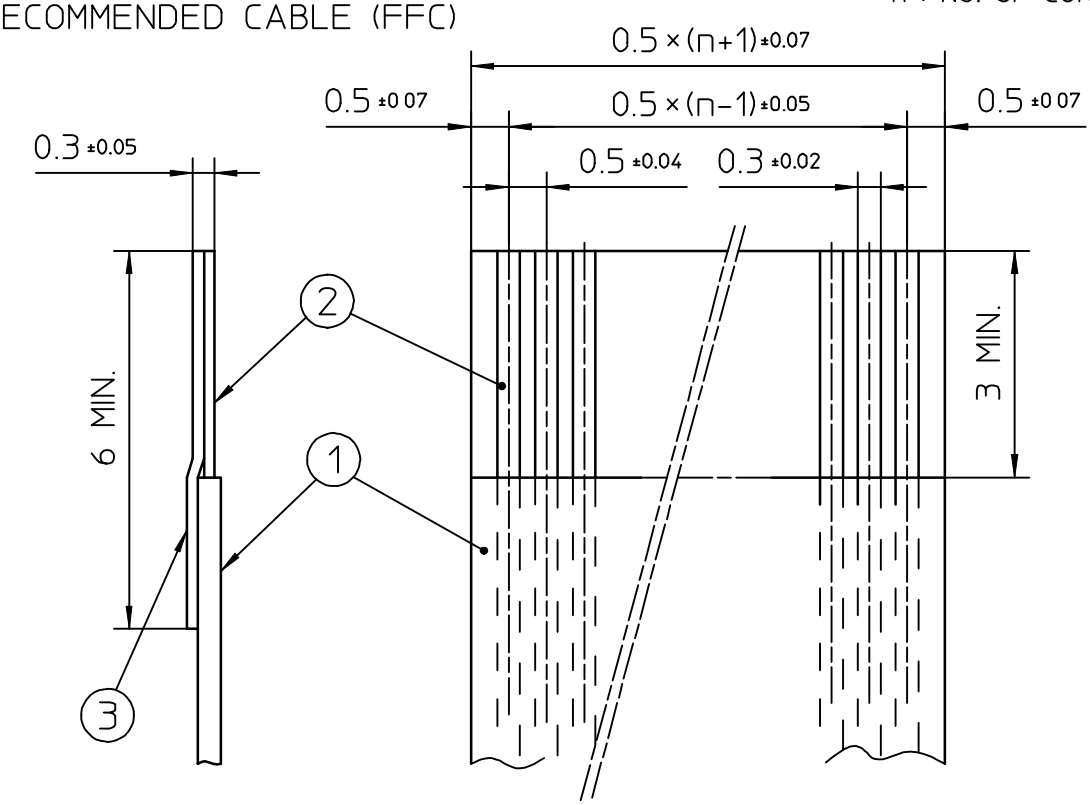
25-05182 SFV6R-2STE1LF

n : NO. OF CONTACTS

RECOMMENDED CABLE (FFC)



KIND OF FFC (NOTE3)	DIMENSIONAL TOLERANCE			
	a	b	c	d
1	±0.07	±0.04	±0.05	±0.02
2	±0.1	±0.03	±0.03	±0.025

PT. NO.	PARTS NAME	MATERIAL	NOTE
1	INSULATOR	FLAME RESISTING POLYESTER OR EQUAL	———
2	CONDUCTOR	COPPER FOIL:THICKNESS 35 OR 50 μm	PLATING : TIN OR SOLDER 1 μm MIN.
3	SUPPORTING TAPE	FLAME RESISTING POLYESTER OR EQUAL	———

NOTES

1. NO BURR AT EACH PORTION.
2. NO PEELING IN COMMON USE.
3. EITHER KIND1 OR KIND2 OF FFC CAN ACCEPT DIMENSIONAL TOLERANCE a,b,c AND d.

REV.	DATE	DESCRIPTION	DWN.	APPD.

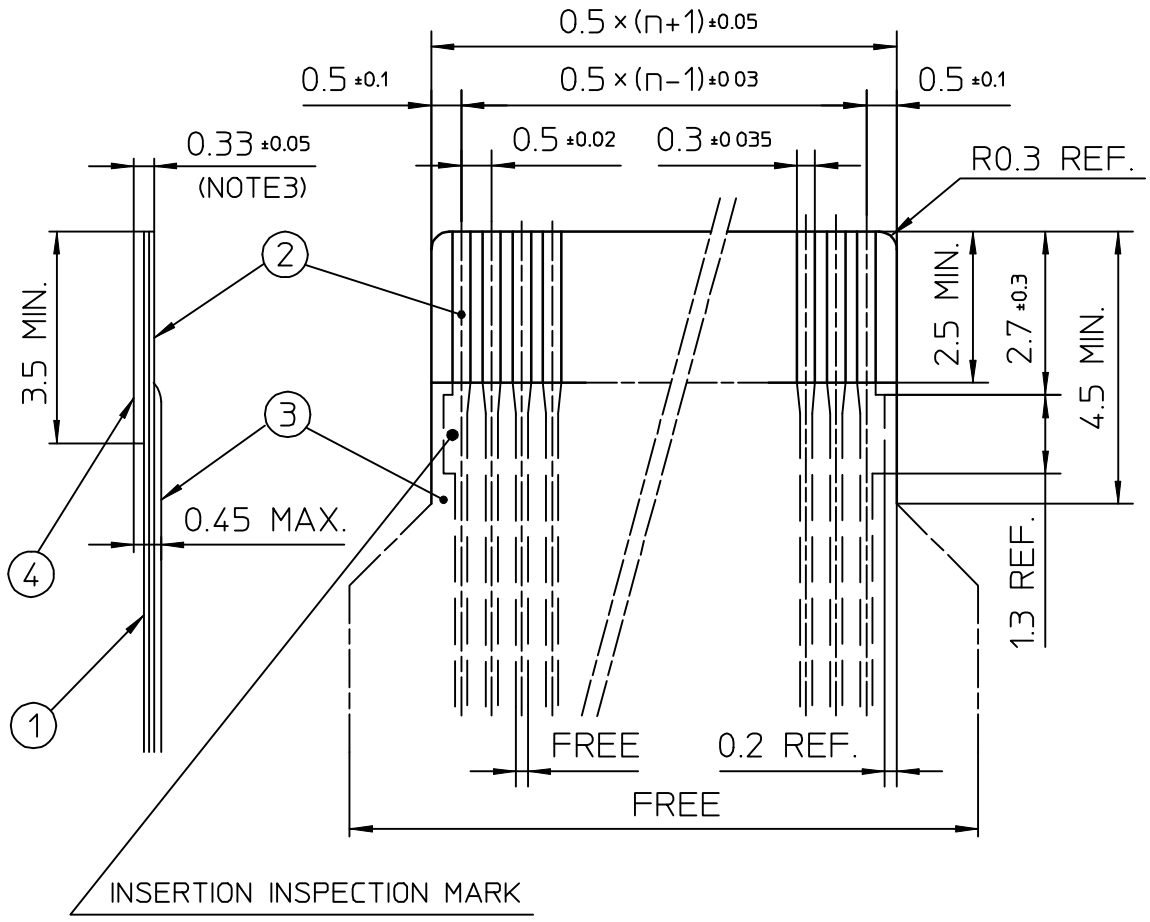
SCALE ℵ
DIM. IN mm
DESIGNED
DRAWN
CHECKED
APPROVED
DATE

RECOMMENDED CABLE
CAT NO.
SFV__R-1/2ST__
DRAWING NO
JSA 92457
REV

DF-136
REV.B

RECOMMENDED CABLE (FPC)

n · NO. OF CONTACTS



PT. NO.	PARTS NAME	MATERIAL	THICKNESS(μm)
1	BASE FILM	POLYIMIDE OR POLYESTER OR EQUAL	25
2	CONDUCTOR	COPPER FOIL(PLATING : SOLDER 1μm MIN.)	35
3	OVERLAY	POLYIMIDE OR POLYESTER OR EQUAL	——
4	SUPPORTING TAPE	POLYESTER OR POLYIMIDE OR EQUAL	188

NOTES

1. NO BURR AT EACH PORTION
2. NO PEELING IN COMMON USE.
3. TOTAL THICKNESS LIMIT OF EACH MATERIAL (INCLUDING ADHESIVE AGENT) IS SPECIFIED.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE	X
DIM. IN	mm
DESIGNED	
DRAWN	
CHECKED	
APPROVED	
DATE	

RECOMMENDED CABLE

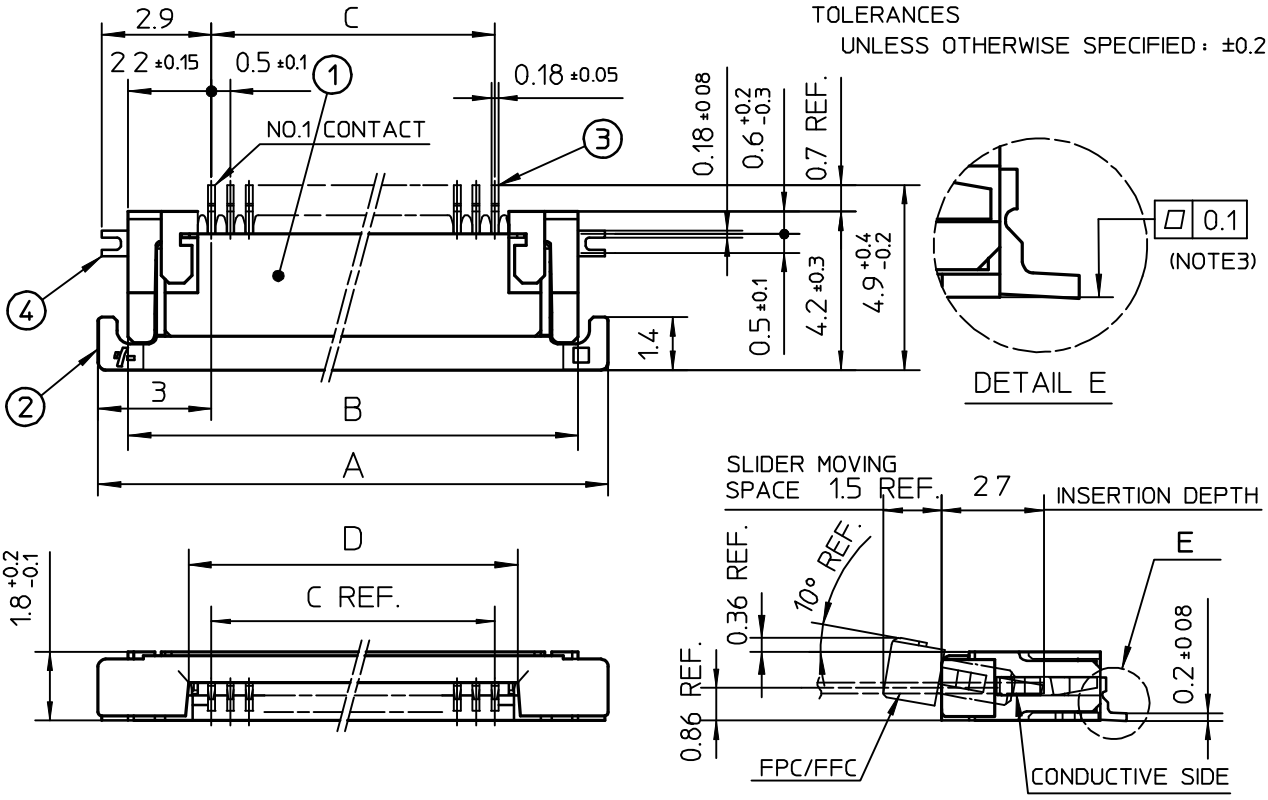
CAT NO.

