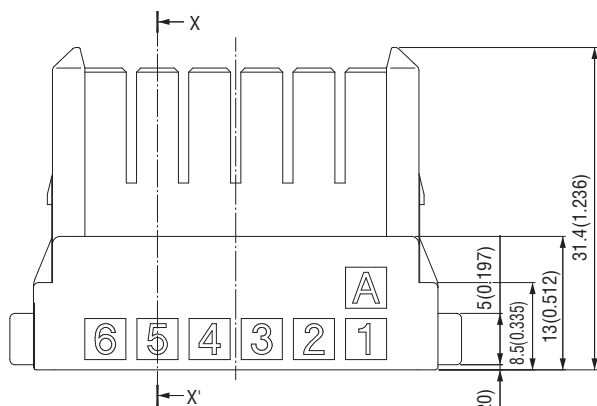
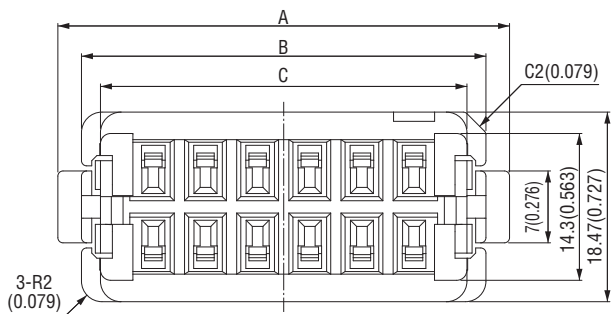
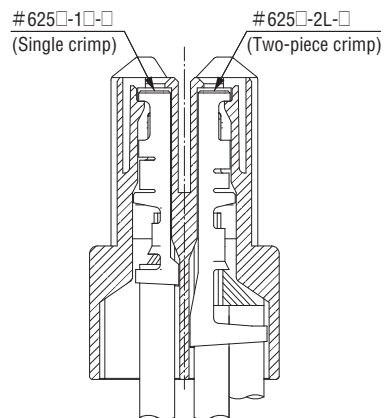


