

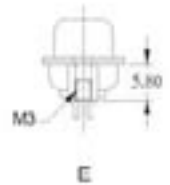
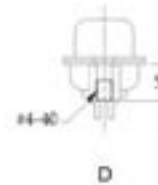
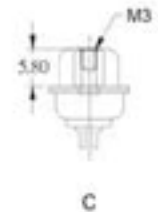
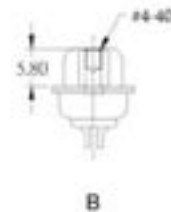
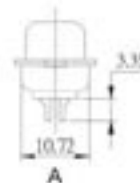
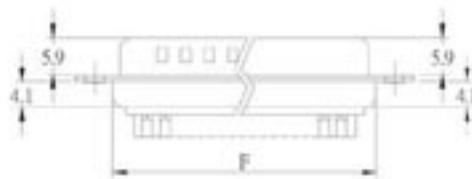
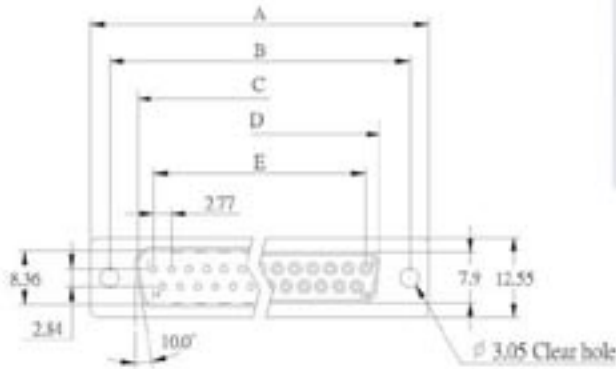
# D-SUB SOLDER TYPE

## SPECIFICATION

Current Rate:3 AMP  
 Insulation Resistance:1000M  $\Omega$  Min  
 Contact Resistance:30m  $\Omega$  Max  
 Dielectric voltage:500V AC for one minute  
 Operation Temperature:-40°C to +105°C

## MATERIAL

Insulator:PBT+30% Glass Fiber(UL94V-0)  
 Contact Pin:F:Phosphor Bronze or Brass  
 M:Brass



Dimensions

Positions	A	B	C	D	E	F
9	30.81	24.99	16.92	16.33	11.08	19.20
15	39.14	33.32	25.50	24.66	19.39	27.70
25	53.04	47.04	38.95	38.38	33.24	41.10
37	69.32	63.50	55.42	54.84	49.86	57.30

## ORDER INFORMATION

Bestell Code/Order Code: DST (Stecker / Male) -  -  -   
 DBU (Buchse / Female) -  -  -

= Polzahl / No. of contacts (9,15,25,37)

= Isolierkörper weiß / Insulator white

= Lötkelch / Solder Type

# D-SUB P.C.B. STRAIGHT TYPE

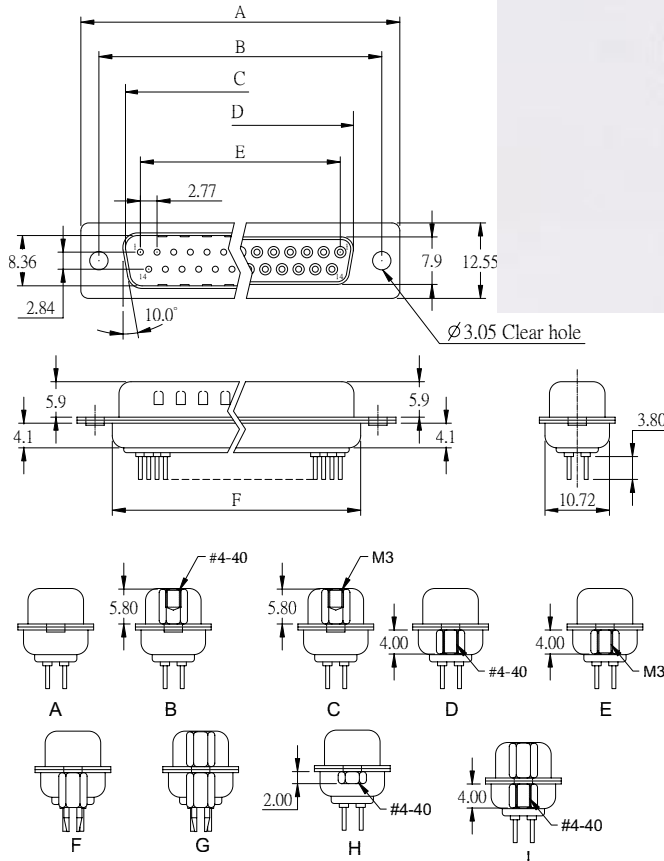


## SPECIFICATION

Current Rate: 3 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min  
 Contact Resistance: 30m  $\Omega$  Max  
 Dielectric voltage: 500V AC for one minute  
 Operation Temperature: -40°C to +105°C

## MATERIAL

Insulator: PBT+30% Glass Fiber(UL94V-0)  
 Contact Pin: F: Phosphor Bronze or Brass  
 M: Brass



Dimensions

Positions	A	B	C	D	E	F
9	30.81	24.99	16.92	16.33	11.08	19.20
15	39.14	33.32	25.50	24.66	19.39	27.70
25	53.04	47.04	38.96	38.38	33.24	41.10
37	69.32	63.50	55.42	54.84	49.86	57.30

## ORDER INFORMATION

### Bestell Code/Order Code:

DST (Stecker / Male) - 1 - 2 - P  
 DBU (Buchse / Female) - 1 - 2 - P

1 = Polzahl / No. of contacts (9,15,25,37)  
2 = Isolierkörper weiß / Insulator white  
 P = print gerade / P.C.B. straight

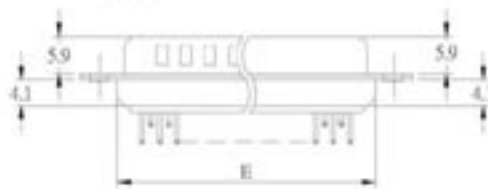
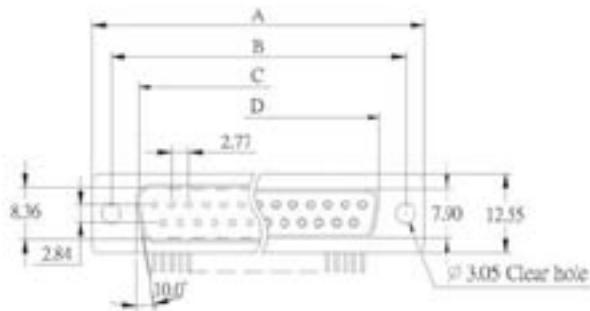
# D-SUB MACHINE PIN

## SPECIFICATION

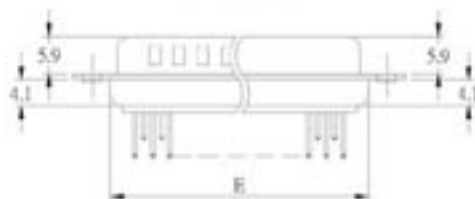
Current Rate: 3 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min  
 Contact Resistance: 30m  $\Omega$  Max  
 Dielectric voltage: 500V AC for one minute  
 Operation Temperature: -40°C to +105°C

## MATERIAL

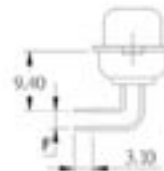
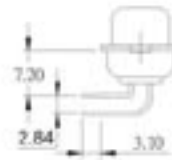
Insulator: PBT+30% Glass Fiber(UL94V-0)  
 Contact Pin: F: Phosphor Bronze or Brass  
 M: Brass