SFV__R-1/2ST__

DRAWING NO	REV
JSA 92456	

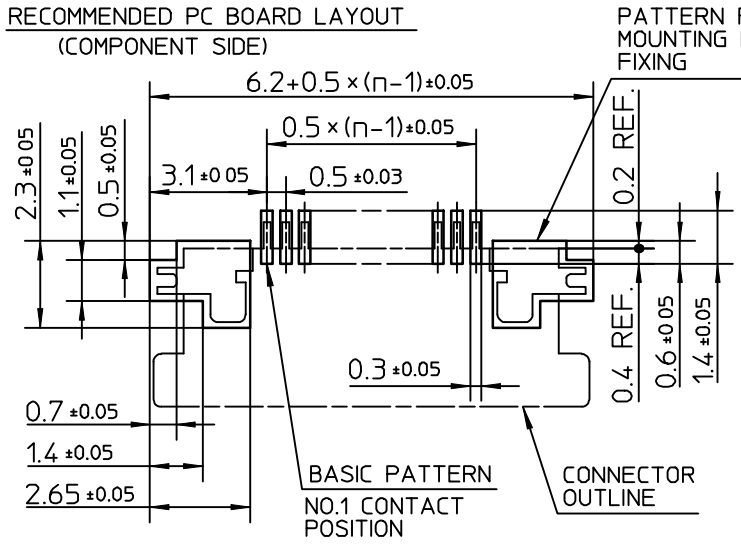
DF-136
REV.B

FCI



PT. NO	PARTS NAME	MATERIAL	Q'TY	NOTE
1	HOUSING	POLYAMIDE RESIN GLASS REINFORCED (UL94V-0)	1	COLOR : BLACK
2	SLIDER	PPS RESIN GLASS REINFORCED (UL94V-0)	1	COLOR : BROWN
3	CONTACT	PHOSPHOR BRONZE	n	PLATING : TIN ALLOY
4	MOUNTING PLATE		2	

n : NO. OF CONTACTS



NOTES

1. THIS PRODUCT IS THE CONNECTOR USED FOR FPC/FFC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. THIS PRODUCT IS LOWER CONTACT TYPE CONNECTOR
3. FLATNESS OF CONTACT TERMINAL AND MOUNTING PLATE MUST BE WITHIN TOLERANCE IN E PORTION DETAILED DRAWING.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE	X
DIM. IN	mm
DESIGNED	
DRAWN	
CHECKED	
APPROVED	
DATE	

CONNECTOR USED FOR FPC/FFC WITH 0.5 MM CONTACT SPACING

CAT NO.

SFV__R-1ST__

DRAWING NO	REV
JSA 92451	

DF-136
REV.B

CAT. NO. & DIMENSIONS

NO OF CONTACTS (n)	CAT. NO.	DIMENSIONS (NOTE2)			
		A ± 0.2	B ± 0.2	C ± 0.1	D ± 0.1
4	SFV4R-1/2ST__	7.5	5.9	1.5	2.7
5	SFV5R-1/2ST	8.0	6.4	2.0	3.2
6	SFV6R-1/2ST__	8.5	6.9	2.5	3.7
7	SFV7R-1/2ST__	9.0	7.4	3.0	4.2
8	SFV8R-1/2ST__	9.5	7.9	3.5	4.7
9	SFV9R-1/2ST__	10.0	8.4	4.0	5.2
10	SFV10R-1/2ST__	10.5	8.9	4.5	5.7
11	SFV11R-1/2ST__	11.0	9.4	5.0	6.2
12	SFV12R-1/2ST__	11.5	9.9	5.5	6.7
13	SFV13R-1/2ST__	12.0	10.4	6.0	7.2
14	SFV14R-1/2ST__	12.5	10.9	6.5	7.7
15	SFV15R-1/2ST__	13.0	11.4	7.0	8.2
16	SFV16R-1/2ST__	13.5	11.9	7.5	8.7
17	SFV17R-1/2ST__	14.0	12.4	8.0	9.2
18	SFV18R-1/2ST__	14.5	12.9	8.5	9.7
19	SFV19R-1/2ST__	15.0	13.4	9.0	10.2
20	SFV20R-1/2ST__	15.5	13.9	9.5	10.7
21	SFV21R-1/2ST__	16.0	14.4	10.0	11.2
22	SFV22R-1/2ST__	16.5	14.9	10.5	11.7
23	SFV23R-1/2ST__	17.0	15.4	11.0	12.2
24	SFV24R-1/2ST__	17.5	15.9	11.5	12.7
25	SFV25R-1/2ST__	18.0	16.4	12.0	13.2
26	SFV26R-1/2ST__	18.5	16.9	12.5	13.7
27	SFV27R-1/2ST__	19.0	17.4	13.0	14.2
28	SFV28R-1/2ST__	19.5	17.9	13.5	14.7
29	SFV29R-1/2ST__	20.0	18.4	14.0	15.2
30	SFV30R-1/2ST__	20.5	18.9	14.5	15.7
31	SFV31R-1/2ST__	21.0	19.4	15.0	16.2
32	SFV32R-1/2ST__	21.5	19.9	15.5	16.7
33	SFV33R-1/2ST__	22.0	20.4	16.0	17.2
34	SFV34R-1/2ST__	22.5	20.9	16.5	17.7
35	SFV35R-1/2ST__	23.0	21.4	17.0	18.2

CAT NO. SFV (n) R - 1 ST __

- SERIES NAME
- NO OF CONTACTS
- RIGHT ANGLE TYPE
- FOR FPC/FFC, CONTACT DIRECTION
  1. LOWER CONTACT TYPE
  2. UPPER CONTACT TYPE
- FOR AUTOMATIC MOUNTING (SMT)
- PACKAGE STYLE

NOTES

1. THIS PRODUCT IS THE CONNECTOR USED FOR FPC/FFC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. SEE PART DRAWINGS FOR DIMENSIONS A~D.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE	X
DIM. IN	mm
DESIGNED	
DRAWN	
CHECKED	
APPROVED	
DATE	

CAT NO. TABLE FOR 0.5 mm CONTACT SPACING CONNECTOR

CAT NO.

SFV__R-1/2ST__

DRAWING NO	REV
JSA 92450	

DF-136 REV.B

FCI

CAT. NO. & DIMENSIONS

NO. OF CONTACTS (n)	CAT. NO.	DIMENSIONS (NOTE3)		
		F ± 5	G ± 0.3	H ± 0.1
4	SFV4R-1/2STE1	20.4	16	—
5	SFV5R-1/2STE1	20.4	16	—
6	SFV6R-1/2STE1	20.4	16	—
7	SFV7R-1/2STE1	28.4	24	—
8	SFV8R-1/2STE1	28.4	24	—
9	SFV9R-1/2STE1	28.4	24	—
10	SFV10R-1/2STE1	28.4	24	—
11	SFV11R-1/2STE1	28.4	24	—
12	SFV12R-1/2STE1	28.4	24	—
13	SFV13R-1/2STE1	28.4	24	—
14	SFV14R-1/2STE1	28.4	24	—
15	SFV15R-1/2STE1	28.4	24	—
16	SFV16R-1/2STE1	28.4	24	—
17	SFV17R-1/2STE1	28.4	24	—
18	SFV18R-1/2STE1	28.4	24	—
19	SFV19R-1/2STE1	28.4	24	—
20	SFV20R-1/2STE1	28.4	24	—
21	SFV21R-1/2STE1	28.4	24	—
22	SFV22R-1/2STE1	28.4	24	—
23	SFV23R-1/2STE1	36.4	32	28.4
24	SFV24R-1/2STE1	36.4	32	28.4
25	SFV25R-1/2STE1	36.4	32	28.4
26	SFV26R-1/2STE1	36.4	32	28.4
27	SFV27R-1/2STE1	36.4	32	28.4
28	SFV28R-1/2STE1	36.4	32	28.4
29	SFV29R-1/2STE1	36.4	32	28.4
30	SFV30R-1/2STE1	36.4	32	28.4
31	SFV31R-1/2STE1	48.4	44	40.4
32	SFV32R-1/2STE1	48.4	44	40.4
33	SFV33R-1/2STE1	48.4	44	40.4
34	SFV34R-1/2STE1	48.4	44	40.4
35	SFV35R-1/2STE1	48.4	44	40.4

CAT. NO. SFV (n) R - 1 ST E1

- SERIES NAME
- NO. OF CONTACTS
- RIGHT ANGLE TYPE
- FOR FPC/FFC, CONTACT DIRECTION
  - 1. LOWER CONTACT TYPE
  - 2 UPPER CONTACT TYPE
- FOR AUTOMATIC MOUNTING (SMT)
- TAPE PACKAGING

NOTES

1. THIS PRODUCT IS THE CONNECTOR USED FOR FPC/FFC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. THIS CATALOG NO. INDICATES PLASTIC TAPE PACKAGED CONNECTOR.
3. SEE PART DRAWINGS FOR DIMENSIONS F~H.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE	X
DIM. IN	mm
DESIGNED	
DRAWN	
CHECKED	
APPROVED	
DATE	