### Packaging style

Tray

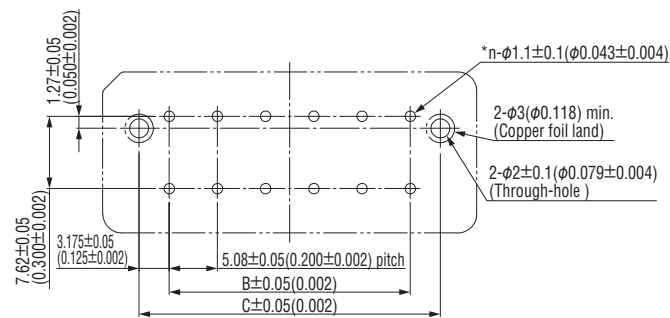
### Product table

No. of contacts	Part number	No. of packaging
12	FTC01-12	36

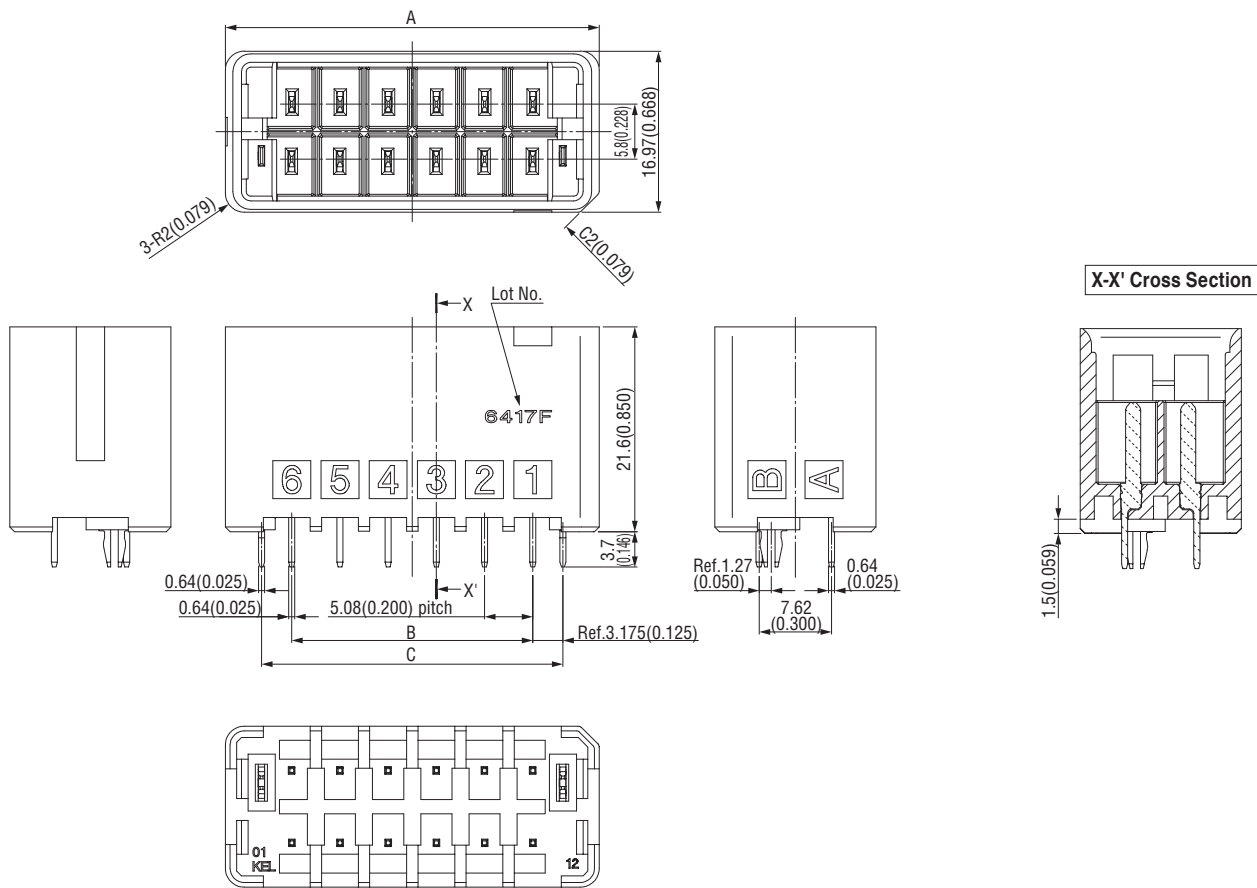

**X-X' Cross Section (With the contact inserted)**

 Packaging style  
 Tray

**Product table / Dimensions**

No. of contacts	Part number	A	B	C	D	No. of packaging
6	FTC02-06	28.76 (1.132)	24.16 (0.951)	20.46 (0.806)	10.16 (0.400)	72
10	FTC02-10	38.92 (1.532)	34.32 (1.351)	30.62 (1.206)	20.32 (0.800)	48
12	FTC02-12	44.0 (1.732)	39.4 (1.551)	35.7 (1.406)	25.4 (1.000)	42
20	FTC02-20	64.32 (2.532)	59.72 (2.351)	56.02 (2.206)	45.72 (1.800)	30