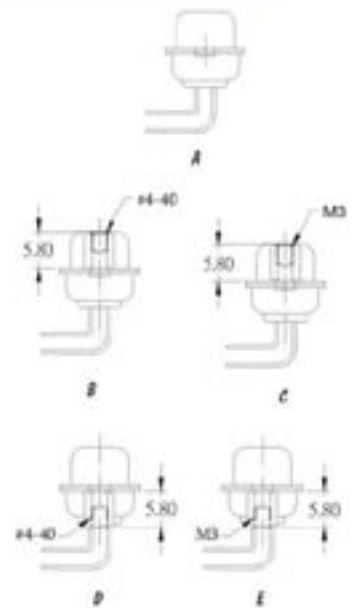
7.2mm Footprint



9.4mm Footprint



Dim F
2.54
2.84



### Dimensions

Positions	A	B	C	D	E
9	30.81	24.99	16.92	16.33	19.20
15	39.14	33.32	25.50	24.66	27.70
25	53.04	47.04	38.96	38.38	41.10
37	69.32	63.50	55.42	54.84	57.30

## ORDER INFORMATION

### Bestell Code/Order Code:

DST (Stecker / Male) - ① - ② - A  
 DBU (Buchse / Female) - ① - ② - A

- ① = Polzahl / No. of contacts (9,15,25,37)
- ② = Isolierkörper weiß / Insulator white
- A = abgewinkelt / right angle

# D-SUB RIGHT ANGLE TYPE 7.2/9.4/13.84 mm

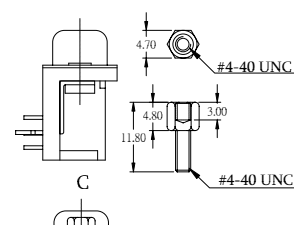
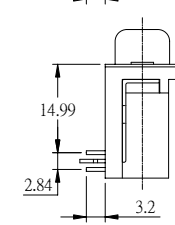
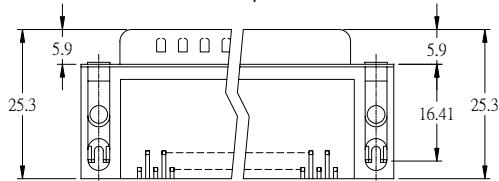
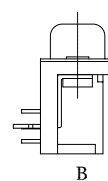
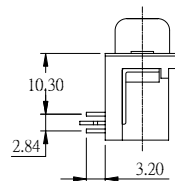
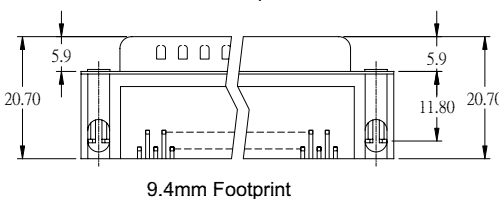
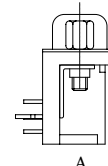
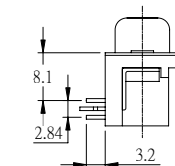
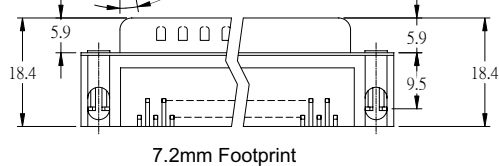
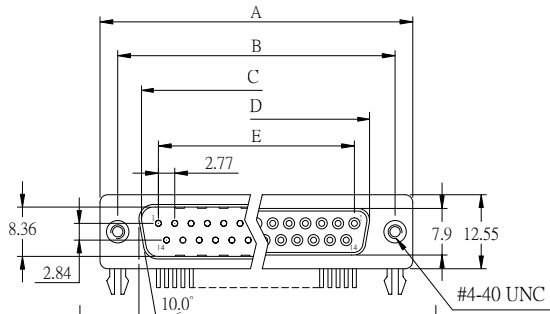


## SPECIFICATION

Current Rate: 3 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min  
 Contact Resistance: 30m  $\Omega$  Max  
 Dielectric voltage: 1000V AC for one minute  
 Operation Temperature: -55°C to +105°C

## MATERIAL

Insulator: PBT+30% Glass Fiber(UL94V-0)  
 Contact Pin: F: Phosphor Bronze or Brass  
 M: Brass



Dimensions					
Positions	A	B	C	D	E
9	30.81	24.99	16.92	16.33	11.08
15	39.14	33.32	25.50	24.66	19.39
25	53.04	47.04	38.96	38.38	33.24
37	69.32	63.50	55.42	54.84	49.86

## ORDER INFORMATION

Bestell Code/Order Code: DPR - **1** - **2** - **3** - **4**

- 1** = Raster / Pitch  
(without = 9,4 mm, S = 7,2 mm, T = 13,84)
- 2** = Polzahl / No. of contacts (9,15,25,37)
- 3** = M: Stecker / Male , F: Buchse / Female
- 4** = Isolierkörper schwarz / Insulator black

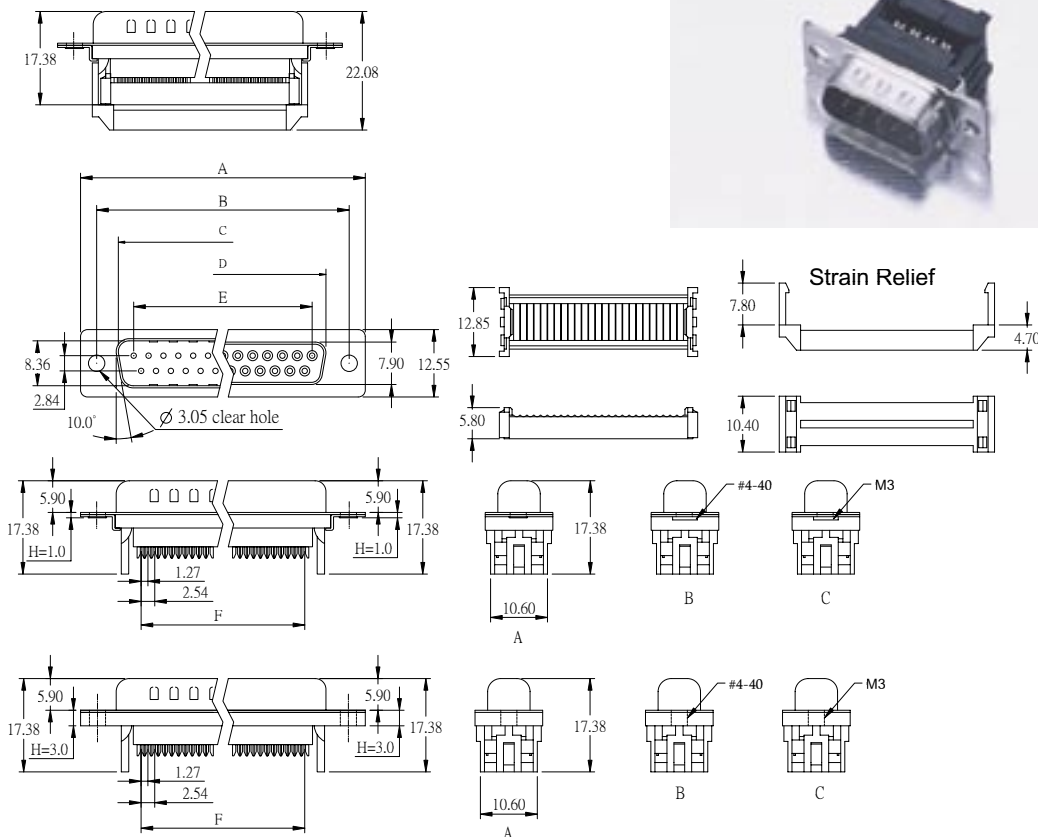
# D-SUB I.D.C. TYPE

## SPECIFICATION

Current Rate: 3 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min  
 Contact Resistance: 20m  $\Omega$  Max  
 Dielectric voltage: 500V AC for one minute  
 Operation Temperature: -40°C to +105°C