CAT NO TABLE FOR PLASTIC TAPE PACKAGED 0.5 mm CONTACT SPACING CONNECTOR

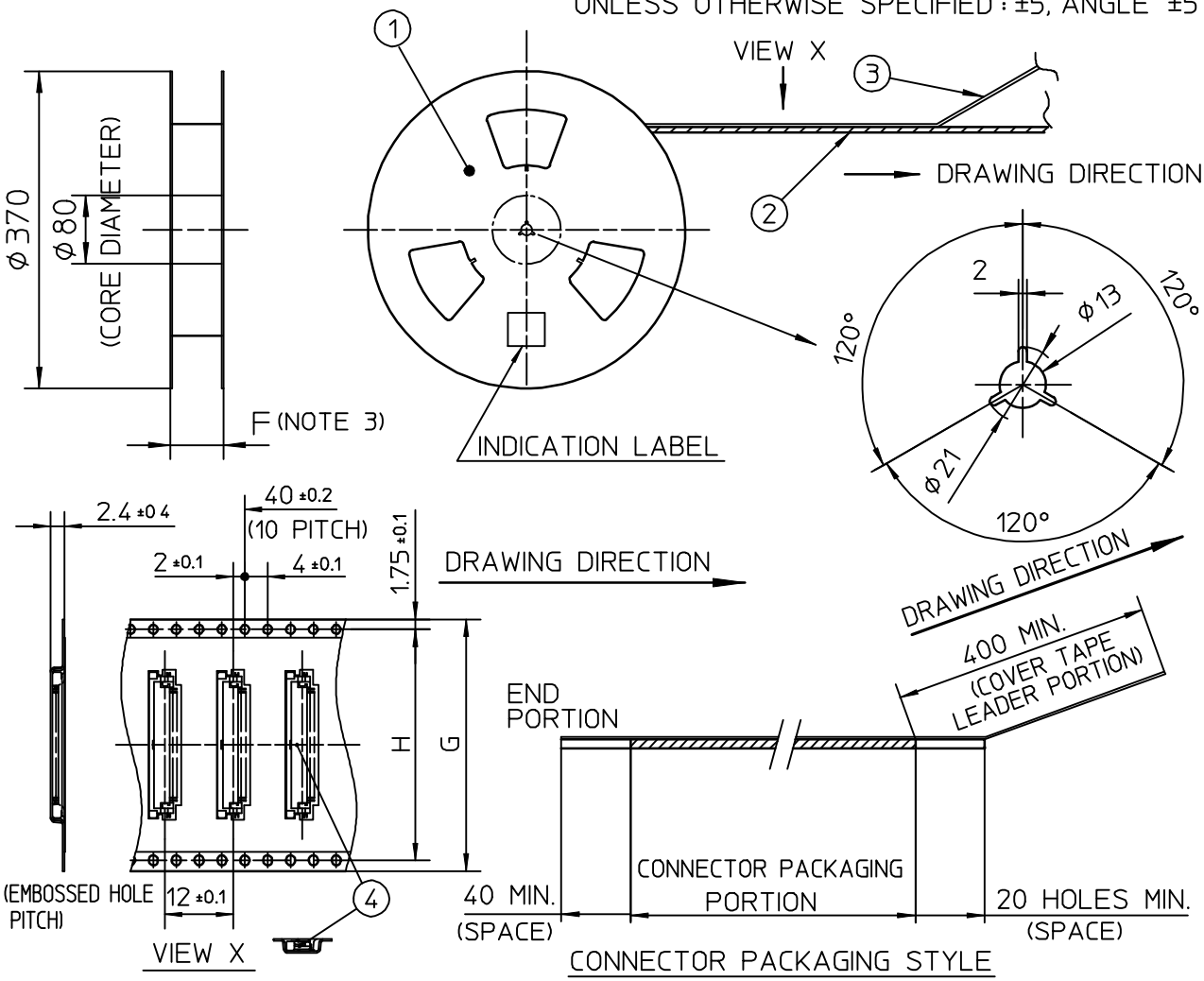
CAT NO.

SFV__R-1/2STE1

DRAWING NO	REV
JSA 92453	

DF-136 REV.B

TOLERANCES
UNLESS OTHERWISE SPECIFIED : ±5, ANGLE ±5°



PT. NO.	PARTS NAME	CAT. NO.	MATERIAL	Q'TY	NOTE
1	REEL	———	CARDBOARD	1	COLOR : WHITE
2	PLASTIC (EMBOSS) TAPE	———	A-PET	——	COLOR : TRANSPARENCY
3	COVER	———	POLYESTER	——	COLOR : TRANSPARENCY
4	CONNECTOR	SFV__R-1ST__	SEE ATTACHED DWG.	3000	LOWER CONTACT TYPE

NOTES

1. THIS IS PLASTIC TAPE PACKAGED CONNECTOR USED FOR FPC/FFC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. SEE JIS C 0806 (PACKING OF ELECTRONIC COMPONENTS ON CONTINUOUS TAPES (SURFACE MOUNTING DEVICES)) FOR SHAPE AND DIMENSIONS OF PLASTIC (EMBOSS) TAPE AND REEL.
3. F DIMENSION IS PORTION OF THE CORE.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE X
DIM. IN mm
DESIGNED
DRAWN
CHECKED
APPROVED
DATE

PLASTIC TAPE PACKAGED
0.5 mm CONTACT SPACING CONNECTOR

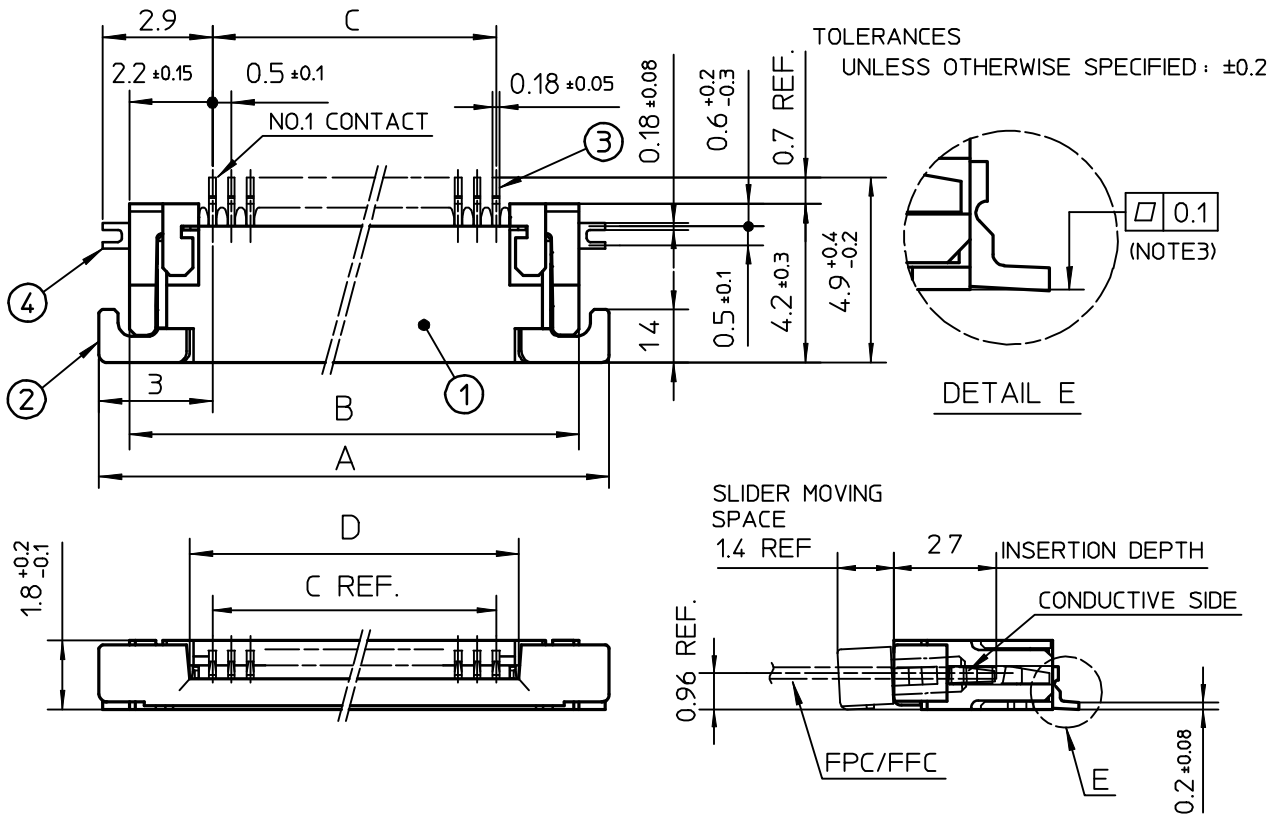
CAT NO.
SFV__R-1STE1

DRAWING NO
JSA 92454

REV

DF-136
REV.B

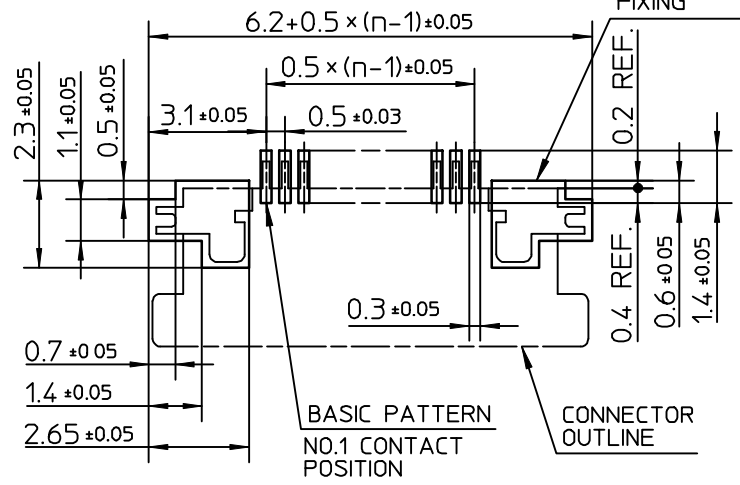
FCI



PT. NO.	PARTS NAME	MATERIAL	Q'TY	NOTE
1	HOUSING	POLYAMIDE RESIN GLASS REINFORCED (UL94V-0)	1	COLOR : BLACK
2	SLIDER	PPS RESIN GLASS REINFORCED (UL94V-0)	1	COLOR : BROWN
3	CONTACT	PHOSPHOR BRONZE	n	PLATING : TIN ALLOY
4	MOUNTING PLATE		2	

n : NO. OF CONTACTS

RECOMMENDED PC BOARD LAYOUT
(COMPONENT SIDE)



NOTES

1. THIS PRODUCT IS THE CONNECTOR USED FOR FPC/FFC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. THIS PRODUCT IS UPPER CONTACT TYPE CONNECTOR
3. FLATNESS OF CONTACT TERMINAL AND MOUNTING PLATE MUST BE WITHIN TOLERANCE IN E PORTION DETAILED DRAWING.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE X
DIM. IN mm
DESIGNED
DRAWN
CHECKED
APPROVED
DATE

CONNECTOR USED FOR FPC/FFC WITH 0.5 MM CONTACT SPACING

CAT NO.