**Printed Circuit Board Layout (Component Side View)**


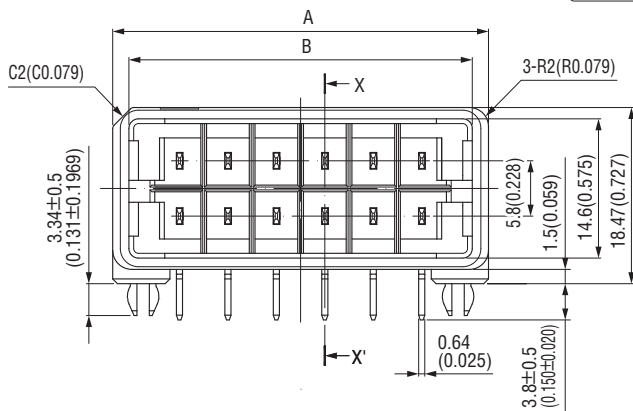
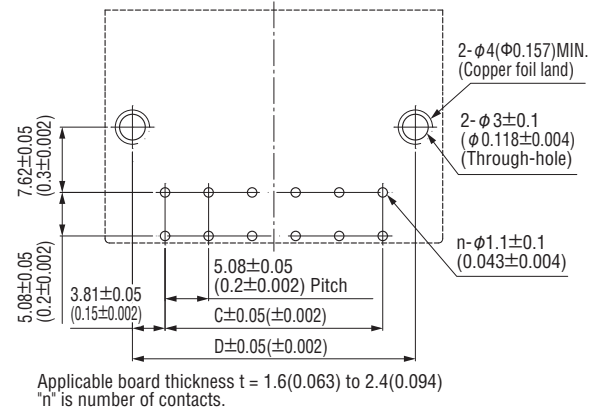
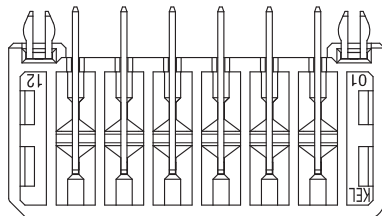
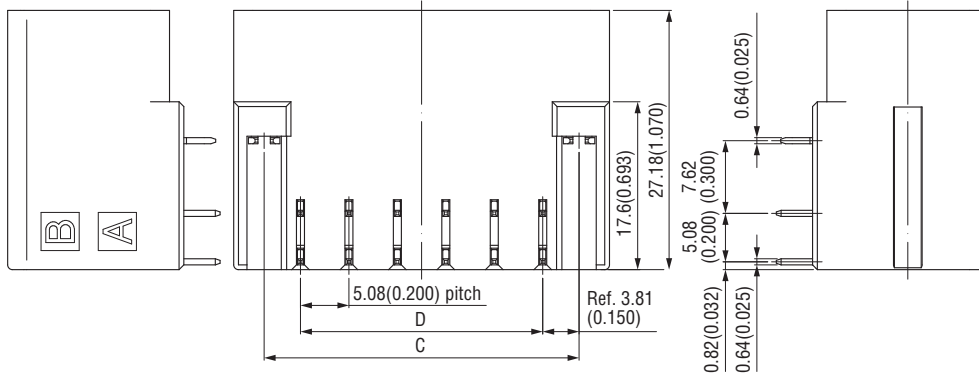
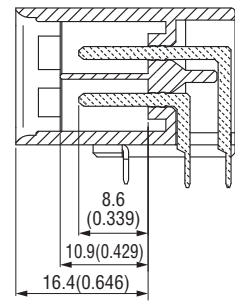
Applicable board thickness  $t = 1.6(0.063)$  to  $2.4(0.094)$   
 'n' is number of contacts.


**Packaging style**

Pipe

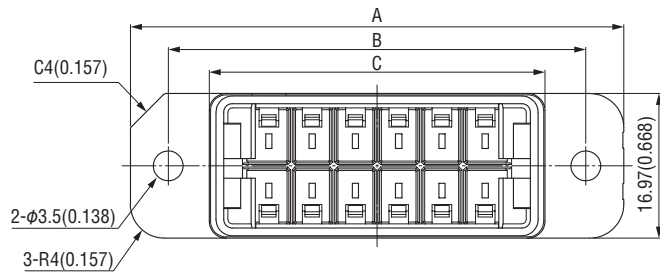
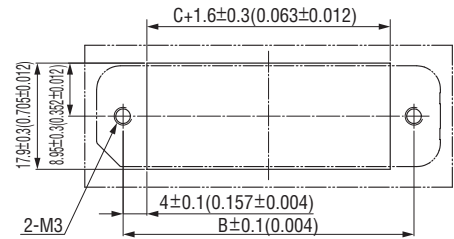
**Product table / Dimensions**