## MATERIAL

Insulator: PBT+30% Glass Fiber (UL94V-0)  
 Contact Pin: F: Phosphor Bronze or Brass  
 M: Brass



Dimensions

Positions	A	B	C	D	E	F
9	30.81	24.99	16.92	16.33	11.08	10.16
15	39.14	33.32	25.50	24.66	19.39	17.78
25	53.04	47.04	38.96	38.38	33.24	30.48
37	69.32	63.50	55.42	54.84	49.86	45.72

# ORDER INFORMATION

Bestell Code/Order Code: DSK - **1** - **2** - **3** - **4**

- 1** = Polzahl / No. of contacts (9,15,25,37)
- 2** = P: Stecker / Male; S: Buchse / Female
- 3** = UNC 4 - 40
- 4** = Isolierkörper blau / Insulator blue

# D-SUB CRIMP TYPE

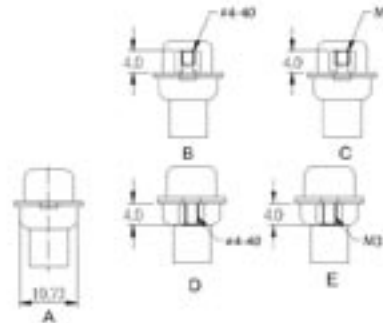
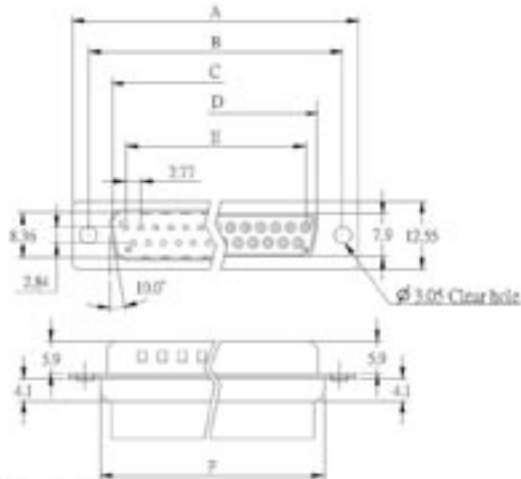


## SPECIFICATION

Current Rate: 3 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min  
 Contact Resistance: 30m  $\Omega$  Max  
 Dielectric voltage: 500V AC for one minute  
 Operation Temperature: -40°C to +105°C

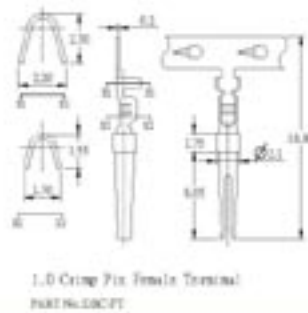
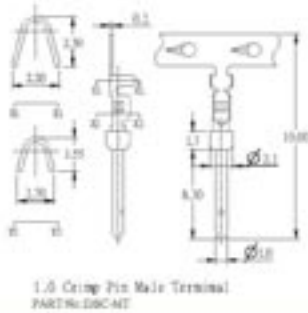
## MATERIAL

Insulator: PBT+30% Glass Fiber(UL94V-0)  
 Contact Pin: F: Phosphor Bronze or Brass  
 M: Brass



Dimensions

Positions	A	B	C	D	E	F
9	30.81	24.99	16.92	16.33	11.98	19.20
15	39.14	33.32	25.50	24.66	19.39	27.70
25	53.04	47.04	38.96	38.38	33.24	41.10
37	69.32	63.50	55.42	54.84	49.66	57.30



## ORDER INFORMATION

Bestell Code/Order Code: DST (Stecker / Male) - [1] - [2] - crimp  
 DBU (Buchse / Female) - [1] - [2] - crimp

[1] = Polzahl / No. of contacts (9,15,25,37)

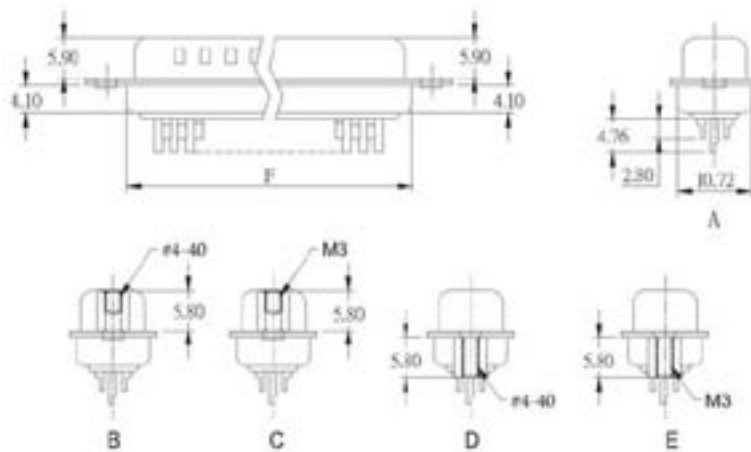
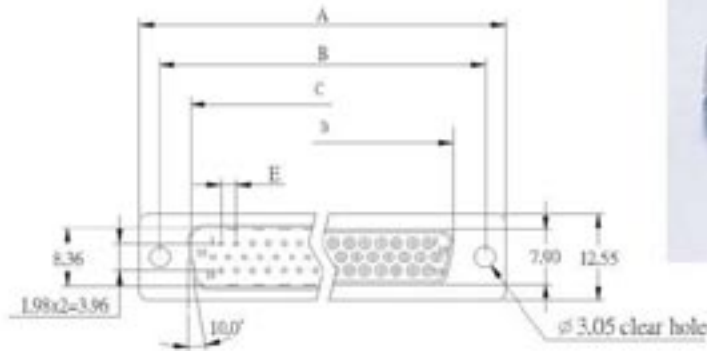
[2] = Isolierkörper schwarz / Insulator black

## SPECIFICATION

Current Rate: 3 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min  
 Contact Resistance: 13m  $\Omega$  Max  
 Dielectric voltage: 500V AC for one minute  
 Operation Temperature: -55°C to +105°C

## MATERIAL

Insulator: PBT+30% Glass Fiber(UL94V-0)  
 Contact Pin: F: Phosphor Bronze or Brass  
 M: Brass



Dimensions

Positions	A	B	C	D	E	F
15	30.81	24.99	16.92	16.33	2.29	19.20
26	39.14	33.32	25.50	24.66	2.29	27.70
44	53.04	47.04	38.96	38.38	2.29	41.10
62	69.32	63.50	55.42	54.84	2.41	57.30

## ORDER INFORMATION

Bestell Code/Order Code: HD - ① - ② - ③

- ① = Polzahl / No. of contacts (15,26,44,62)
- ② = M: Stecker / Male , F: Buchse / Female
- ③ = Isolierkörper weiß / Insulator white