SFV__R-2ST__

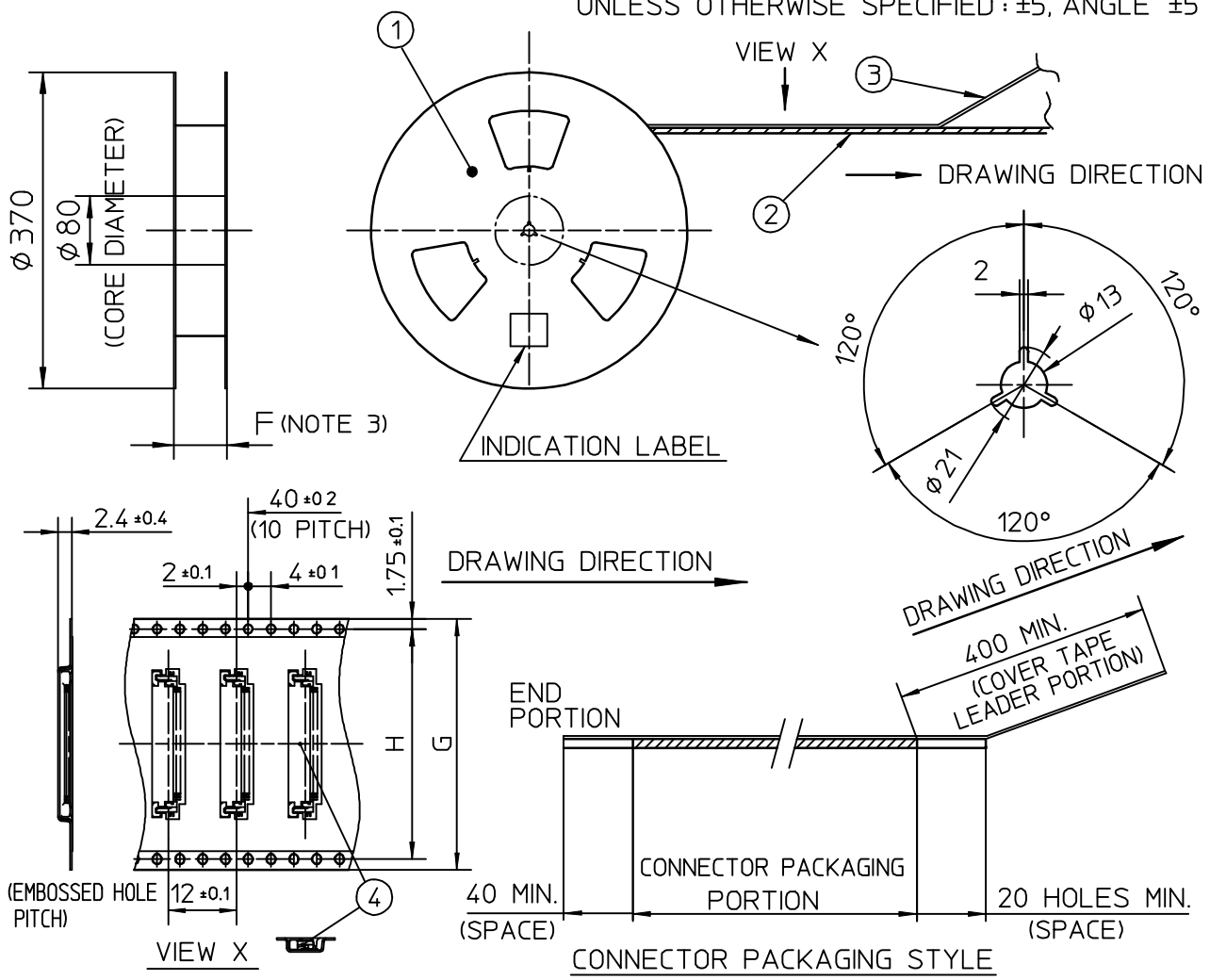
DRAWING NO | REV

JSA 92452

DF-136
REV.B

FCI

TOLERANCES
UNLESS OTHERWISE SPECIFIED : ±5, ANGLE ±5°



PT. NO	PARTS NAME	CAT. NO.	MATERIAL	Q'TY	NOTE
1	REEL	————	CARDBOARD	1	COLOR : WHITE
2	PLASTIC (EMBOSS) TAPE	————	A-PET	——	COLOR : TRANSPARENCY
3	COVER	————	POLYESTER	——	COLOR : TRANSPARENCY
4	CONNECTOR	SFV__R-2ST__	SEE ATTACHED DWG.	3000	UPPER CONTACT TYPE

NOTES

1. THIS IS PLASTIC TAPE PACKAGED CONNECTOR USED FOR FPC/FFC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. SEE JIS C 0806 (PACKING OF ELECTRONIC COMPONENTS ON CONTINUOUS TAPES (SURFACE MOUNTING DEVICES)) FOR SHAPE AND DIMENSIONS OF PLASTIC (EMBOSS) TAPE AND REEL
3. F DIMENSION IS PORTION OF THE CORE.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE X
DIM. IN mm
DESIGNED
DRAWN
CHECKED
APPROVED
DATE

PLASTIC TAPE PACKAGED
0.5 mm CONTACT SPACING CONNECTOR

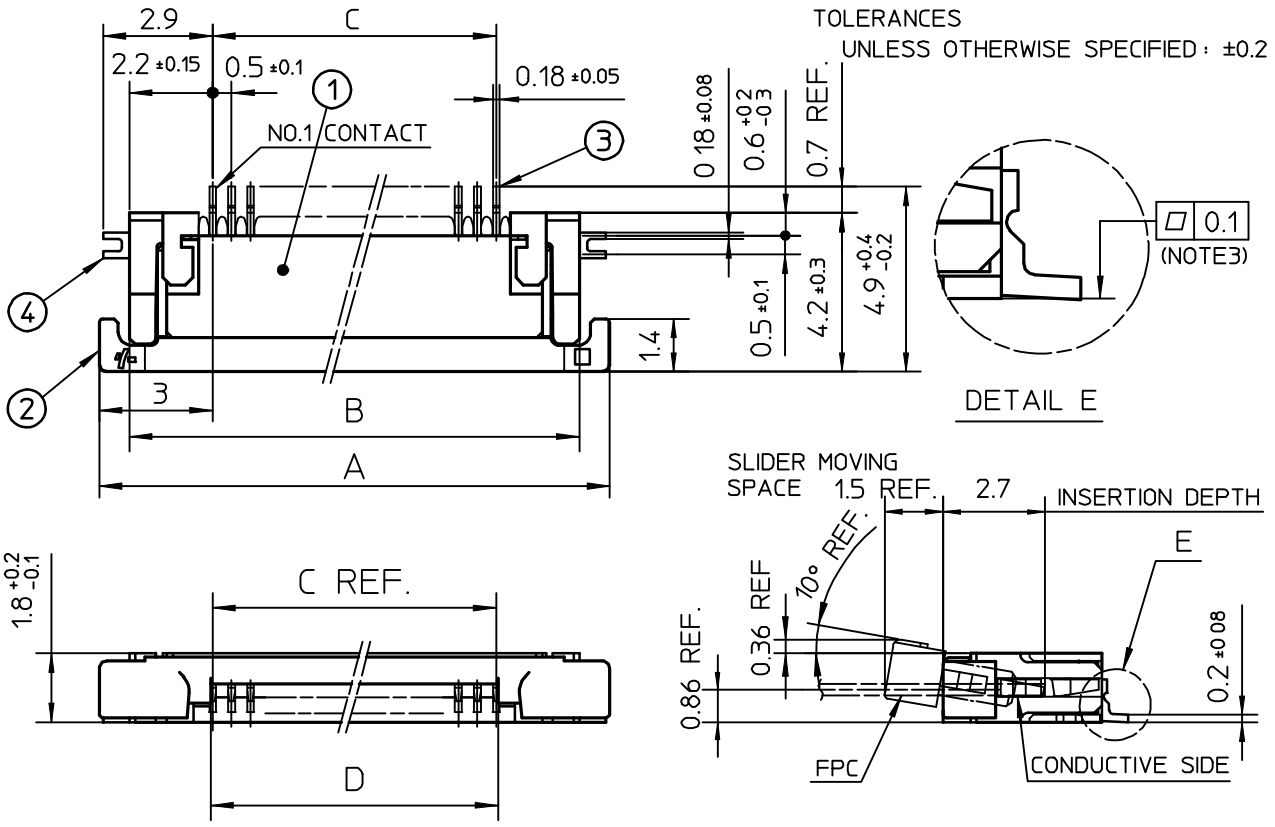
CAT NO.
SFV__R-2STE1

DRAWING NO
JSA 92455

REV

DF-136
REV.B

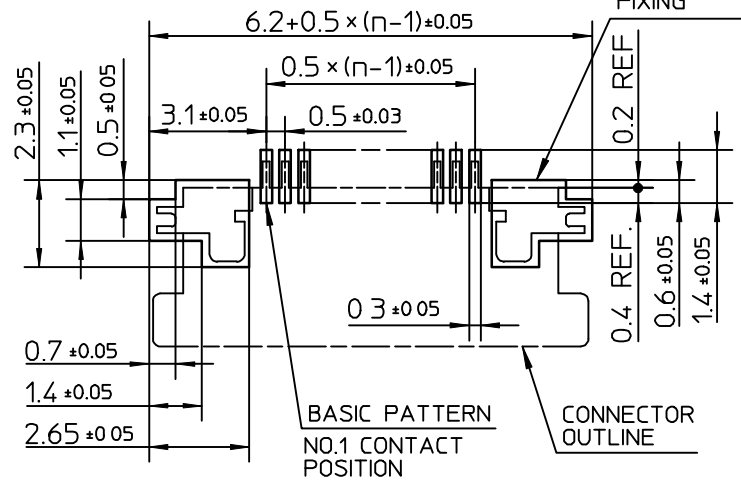
FCI



PT. NO.	PARTS NAME	MATERIAL	Q'TY	NOTE
1	HOUSING	POLYAMIDE RESIN GLASS REINFORCED (UL94V-0)	1	COLOR : BLACK
2	SLIDER	PPS RESIN GLASS REINFORCED (UL94V-0)	1	COLOR : BLACK
3	CONTACT	PHOSPHOR BRONZE	n	PLATING : TIN ALLOY
4	MOUNTING PLATE		2	

n : NO. OF CONTACTS

RECOMMENDED PC BOARD LAYOUT
(COMPONENT SIDE)



NOTES

1. THIS PRODUCT IS THE CONNECTOR USED FOR FPC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. THIS PRODUCT IS LOWER CONTACT TYPE CONNECTOR WITH CABLE LOCK MECHANISM.
3. FLATNESS OF CONTACT TERMINAL AND MOUNTING PLATE MUST BE WITHIN TOLERANCE IN E PORTION DETAILED DRAWING.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE X
DIM. IN mm
DESIGNED
DRAWN
CHECKED
APPROVED
DATE

CONNECTOR USED FOR FPC WITH 0.5 MM CONTACT SPACING

CAT NO.