No. of contacts	Part number	A	B	C	No. of packaging
6	FTC11-06S□	24.16 (0.951)	10.16 (0.400)	16.51 (0.650)	20
12	FTC11-12S□	39.4 (1.551)	25.4 (1.000)	31.75 (1.250)	12
20	FTC11-20S□	59.72 (2.351)	45.72 (1.800)	52.07 (2.050)	8

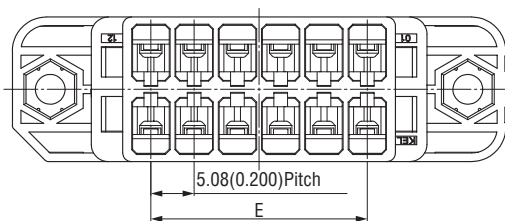
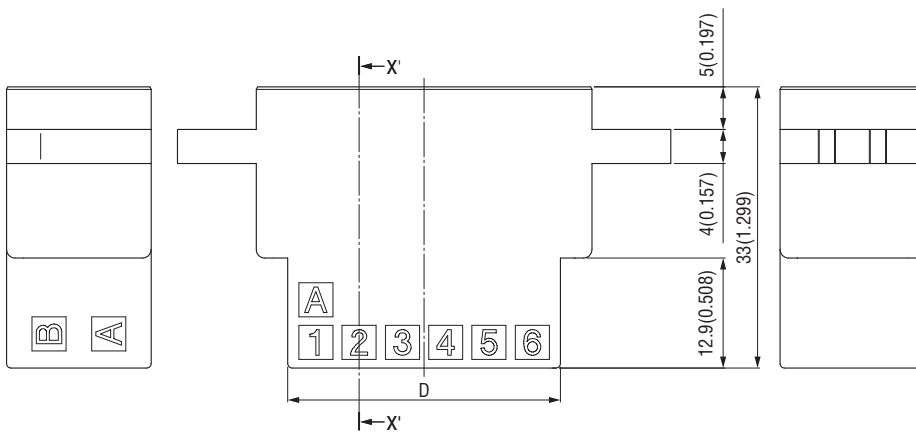
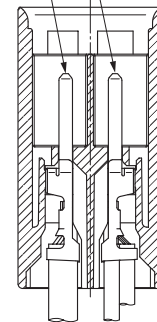
**▶ Printed Circuit Board Layout (Component Side View)**

**X-X' Cross Section**

 Packaging style  
 Pipe

**▶ Product table / Dimensions**

No. of contacts	Part number	A	B	C	D	No. of packaging
6	FTC11-06L□	24.16 (0.951)	20.76 (0.817)	17.78 (0.700)	10.16 (0.400)	20
10	FTC11-10L□	34.32 (1.351)	30.92 (1.217)	27.94 (1.100)	20.32 (0.800)	14
12	FTC11-12L□	39.4 (1.551)	36.0 (1.417)	33.02 (1.300)	25.4 (1.000)	12
20	FTC11-20L□	59.72 (2.351)	56.32 (2.217)	53.34 (2.100)	45.72 (1.800)	8


**▶ Panel Layout(Component Side View)**

**X-X' Cross Section  
(With the contact inserted)**

#641□-1□-□ (Single crimp)      #641□-1□-□ (Two-piece crimp)


 Packaging style  
Tray

**▶ Product table / Dimensions**

No. of contacts	Part number	A	B	C	D	E	No. of packaging
6	FTC12-06	42.66 (1.680)	33.76 (1.329)	24.16 (0.951)	16.76 (0.660)	10.16 (0.400)	48
10	FTC12-10	52.82 (2.080)	43.92 (1.729)	34.32 (1.351)	26.92 (1.060)	20.32 (0.800)	36
12	FTC12-12	57.9 (2.280)	49.0 (1.929)	39.4 (1.551)	32.0 (1.260)	25.4 (1.000)	36
20	FTC12-20	78.22 (3.080)	69.32 (2.729)	59.72 (2.351)	52.32 (2.060)	45.72 (1.800)	24