# D-SUB HIGH DENSITY PCB STRAIGHT TYPE

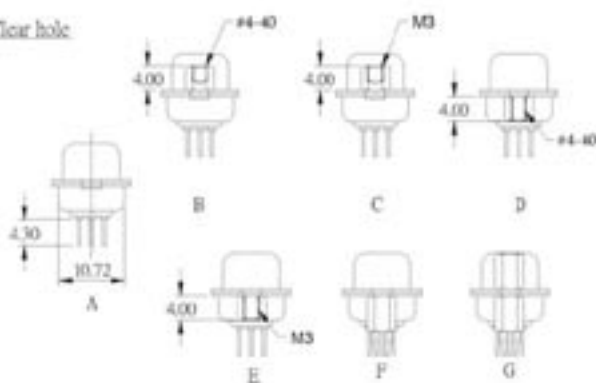
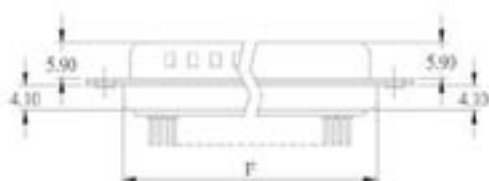
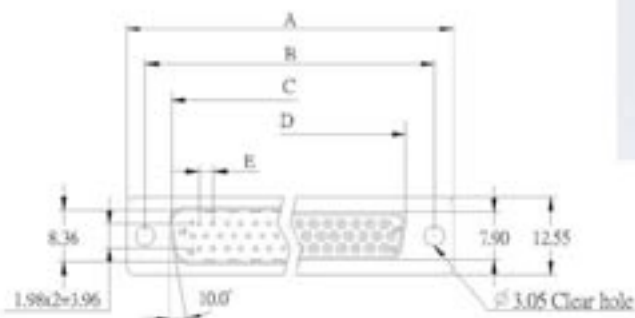


## SPECIFICATION

Current Rate: 3 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min  
 Contact Resistance: 13m  $\Omega$  Max  
 Dielectric voltage: 500V AC for one minute  
 Operation Temperature: -40°C to +105°C

## MATERIAL

Insulator: PBT+30% Glass Fiber(UL94V-0)  
 Contact Pin: F: Phosphor Bronze or Brass  
 M: Brass



Dimensions						
Positions	A	B	C	D	E	F
15	30.81	24.99	16.92	16.33	2.29	19.20
26	39.14	33.32	25.50	24.66	2.29	27.70
44	53.04	47.04	38.96	38.38	2.29	41.10
62	69.32	63.50	55.42	54.84	2.41	57.30

## ORDER INFORMATION

Bestell Code/Order Code: HD - ① - ② - ③

- ① = Polzahl / No. of contacts (15,26,44,62)
- ② = MP: Stecker / Male , FP: Buchse / Female
- ③ = Isolierkörper weiß / Insulator white



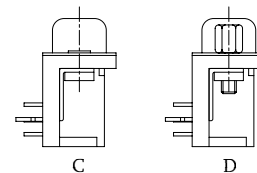
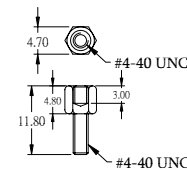
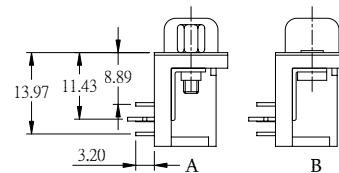
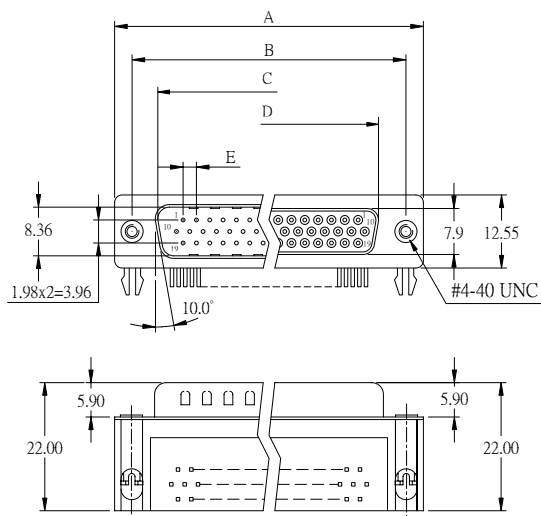
# D-SUB HIGH DENSITY RIGHT ANGLE TYPE

## SPECIFICATION

Current Rate: 3 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min  
 Contact Resistance: 30m  $\Omega$  Max  
 Dielectric voltage: 500V AC for one minute  
 Operation Temperature: -55°C to +105°C

## MATERIAL

Insulator: PBT+30% Glass Fiber(UL94V-0)  
 Contact Pin: Phosphor Bronze or Brass



Dimensions					
Positions	A	B	C	D	E
15	30.81	24.99	16.92	16.33	2.29
26	39.14	33.32	25.50	24.66	2.29
44	53.04	47.04	38.96	38.38	2.29
62	69.32	63.50	55.42	54.84	2.41

## ORDER INFORMATION

Bestell Code/Order Code: HD - **1** - **2** - **3**

- 1** = Polzahl / No. of contacts (15,26,44,62)
- 2** = AM: Stecker / Male , AF: Buchse / Female
- 3** = Isolierkörper schwarz / Insulator black

# IDC SOCKET 2.54 mm

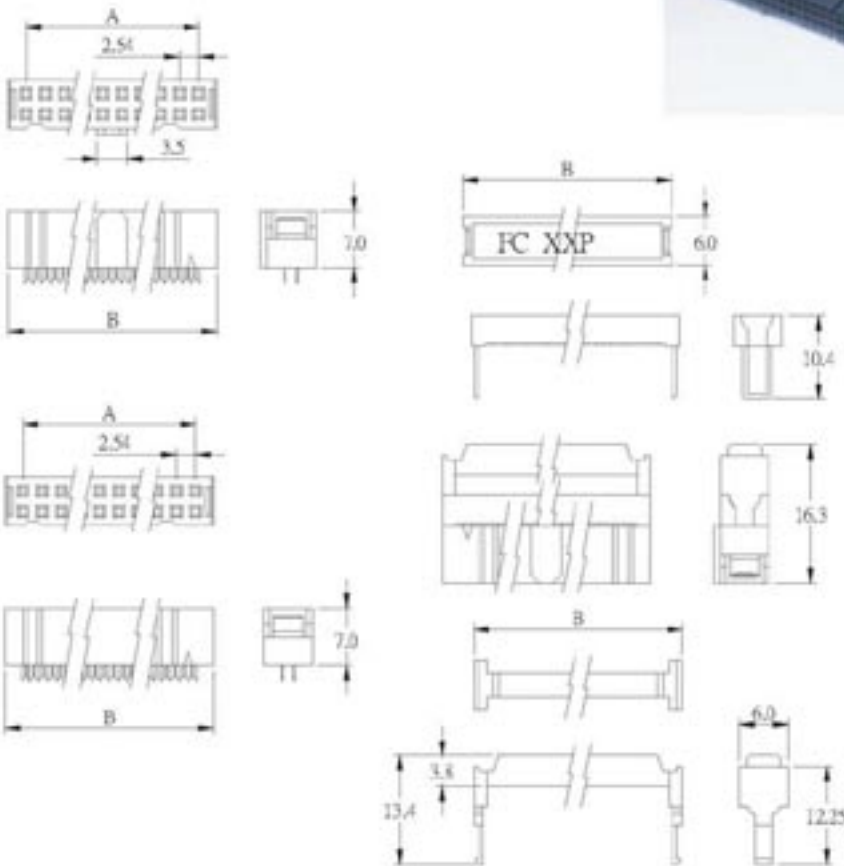


## SPECIFICATION

Current Rate: 1 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min.  
 Contact Resistance: 20m  $\Omega$  Max.  
 Dielectric voltage: 1000V AC for one minute  
 Operation Temperature: -55°C to +105°C