SFV__R-3ST__

DRAWING NO: JSA 92601

REV:

DF-136
REV.B

FCI

CAT. NO. & DIMENSIONS

NO OF CONTACTS (n)	CAT NO	DIMENSIONS (NOTE2)			
		A ± 0.2	B ± 0.2	C ± 0.1	D ± 0.1
4	SFV 4 R-3/4ST__	7.5	5.9	1.5	1.6
5	SFV 5 R-3/4ST__	8.0	6.4	2.0	2.1
6	SFV 6 R-3/4ST__	8.5	6.9	2.5	2.6
7	SFV 7 R-3/4ST__	9.0	7.4	3.0	3.1
8	SFV 8 R-3/4ST__	9.5	7.9	3.5	3.6
9	SFV 9 R-3/4ST__	10.0	8.4	4.0	4.1
10	SFV10 R-3/4ST__	10.5	8.9	4.5	4.6
11	SFV11 R-3/4ST__	11.0	9.4	5.0	5.1
12	SFV12 R-3/4ST__	11.5	9.9	5.5	5.6
13	SFV13 R-3/4ST__	12.0	10.4	6.0	6.1
14	SFV14 R-3/4ST__	12.5	10.9	6.5	6.6
15	SFV15 R-3/4ST__	13.0	11.4	7.0	7.1
16	SFV16 R-3/4ST__	13 5	11.9	7.5	7.6
17	SFV17 R-3/4ST__	14 0	12.4	8.0	8 1
18	SFV18 R-3/4ST__	14 5	12.9	8.5	8.6
19	SFV19 R-3/4ST__	15 0	13.4	9.0	9 1
20	SFV20R-3/4ST__	15 5	13.9	9.5	9.6
21	SFV21R-3/4ST__	16 0	14.4	10.0	10 1
22	SFV22R-3/4ST__	16.5	14.9	10.5	10.6
23	SFV23R-3/4ST__	17.0	15.4	11.0	11.1
24	SFV24R-3/4ST__	17.5	15.9	11.5	11.6
25	SFV25R-3/4ST__	18.0	16.4	12.0	12.1
26	SFV26R-3/4ST__	18.5	16.9	12.5	12.6
27	SFV27R-3/4ST__	19.0	17.4	13.0	13.1
28	SFV28R-3/4ST__	19.5	17.9	13.5	13.6
29	SFV29R-3/4ST__	20.0	18.4	14.0	14.1
30	SFV30R-3/4ST__	20.5	18.9	14.5	14.6
31	SFV31R-3/4ST__	21.0	19.4	15.0	15.1
32	SFV32R-3/4ST__	21.5	19.9	15.5	15.6
33	SFV33R-3/4ST__	22.0	20.4	16.0	16.1
34	SFV34R-3/4ST__	22.5	20.9	16.5	16.6
35	SFV35R-3/4ST__	23.0	21.4	17.0	17.1

CAT. NO. SFV (n) R - 3 ST __

- SERIES NAME
- NO. OF CONTACTS
- RIGHT ANGLE TYPE
- FOR FPC, WITH CABLE LOCK MECHANISM
- CONTACT DIRECTION
  - 3: LOWER CONTACT TYPE
  - 4: UPPER CONTACT TYPE
- FOR AUTOMATIC MOUNTING (SMT)
- PACKAGE STYLE

NOTES

1. THIS PRODUCT IS THE CONNECTOR USED FOR FPC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. SEE PART DRAWINGS FOR DIMENSIONS A~D.
3. THIS PRODUCT IS THE CONNECTOR WITH CABLE LOCK MECHANISM.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE X
DIM. IN mm
DESIGNED
DRAWN
CHECKED
APPROVED
DATE

CAT. NO. TABLE FOR 0.5 mm CONTACT SPACING CONNECTOR

CAT NO.

SFV__R-3/4ST__

DRAWING NO	REV
JSA 92600	

DF-136
REV.B

FCI

CAT. NO. & DIMENSIONS

NO. OF CONTACTS (n)	CAT. NO.	DIMENSIONS (NOTE3)		
		F ±5	G ±03	H ±01
4	SFV 4R-3/4STE1	20 4	16	—
5	SFV 5R-3/4STE1	20 4	16	—
6	SFV 6R-3/4STE1	20 4	16	—
7	SFV 7R-3/4STE1	28 4	24	—
8	SFV 8R-3/4STE1	28 4	24	—
9	SFV 9R-3/4STE1	28 4	24	—
10	SFV10R-3/4STE1	28.4	24	—
11	SFV11R-3/4STE1	28.4	24	—
12	SFV12R-3/4STE1	28.4	24	—
13	SFV13R-3/4STE1	28.4	24	—
14	SFV14R-3/4STE1	28.4	24	—
15	SFV15R-3/4STE1	28.4	24	—
16	SFV16R-3/4STE1	28.4	24	—
17	SFV17R-3/4STE1	28.4	24	—
18	SFV18R-3/4STE1	28.4	24	—
19	SFV19R-3/4STE1	28.4	24	—
20	SFV20R-3/4STE1	28.4	24	—
21	SFV21R-3/4STE1	28.4	24	—
22	SFV22R-3/4STE1	28.4	24	—
23	SFV23R-3/4STE1	36.4	32	28.4
24	SFV24R-3/4STE1	36.4	32	28.4
25	SFV25R-3/4STE1	36.4	32	28.4
26	SFV26R-3/4STE1	36 4	32	28.4
27	SFV27R-3/4STE1	36 4	32	28.4
28	SFV28R-3/4STE1	36.4	32	28.4
29	SFV29R-3/4STE1	36 4	32	28.4
30	SFV30R-3/4STE1	36 4	32	28.4
31	SFV31R-3/4STE1	48 4	44	40.4
32	SFV32R-3/4STE1	48 4	44	40.4
33	SFV33R-3/4STE1	48 4	44	40.4
34	SFV34R-3/4STE1	48.4	44	40.4
35	SFV35R-3/4STE1	48.4	44	40.4

CAT. NO.

SFV (n) R - 3 ST E1

- SERIES NAME
- NO OF CONTACTS
- RIGHT ANGLE TYPE
- FOR FPC, WITH CABLE LOCK MECHANISM
- CONTACT DIRECTION
  - 3: LOWER CONTACT TYPE
  - 4: UPPER CONTACT TYPE
- FOR AUTOMATIC MOUNTING (SMT)
- PACKAGE STYLE

NOTES

1. THIS PRODUCT IS THE CONNECTOR USED FOR FPC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. THIS CATALOG NO. INDICATES PLASTIC TAPE PACKAGED
3. SEE PART DRAWINGS FOR DIMENSIONS F~H.
4. THIS PRODUCT IS THE CONNECTOR WITH CABLE LOCK MECHANISM.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE X

DIM. IN mm

DESIGNED

DRAWN

CHECKED

APPROVED

DATE

CAT. NO. TABLE FOR PLASTIC TAPE PACKAGED 0.5 mm CONTACT SPACING CONNECTOR

CAT NO.