## MATERIAL

Insulator: PBT+25%Glass Fiber(UL94V-0)  
 Contact Pin: Phosphor Bronze



Matr flat cable 1.27 mm

Position	A <sub>±0.05</sub>	B <sub>±0.1</sub>
6P	5.08	12.16
8P	7.62	14.74
10P	10.16	17.20
12P	12.70	19.80
14P	15.24	22.50
16P	17.78	24.94
20P	22.86	30.08
24P	27.94	35.15
26P	30.48	37.58
30P	35.56	42.66
34P	40.64	47.80
40P	48.26	55.42
44P	53.34	60.56
50P	60.96	68.28
56P	68.58	75.74
60P	73.66	80.96
62P	76.20	83.32
64P	78.74	85.94

## ORDER INFORMATION

Bestell Code/Order Code: PV - [ ]

[ ] = Polzahl / No. of contacts (06 - 64)

# BOX HEADER 2.54 mm SMT/STR/RA TYPE

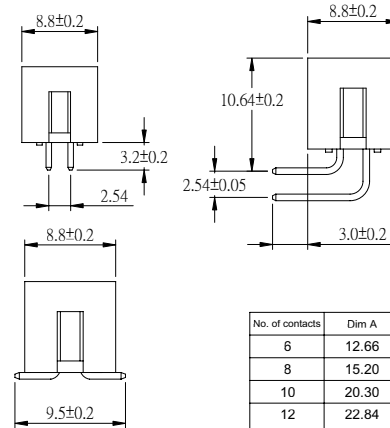
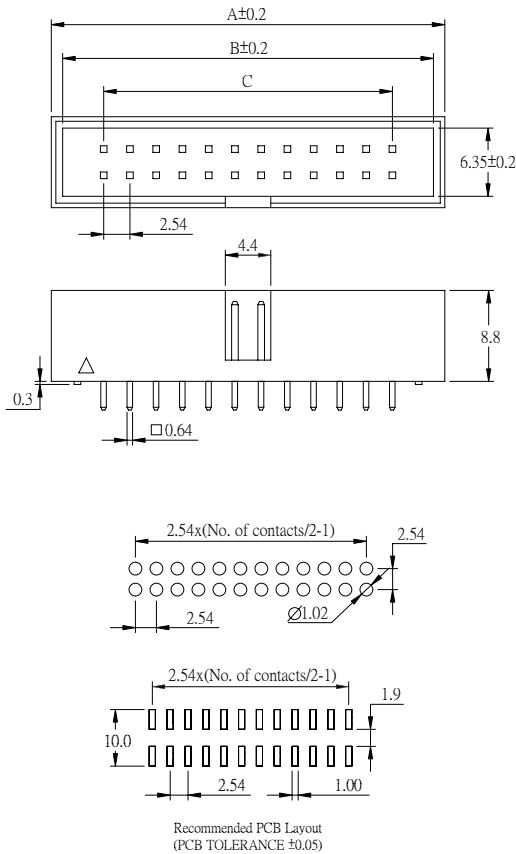


## SPECIFICATION

Current Rate: 3 AMP  
 Insulation Resistance: 5000M  $\Omega$  Min.  
 Contact Resistance: 10m  $\Omega$  Max.  
 Dielectric Voltage: 100V AC for one minute  
 Operation Temperature: -40°C to +105°C

## MATERIAL

Insulator: Polyester, UL 94V-0  
 ©Standard: P.B.T SMT: Nylon 6T  
 Contact Pin: Brass



No. of contacts	Dim A	Dim B	Dim C
6	12.66	10.26	5.08
8	15.20	12.80	7.62
10	20.30	18.10	10.16
12	22.84	20.64	12.70
14	25.38	23.18	15.24
16	27.92	25.72	17.78
20	33.00	30.80	22.85
24	38.08	35.88	27.94
26	40.62	38.42	30.48
30	45.70	43.50	35.56
34	50.80	48.58	40.64
40	58.40	56.20	48.26
44	63.48	67.28	53.34
50	71.10	68.90	60.96
56	78.72	76.52	68.58
60	83.80	81.60	73.66
64	88.88	86.68	78.74

## ORDER INFORMATION

### Bestell Code/Order Code:

ST - **1** - **2**

**1** = Polzahl / No of contacts all (6-64)

**2** = Ausführung / Version (G = gerade / straight; A = abgewinkelt / right angle; S = SMT)

# EJECTOR HEADER 2.54 mm STR/RA TYPE

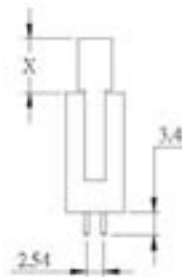
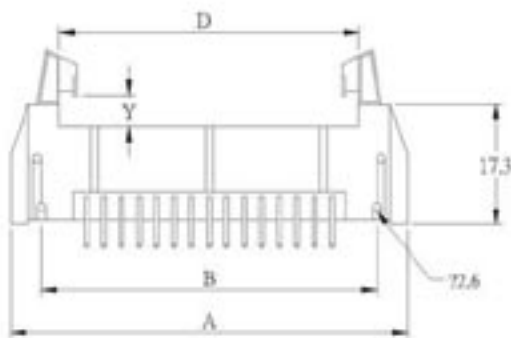
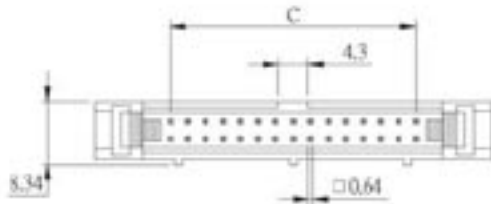


## SPECIFICATION

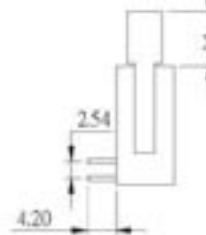
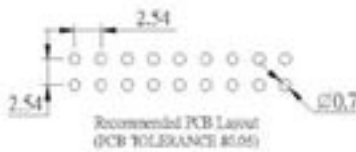
Current Rate: 3 AMP  
 Insulation Resistance: 5000M  $\Omega$  Min.  
 Contact Resistance: 10m  $\Omega$  Max.  
 Dielectric Voltage: 100V AC for one minute  
 Operation Temperature: -40°C to +105°C

## MATERIAL

Insulator: Polyester, UL 94V-0  
 ©Standard: P.B.T  
 Contact Pin: Brass



TYPE	LONG	S-OFF
X	10.80	7.25
Y	7.00	4.45



	10	12	14	16	20	24	26	30	34	40	50	60	64
A	32.00	34.54	37.08	39.62	44.70	49.78	52.32	57.40	62.48	70.10	82.80	95.50	100.58
B	21.84	24.38	26.92	29.46	34.54	39.62	42.16	47.24	52.32	59.94	72.64	85.34	90.42
C	10.16	12.70	15.24	17.78	22.86	27.94	30.48	35.56	40.64	48.26	60.96	73.66	78.74
D	17.96	20.50	23.04	25.58	30.33	35.74	38.28	43.36	48.44	56.06	68.76	81.46	86.54

## ORDER INFORMATION

### Bestell Code/Order Code:

ST - ① - ② - ③

① = Polzahl / No of contacts all (10-64)

② = Ausführung / Version (G = gerade / straight; A = abgewinkelt / right Angle)

③ = Auswerfer / Latch (L = lang / long)



# IDC SOCKET 2.0 mm

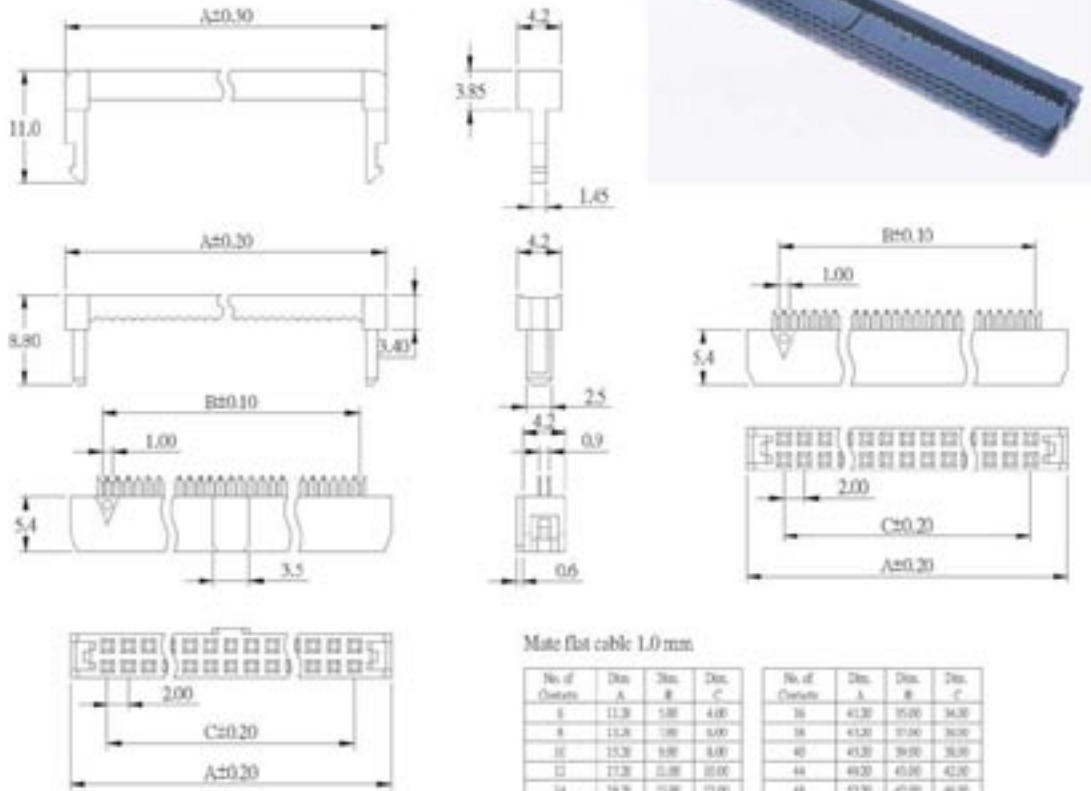


## SPECIFICATION

Current Rate: 1 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min.  
 Contact Resistance: 30m  $\Omega$  Max.  
 Dielectric voltage: 500V AC for one minute  
 Operation Temperature: -55°C to +105°C

## MATERIAL

Insulator : PBT+30% Glass Fiber(UL 94V-0)  
 Contact Pin: Phosphor Bronze



Mate flat cable 1.0 mm

No. of Contacts	Dim. A	Dim. B	Dim. C	No. of Contacts	Dim. A	Dim. B	Dim. C
6	11.3	5.8	4.0	36	61.3	35.0	34.0
8	13.3	5.8	6.0	38	63.3	35.0	36.0
10	15.3	6.8	6.0	40	65.3	36.0	38.0
12	17.3	11.8	10.0	44	69.3	41.0	42.0
14	19.3	15.8	13.0	48	73.3	45.0	46.0
16	21.3	19.8	16.0	50	75.3	46.0	48.0
18	23.3	19.8	18.0	54	79.3	51.0	52.0
20	25.3	19.8	18.0	56	81.3	51.0	54.0
22	27.3	21.8	20.0	60	85.3	56.0	58.0
24	29.3	25.8	23.0	62	87.3	57.0	60.0
26	31.3	25.8	26.0	64	89.3	57.0	62.0
28	33.3	25.8	26.0	68	93.3	62.0	66.0
30	35.3	26.8	26.0	80	113.3	76.0	76.0
32	37.3	31.8	30.0	100	133.3	90.0	96.0
34	39.3	35.8	33.0				

## ORDER INFORMATION

Bestell Code/Order Code: PV - 1 - 2,0

1 = Polzahl / No. of contacts (06 - 100)

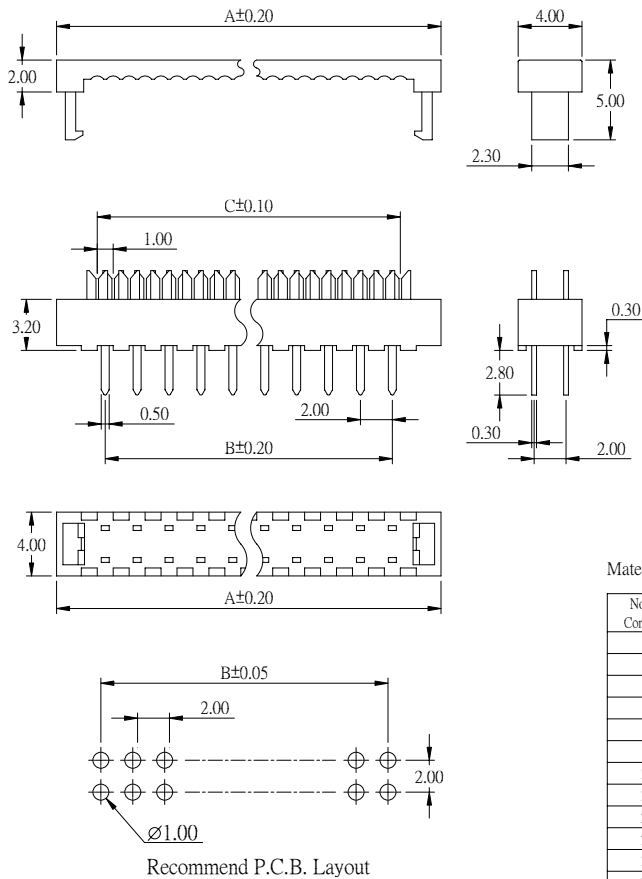
# DIP PLUG 2.0 mm

## SPECIFICATION

Current Rate: 1 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min  
 Contact Resistance: 30m  $\Omega$  Max  
 Dielectric voltage: 500V AC for one minute  
 Operation Temperature: -55°C to +105°C

## MATERIAL

Insulator: PBT+30% Glass Fiber6T(UL94V-0)  
 Contact Pin: Phosphor Bronze



Mate flat cable 1.0 mm

No. of Contacts	Dim. A	Dim. B	Dim. C	No. of Contacts	Dim. A	Dim. B	Dim. C
8	12.10	6.00	7.00	36	40.10	34.00	35.00
10	14.10	8.00	9.00	38	42.10	36.00	37.00
12	16.10	10.00	11.00	40	44.10	38.00	39.00
14	18.10	12.00	13.00	42	46.10	40.00	41.00
16	20.10	14.00	15.00	44	48.10	42.00	43.00
18	22.10	16.00	17.00	46	50.10	44.00	45.00
20	24.10	18.00	19.00	48	52.10	46.00	47.00
22	26.10	20.00	21.00	50	54.10	48.00	49.00
24	28.10	22.00	23.00	52	56.10	50.00	51.00
26	30.10	24.00	25.00	54	58.10	52.00	53.00
28	32.10	26.00	27.00	56	60.10	54.00	55.00
30	34.10	28.00	29.00	58	62.10	56.00	57.00
32	36.10	30.00	31.00	60	64.10	58.00	59.00
34	38.10	32.00	33.00				