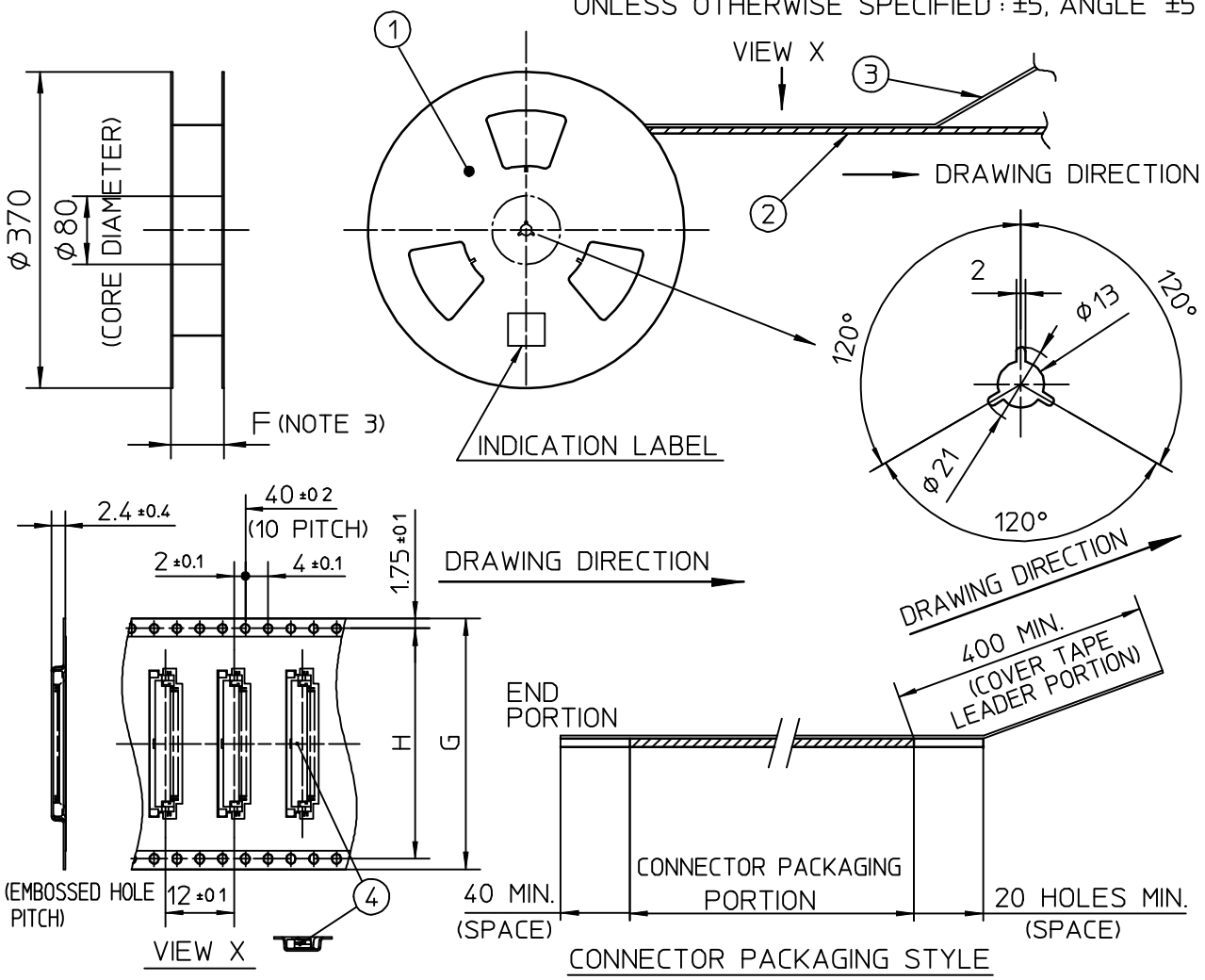
SFV__R-3/4STE1

DRAWING NO	REV
JSA 92603	

DF-136 REV.B

FCI

TOLERANCES
UNLESS OTHERWISE SPECIFIED : ±5, ANGLE ±5°



CONNECTOR PACKAGING STYLE

PT. NO.	PARTS NAME	CAT. NO	MATERIAL	Q'TY	NOTE
1	REEL	———	CARDBOARD	1	COLOR : WHITE
2	PLASTIC (EMBOSS) TAPE	———	A-PET	——	COLOR : TRANSPARENCY
3	COVER	———	POLYESTER	——	COLOR : TRANSPARENCY
4	CONNECTOR	SFV__R-3ST__	SEE ATTACHED DWG.	3000	LOWER CONTACT TYPE WITH CABLE LOCK MECHANISM

NOTES

1. THIS IS PLASTIC TAPE PACKAGED CONNECTOR USED FOR FPC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. SEE JIS C 0806 (PACKING OF ELECTRONIC COMPONENTS ON CONTINUOUS TAPES (SURFACE MOUNTING DEVICES)) FOR SHAPE AND DIMENSIONS OF PLASTIC (EMBOSS) TAPE AND REEL.
3. F DIMENSION IS PORTION OF THE CORE.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE X
DIM. IN mm
DESIGNED
DRAWN
CHECKED
APPROVED
DATE

PLASTIC TAPE PACKAGED
0.5 mm CONTACT SPACING CONNECTOR

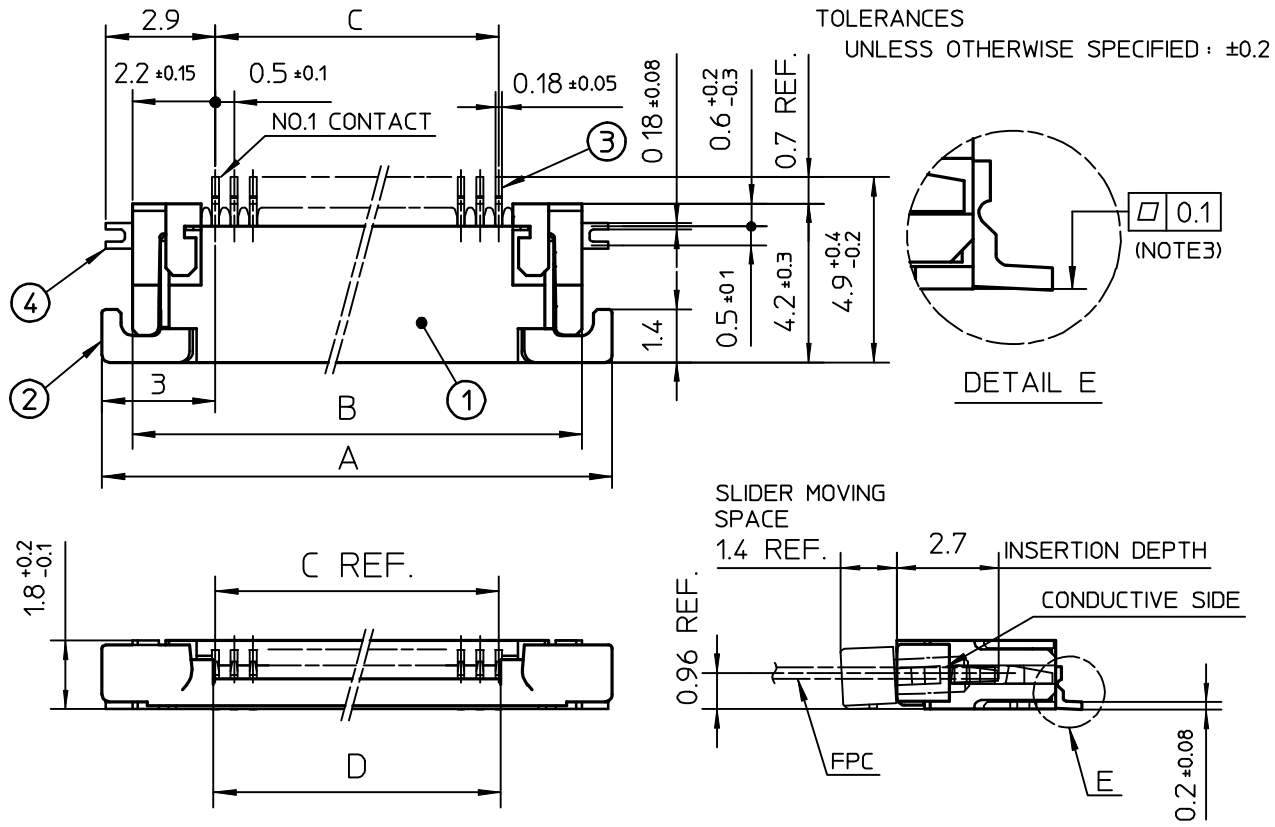
CAT NO.
SFV__R-3STE1

DRAWING NO
JSA 92604

REV

DF-136
REV.B

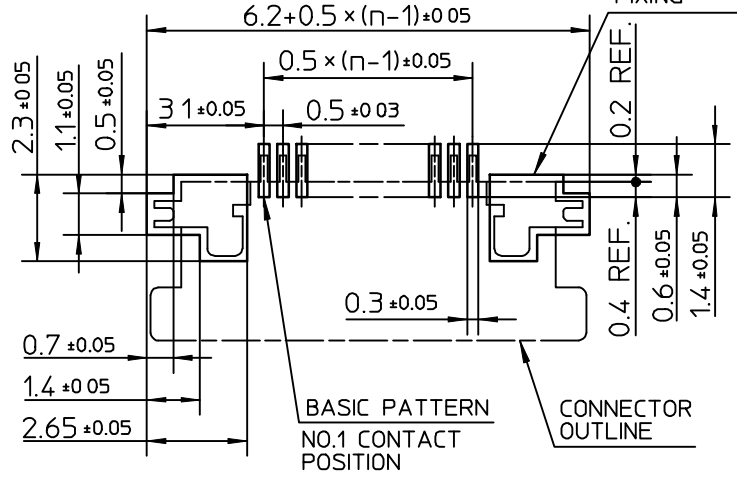
FCI



PT. NO.	PARTS NAME	MATERIAL	Q'TY	NOTE
1	HOUSING	POLYAMIDE RESIN GLASS REINFORCED (UL94V-0)	1	COLOR : BLACK
2	SLIDER	PPS RESIN GLASS REINFORCED (UL94V-0)	1	COLOR : BLACK
3	CONTACT	PHOSPHOR BRONZE	n	PLATING : TIN ALLOY
4	MOUNTING PLATE		2	

n : NO. OF CONTACTS

RECOMMENDED PC BOARD LAYOUT
(COMPONENT SIDE)



NOTES

1. THIS PRODUCT IS THE CONNECTOR USED FOR FPC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. THIS PRODUCT IS UPPER CONTACT TYPE CONNECTOR WITH CABLE LOCK MECHANISM.
3. FLATNESS OF CONTACT TERMINAL AND MOUNTING PLATE MUST BE WITHIN TOLERANCE IN E PORTION DETAILED DRAWING.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE %
DIM. IN mm
DESIGNED
DRAWN
CHECKED
APPROVED
DATE

CONNECTOR USED FOR FPC WITH 0.5 MM CONTACT SPACING

CAT NO.