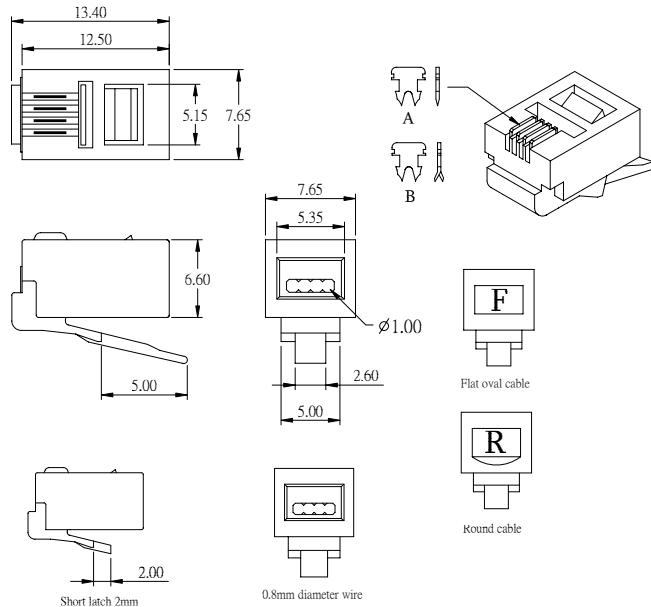
## ORDER INFORMATION

Bestell Code/Order Code: LPV -  $\boxed{1}$  - 2,0

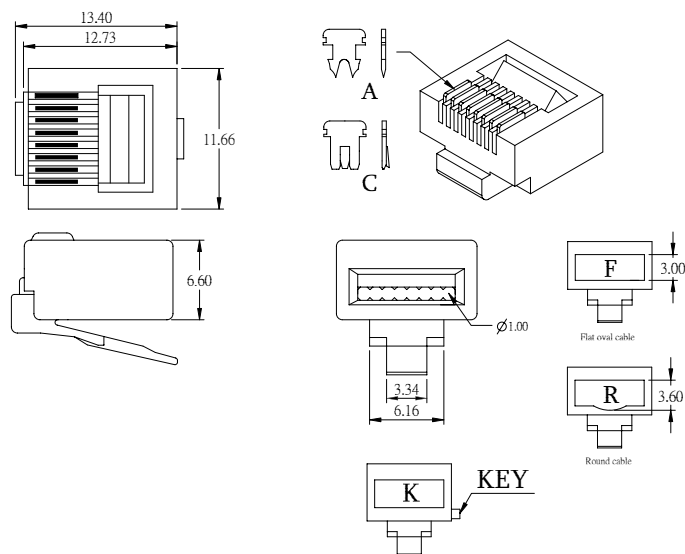
$\boxed{1}$  = Polzahl / No. of contacts (08 - 60)

# MODULAR PLUG 4/8 POSITION

**MATERIAL & FINISH**  
 HOUSING: PC. UL94V-2  
 CONTACT: COPPER ALLOY  
 PLATED WITH GOLD.



## MODULAR PLUG 4 POSITION



## MODULAR PLUG 8 POSITION



## ORDER INFORMATION

**Bestell Code/Order Code:** Modular Plug 4 p - **1**

Modular Plug 8 p - **1**

**1** = Polzahl / No. of contacts (2 C, 4 C, 6 C, 8 C)

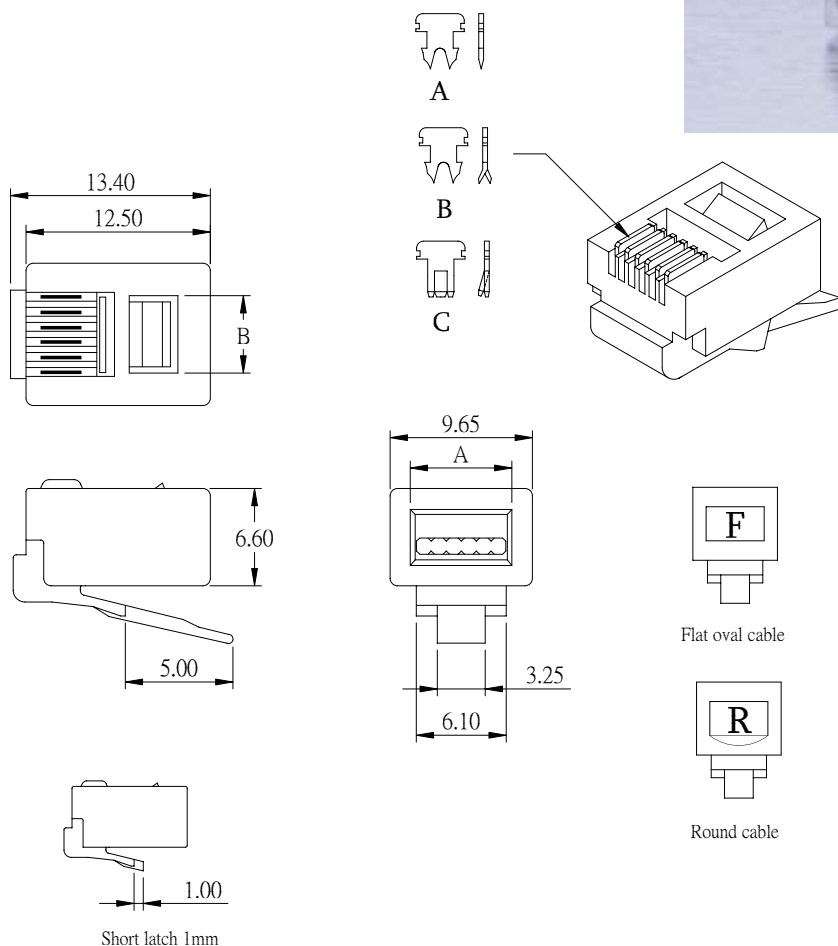


# MODULAR PLUG 6 POSITION

## MATERIAL & FINISH

HOUSING: PC. UL94V-2

CONTACT: COPPER ALLOY  
PLATED WITH GOLD.



	A	B
6P2C	5.20	5.10
6P4C	5.20	5.10
6P6C	7.10	6.20

## ORDER INFORMATION

Bestell Code/Order Code: Modular Plug 6 p -  $\boxed{1}$

$\boxed{1}$  = Polzahl / No. of contacts (2 C, 4 C, 6 C)

# STAMPED PIN IC SOCKET CONNECTOR PITCH 2.54 mm

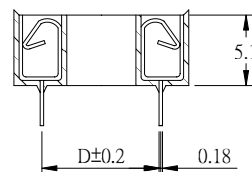
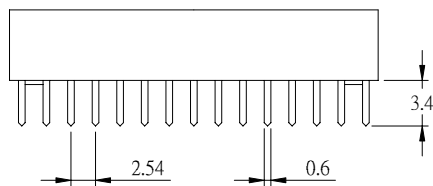
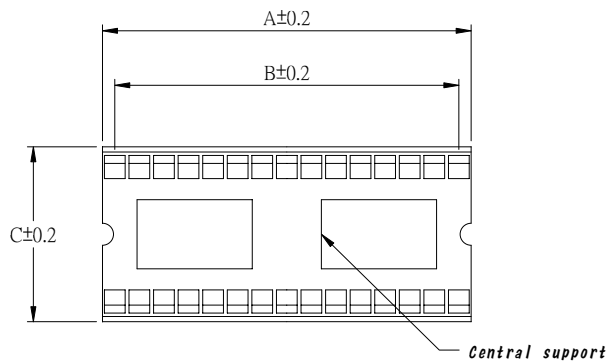


## SPECIFICATION

Current Rate: 1 AMP  
 Insulation Resistance: 5000M  $\Omega$  Min  
 Contact Resistance: 20m  $\Omega$  Max  
 Dielectric voltage: 1000V AC for one minute  
 Operation Temperature: -55°C to +150°C