SFV__R-4ST__

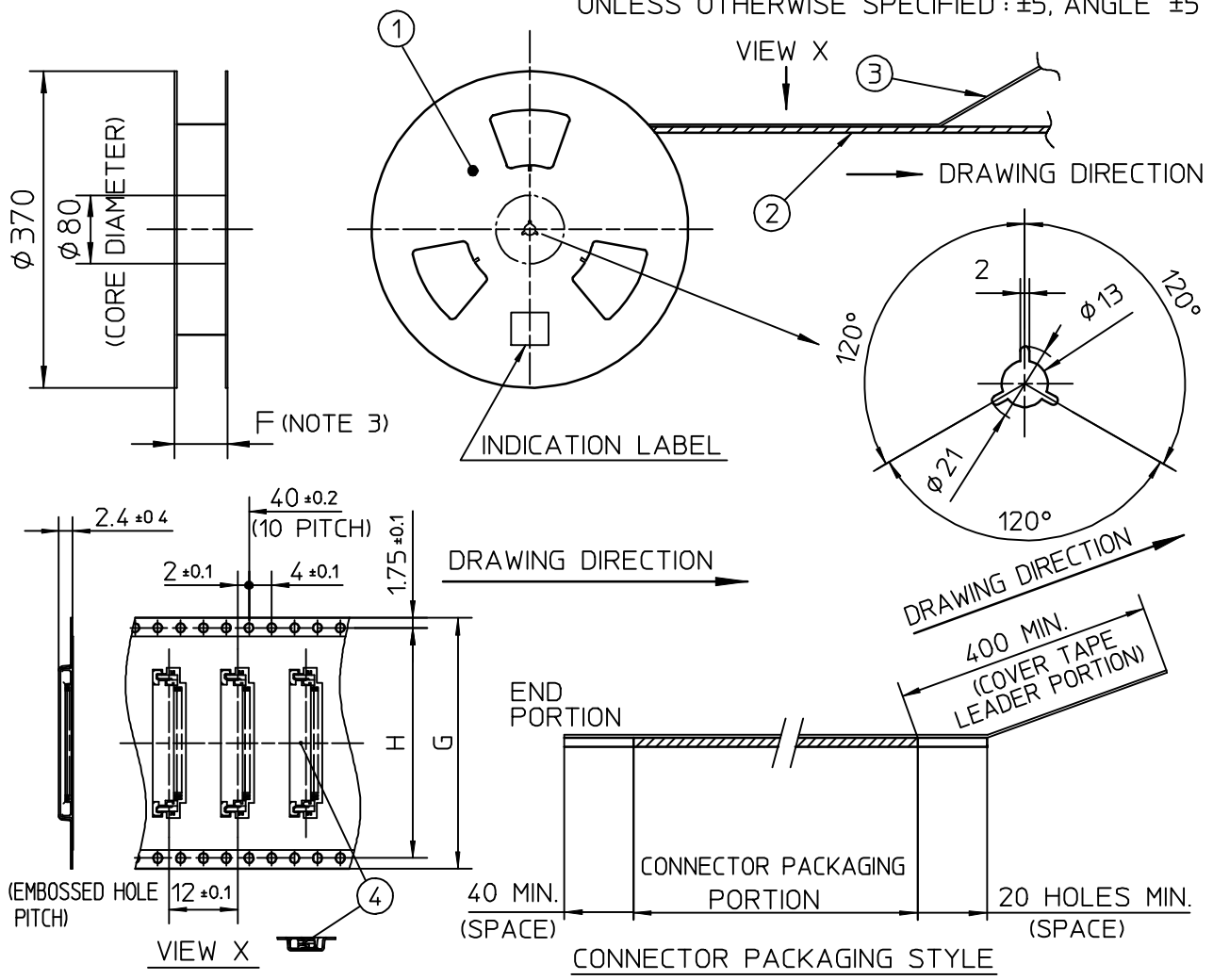
DRAWING NO: JSA 92602

REV:

DF-136
REV.B

FCI

TOLERANCES
UNLESS OTHERWISE SPECIFIED : ±5, ANGLE ±5°



PT. NO.	PARTS NAME	CAT. NO.	MATERIAL	Q'TY	NOTE
1	REEL	———	CARDBOARD	1	COLOR : WHITE
2	PLASTIC (EMBOSS) TAPE	———	A-PET	——	COLOR : TRANSPARENCY
3	COVER	———	POLYESTER	——	COLOR : TRANSPARENCY
4	CONNECTOR	SFV__R-4ST__	SEE ATTACHED DWG.	3000	UPPER CONTACT TYPE WITH CABLE LOCK MECHANISM

NOTES

1. THIS IS PLASTIC TAPE PACKAGED CONNECTOR USED FOR FPC AND COPES WITH AUTOMATIC MOUNTING (SMT).
2. SEE JIS C 0806 (PACKING OF ELECTRONIC COMPONENTS ON CONTINUOUS TAPES (SURFACE MOUNTING DEVICES)) FOR SHAPE AND DIMENSIONS OF PLASTIC (EMBOSS) TAPE AND REEL.
3. F DIMENSION IS PORTION OF THE CORE.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE	X
DIM. IN	mm
DESIGNED	
DRAWN	
CHECKED	
APPROVED	
DATE	

PLASTIC TAPE PACKAGED
0.5 mm CONTACT SPACING CONNECTOR

CAT NO.

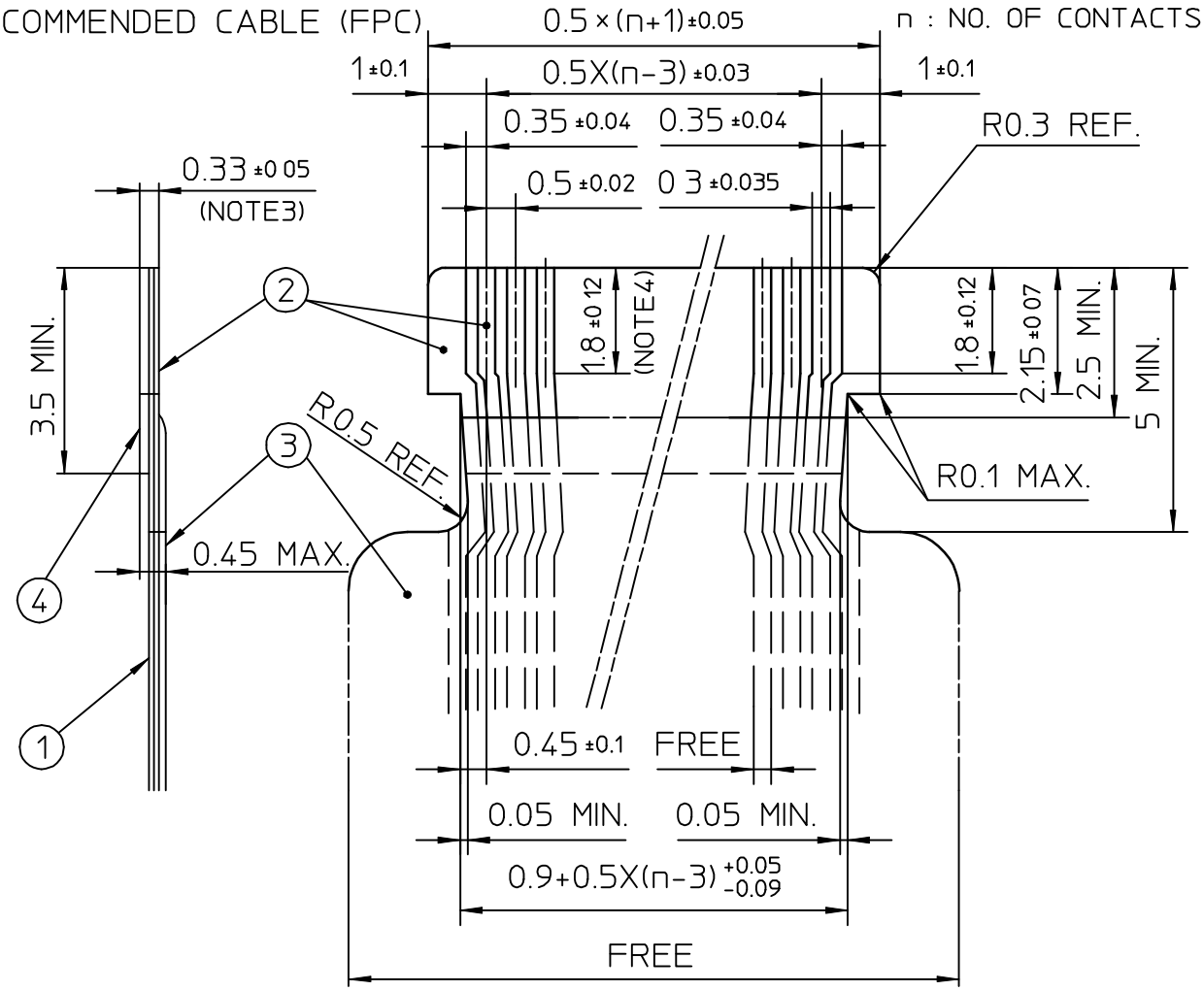
SFV__R-4STE1

DRAWING NO	REV
JSA 92605	

DF-136
REV.B

FCI

RECOMMENDED CABLE (FPC)



PT. NO.	PARTS NAME	MATERIAL	THICKNESS(μm)
1	BASE FILM	POLYIMIDE OR POLYESTER OR EQUAL	25
2	CONDUCTOR	COPPER FOIL(PLATING : SOLDER 1μm MIN.)	35
3	OVERLAY	POLYIMIDE OR POLYESTER OR EQUAL	——
4	SUPPORTING TAPE	POLYESTER OR POLYIMIDE OR EQUAL	188

NOTES

1. NO BURR AT EACH PORTION.
2. NO PEELING IN COMMON USE.
3. TOTAL THICKNESS LIMIT OF EACH MATERIAL (INCLUDING ADHESIVE AGENT) IS SPECIFIED.
4. THIS DIMENSION INDICATES THE RANGE FOR 0.3 ±0 035 CONDUCTOR WIDTH.

REV.	DATE	DESCRIPTION	DWN.	APPD.

SCALE X	RECOMMENDED CABLE
DIM. IN mm	CAT NO.
DESIGNED	SFV__R-3/4ST__
DRAWN	DRAWING NO / REV
CHECKED	JSA 92606
APPROVED	DF-136 REV.B
DATE	FCI

SPECIFICATION FOR
CONNECTOR USED FOR FPC/FFC WITH 0.5mm CONTACT SPACING
COPING WITH AUTOMATIC MOUNTING & SMT
SFV_ _R-1/2ST_E_LF

1. SCOPE

This specification covers the requirements for the connector (SFV_ _R-1/2ST_E_LF) with 0.5mm spacing to which the edge of FPC(Flexible Printed Circuit) and FFC(Flexible Flat Cable) can be connected by Zero-Insertion-Force method and which copes with automatic mounting and SMT.

2. APPLICABLE STANDARDS

JIS C 5402	Method for Test of Connectors for Electronic Equipment
JIS C 0806	Packing of Electronic Components on Continuous Tapes (Surface Mount Components)
UL – 94	TESTS FOR FLAMMABILITY OF PLASTIC MATERIALS FOR PARTS IN DEVICES AND APPLIANCES.

3. CATALOG No. STRUCTURE

SFV 20 R – 1 ST _ E1 LF

- Series
- Number of Contacts
- Right Angle
- For FPC/FFC, Contact direction
  - 1 : Lower contact type
  - 2 : Upper contact type
- Cope with automatic mounting & SMT
- Plating Variation
  - Blank : Tin plating
  - Z : Thin Tin plating
- Plastic Tape Packaging
- Lead Free

4. CONNECTOR SHAPE, DIMENSIONS AND MATERIALS

See attached drawings.

5. ACCOMMODATED CONDUCTORS (FPC/FFC)

See attached drawings.

6. PACKAGING CONDITION

See attached drawings.

7. RECOMMENDED MOUNTING PATTERN DIMENSIONS

See attached drawings.

8. RATING

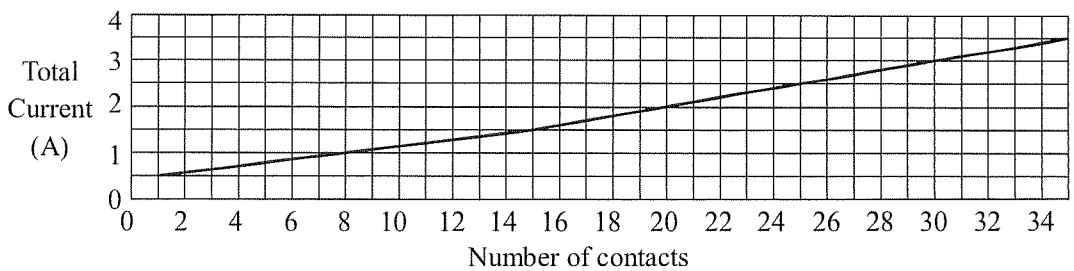
8-1. Voltage : A.C.50V D.C.50V

8-2. Current : A.C.0.5A D.C.0.5A (Refer to the following note.)

8-3. Operating Temperature : -55°C ~ +85°C (Including terminal temperature rises)

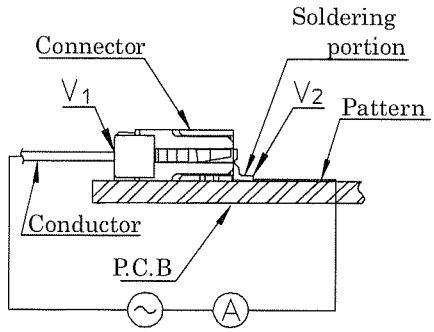
NOTE

Allowable maximum current for one contact is 0.5A. Total allowable current for a whole connector is the value which is shown in the following figure.



9. PERFORMANCE CHARACTERISTICS

9-1. Electrical Performance

No.	Test Item	Test Method	Requirements
9-1-1	Contact resistance	1)Measure contact resistance between V_1-V_2 by voltage drop method by the following circuit by mating accommodated conductor specified in clause 5 after reflow soldering the connector on the P.CB.  2)Open circuit voltage : Less than A.C.20mV 3)Test current : Less than A.C.20mA	1)Initial value : Less than 30mΩ 2)Contact resistance after the test is in accordance with the value specified in each test item.
9-1-2	Insulation resistance	1)Measure insulation resistance between adjacent contacts in a connector individual. 2)Test voltage : D.C.500V 3)Read value one minute after applying test voltage.	1)More than 100MΩ
9-1-3	Dielectric withstanding voltage	1)For one minute, apply A.C.200V between adjacent contacts in a connector individual. 2)Set current : A.C.1mA	1)Free from any short circuit and insulation breakdown.

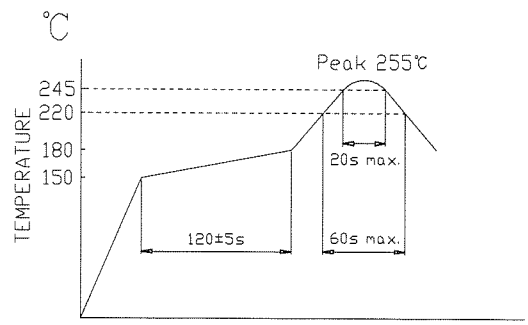
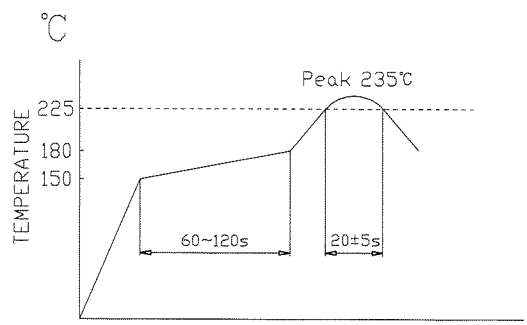
9-2. Mechanical Performance

No.	Test Item	Test Method	Requirements
9-2-1	Durability (Slider operation)	1)Measure contact resistance before and after the test by the method in clause 9-1-1 by mating the accommodated conductor specified in clause 5. 2)Number of slider open and close : 20 times (Insert and extract the conductor for each opening of the slider.)	1)Initial contact resistance : Less than 30mΩ 2)Contact resistance after the test : Less than 50mΩ 3)Free from any defect such as break etc. on the connector and conductor.
9-2-2	Vibration (Sinusoidal)	JIS C 60068-2-6 (IEC60068-2-6) 1)Frequency range : 10 ~ 500Hz 2)Amplitude : 0.75mm or Acceleration : 100m/s^2 3)Sweep rate : 1 octave/minute 4)Kind of test : Sweep endurance test 5)Test time : 10 cycles	1)During the test, no circuit opening for more than 1μs. 2)Free from any defect such as break, deformation, loosing and falling off etc. on each portion of the connector.

9-3. Environmental Performance

<table>
<tr><th>No.</th><th>Test Item</th><th>Test Method</th><th>Requirements</th></tr>
<tr><td>9-3-1</td><td>Damp heat
(Steady state)</td><td>JIS C 60068-2-78 (IEC60068-2-78)
1)Measure contact resistance before and after the test by the method in clause 9-1-1 by using the accommodated conductor specified in clause 5.
2)Measure insulation resistance after the test by the method in clause 9-1-2.
3)Bath temperature : 40°C
4)Bath humidity : 90 ~ 95%(relative humidity)
5)Period of exposure : 48 hours
6)Expose conductor and connector in mated condition and leave them under normal temperature.(Without insertion and separation)</td><td>1)Initial contact resistance
: Less than 30mΩ
2)Contact resistance after the test : Less than 50mΩ
3)Insulation resistance after the test : More than 100MΩ</td></tr>
<tr><td>9-3-2</td><td>Salt spray</td><td>JIS C 60068-2-11 (IEC60068-2-11)
1)Measure contact resistance before and after the test according to the method in clause 9-1-1 by using accommodated conductor specified in clause 5.
2)Salt solution concentration : 5%
3)Period of exposure : 48 hours
4)Expose conductor and connector in mated condition and leave them under normal temperature after posttreatment. (24 hours)</td><td>1)Initial contact resistance
: Less than 30mΩ
2)Contact resistance after the test : Less than 50mΩ</td></tr>
<tr><td>9-3-3</td><td>Change of temperature</td><td>JIS C 0025 (IEC60068-2-14)
1)Measure contact resistance before and after the test according to the method in clause 9-1-1 by using accommodated conductor specified in clause 5.
2)One cycle of temperature is as follow and test 5 cycles.
<table>
<tr><th>Step</th><th>Temp.(°C)</th><th>Time(min.)</th></tr>
<tr><td>1</td><td>-55±3</td><td>30</td></tr>
<tr><td>2</td><td>25±2</td><td>2 ~ 3</td></tr>
<tr><td>3</td><td>85±2</td><td>30</td></tr>
<tr><td>4</td><td>25±2</td><td>2 ~ 3</td></tr>
</table>
3)Expose conductor and connector in mated condition and leave them under normal temperature.</td><td>1)Initial contact resistance
: Less than 30mΩ
2)Contact resistance after the test : Less than 50mΩ
3)Free from any defect such as crack, warping and deformation etc. on each portion the connector.</td></tr>
</table>

9-4. Other performance

No.	Test Item	Test Method	Requirements
9-4-1	Soldering (Resistance to reflow soldering)	JIS C 60068-2-58 (IEC60068-2-58) 1)Solder by setting reflow bath on the following condition. 2)Preheating: 150~180°C, 120±5 s 3)Soldering : 220°C min. 60s max. 4)Peak : 245°C min. 20s max. (Peak 255°C max.) NOTE: Temperature must be measured at contact terminal portion and peak temperature on the upper surface of P.C.B must be less than 260°C. 4)Solder paste to be used is JIS Z 3282 Sn96.5Ag3.0Cu0.5	1)Contact resistance after the test : Less than 50mΩ 2)Insulation resistance after the test : More than 100MΩ 3)No short circuit and insulation breakdown for dielectric withstanding voltage test after this test. 4)Free from any damage on performance and contact performance after soldering.
		Diagram A  Resistance to reflow soldering profile	
9-4-2	Soldering (Solderability) (Reflow)	JIS C 60068-2-58 (IEC60068-2-58) 1)Solder by setting reflow bath on the following condition. 2)Preheating: 150~180°C, 60~120s 3)Soldering : 225°C min., 20±5s (Peak 235°C max.) NOTE: Temperature must be measured at contact terminal portion and peak temperature on the upper surface of P.C.B must be less than 260°C. 4)Solder paste to be used is JIS Z 3282 Sn96.5Ag3.0Cu0.5	1)Actual soldered area must be more than 90% of the dipped area intended to be soldered.
		Diagram B  Solderability profile	
9-4-3	Conductor retention force (Reference)	1)Measure initial retention force after inserted and locked by using accommodated conductor specified in clause 5. *FCI Test FPC : t=0.33mm Tin plating	1)More than 0.59N/contact for FPC (More than 60gf/contact for FPC) 2)More than 0.39N/contact for FFC (More than 40gf/contact for FFC)

10. INDICATION AND PACKAGING

10-1. Indication

1) Catalog number and lot number are not be indicated on the connector.
2) Catalog number and quantity shall be indicated on the surface of the package box.

10-2. Packaging

1) The connector individuals are packed by tapes with specified quantity in accordance with [JIS C 0806 "Packaging of Electronic Components on Continuous Tapes (Surface Mount components)"] and put into package box in accordance with FCI JAPAN packaging specification.

11. REMARKS

11-1. Please refer to the "Handing procedures and remarks" before use.

11-2. Retention force for accommodated conductor specified in clause 9-4-3 differs due to different thickness, structure and surface treatment of conductor. Therefore, the value of retention force specified in the clause for performance is reference value.

11-3. Since this connector can not be used for CIC (Conductor such as silver paste, carbon etc.) as accommodated conductor, please consult us separately.

12. RECOMMENDED REFLOW PROFILE

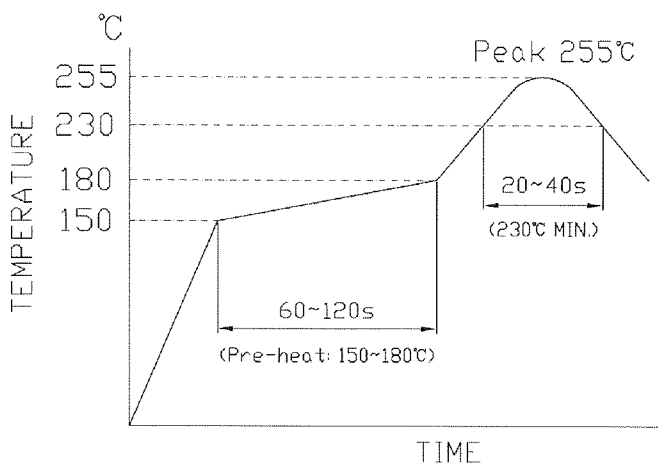


Diagram C. Recommended reflow temperature profile

Note: Please check the reflow soldering condition for your own application beforehand due to different conditions with soldering devices, P.C. Boards, etc.
No moisture treatment before reflow process.