## MATERIAL

Insulator: UL 94V-0  
 Contact Pin: Phosphor Bronze



A, B, C, D Tolerance is  $\pm 0.2$

No. of	6	8	14	16	18	20	22	24N	28N	32N	24W	28W	32W	40	48
A	7.62	10.16	17.78	20.32	22.86	25.40	27.94	30.48	35.56	40.64	30.48	35.56	40.64	50.80	60.96
B	5.08	7.62	15.24	17.78	20.32	22.86	25.40	27.94	33.02	38.10	27.94	33.02	38.10	48.26	58.42
C	10.00											17.50			
D	7.62											15.24			
	IC1-3XX											IC1-6XX			

## ORDER INFORMATION

Bestell Code/Order Code: IC Fassung - **1** - **2**

**1** = Polzahl / No. of contacts (06-48)

**2** = 7,62 / 15,24

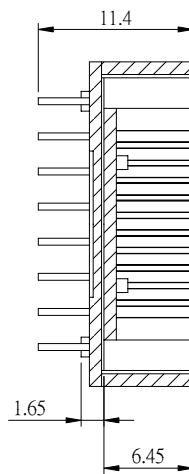
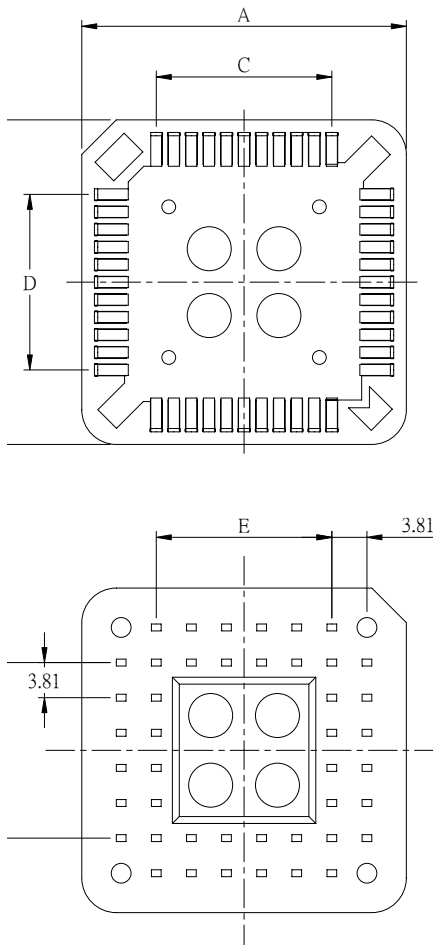
# PLCC SOCKET THROUGH HOLE TYPE

## SPECIFICATION

Current Rate:1 AMP  
 Insulation Resistance:1000M  $\Omega$  Min  
 Contact Resistance:30m  $\Omega$  Max  
 Dielectric voltage:600V AC for one minute  
 Operation Temperature:-50°C to +105°C

## MATERIAL

Insulator:Hi-temp PPS, UL 94V-0  
 Contact material:Phorphos Bronze Jis 5210  
 contact Platred:150U" tin over 40U" nickel



No. of contactst	A $\pm$ 0.15	B $\pm$ 0.15	C $\pm$ 0.1	D $\pm$ 0.1	E $\pm$ 0.1	F $\pm$ 0.1
20 <sup>PPS</sup> <sub>PBT</sub>	15.50	15.50	5.08	5.08	5.08	5.08
28 <sup>PPS</sup> <sub>PBT</sub>	18.04	18.04	7.62	7.62	7.62	7.62
32 <sup>PPS</sup> <sub>PBT</sub>	18.04	20.60	7.62	10.16	7.62	10.16
44 <sup>PPS</sup> <sub>PBT</sub>	23.48	23.48	12.70	12.70	12.70	12.70
52 <sup>PPS</sup> <sub>PBT</sub>	25.88	25.88	15.24	15.24	15.24	15.24
68 PPS	31.04	31.04	20.32	20.32	20.32	20.32
84 PPS	36.04	36.04	25.40	25.40	25.40	25.40
68 PBT	31.66	31.66	20.32	20.32	20.32	20.32
84 PBT	36.66	36.66	25.40	25.40	25.40	25.40

## ORDER INFORMATION

Bestell Code/Order Code: PLCC Fassung - **1**

**1** = Polzahl / No. of contacts (20-84)

# PLCC SOCKET SURFACE MOUNT

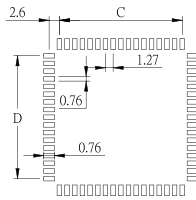
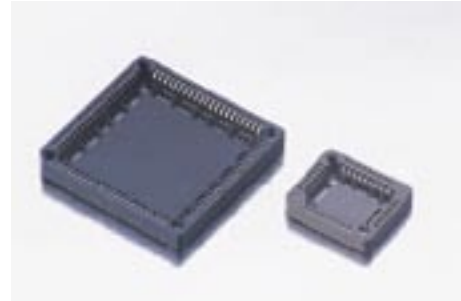
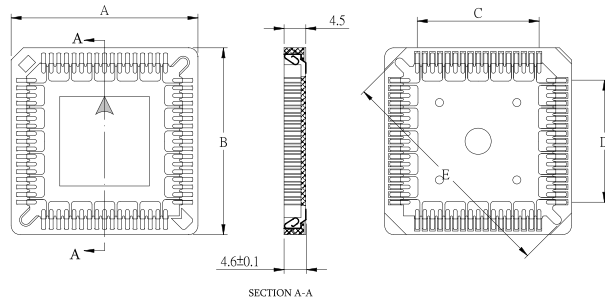


## SPECIFICATION

Current Rate: 1 AMP  
 Insulation Resistance: 1000M  $\Omega$  Min  
 Contact Resistance: 30m  $\Omega$  Max  
 Dielectric voltage: 600V AC for one minute  
 Operation Temperature: -50°C to +105°C

## MATERIAL

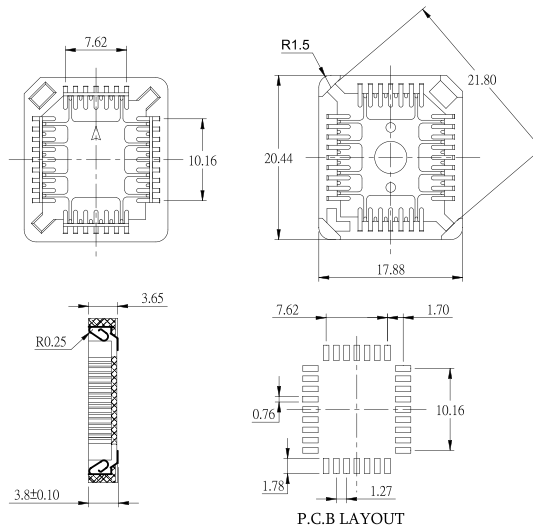
Insulator: Hi-temp PPS. UL 94V-0  
 Contact material: Phosphor Bronze Jis 5210  
 contact Plated: 150U" tin over 40U" nickel



P.C.B LAYOUT

No. of contact	A <sub>1</sub> ∅0.2	B <sub>1</sub> ∅0.2	C <sub>1</sub> ∅0.1	D <sub>1</sub> ∅0.1	E <sub>1</sub> ∅0.2
20	15.66	15.66	5.08	5.08	17.28
28	18.20	18.20	7.62	7.62	20.87
32	18.20	20.74	7.62	10.16	22.60
44	23.28	23.28	12.70	12.70	28.30
52	25.82	25.82	15.24	15.24	31.65
68	30.90	30.90	20.32	20.32	38.83
84	35.98	35.98	25.40	25.40	46.00

**SLIM TYPE**  
 Part No.: SPLCCS-32TX



P.C.B LAYOUT

## ORDER INFORMATION

Bestell Code/Order Code: PLCC Fassung SMD - [1]

[1] = Polzahl / No. of contacts (20-84)