

**PLEASE CHECK WWW.MOLEX.COM FOR LATEST PART INFORMATION**

**Part Number:** [0512812094](#)  
**Status:** **Active**  
**Overview:**  
**Description:** 0.50mm (.020") Pitch FFC/FPC Connector, SMT, Right Angle, Non-ZIF, Dual Contact Style, 1.20mm (.047") Mated Height, 20 Circuits, Lead-free, Gold (Au) Plating

**General**

Product Family	FFC/FPC Connectors
Series	51281
Overview	ffc_fpc_smt
Product Name	N/A

**Physical**

Circuits (Loaded)	20
Color - Resin	Natural
Contact Position	Dual
Durability (mating cycles max)	20
Entry Angle	90° Angle
Mated Height (in)	0.047 In
Mated Height (mm)	1.20 mm
Material - Metal	Phosphor Bronze
Material - Plating Mating	Gold
Material - Plating Termination	Tin
Material - Resin	High Temperature Thermoplastic
Number of Rows	1
Orientation	Right Angle
PC Tail Length (in)	0.020 In
PC Tail Length (mm)	0.50 mm
PCB Locator	No
PCB Retention	Yes
Packaging Type	Embossed Tape on Reel
Pitch - Mating Interface (in)	0.020 In
Pitch - Mating Interface (mm)	0.50 mm
Plating min: Mating (µin)	4
Plating min: Mating (µm)	0.1
Plating min: Termination (µin)	40
Plating min: Termination (µm)	1
Polarized to PCB	Yes
Stackable	No
Surface Mount Compatible (SMC)	N/A
Temperature Range - Operating	-20°C to +85°C
Termination Interface: Style	Surface Mount
Wire/Cable Type	FFC/FPC

**Electrical**

Current - Maximum per Contact	0.5A
Voltage - Maximum	50V

**Material Info**

**Reference - Drawing Numbers**

Packaging Specification	SPK-51281-001
Product Specification	PS-51281-003, RPS-51281-015, RPS-51281-016, RPS-51281-017, RPS-51281-018
Sales Drawing	SD-51281-011, SD-51281-012

**EU RoHS**

**ELV and RoHS  
Compliant**

**REACH SVHC**

Not Reviewed

**Halogen-Free**

**Status**

**Not Reviewed**

**China RoHS**



**Need more information on product  
environmental compliance?**

Email [productcompliance@molex.com](mailto:productcompliance@molex.com)  
 For a multiple part number RoHS Certificate of  
 Compliance, [click here](#)

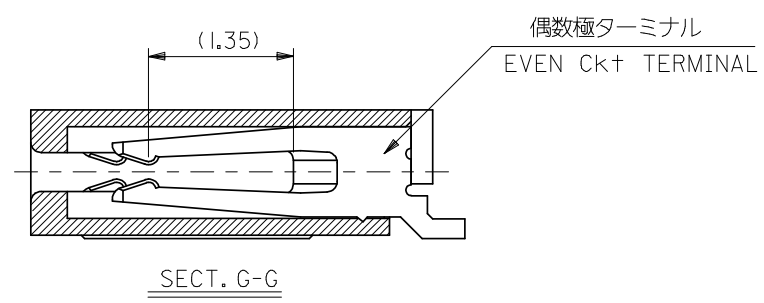
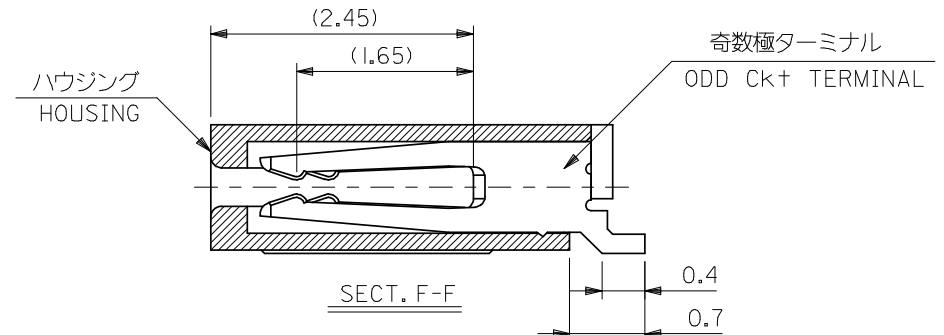
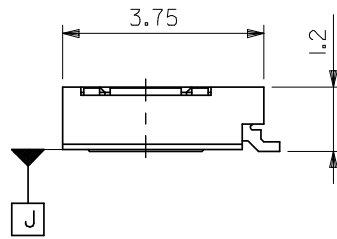
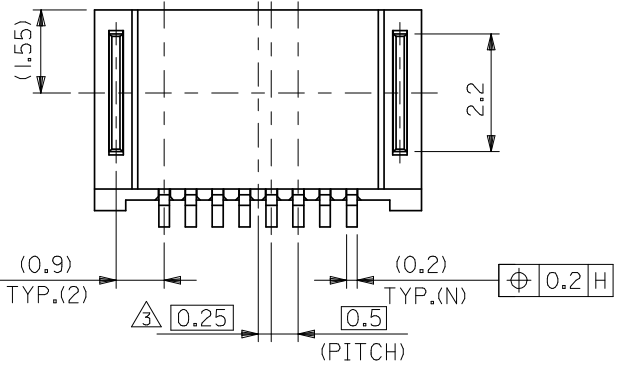
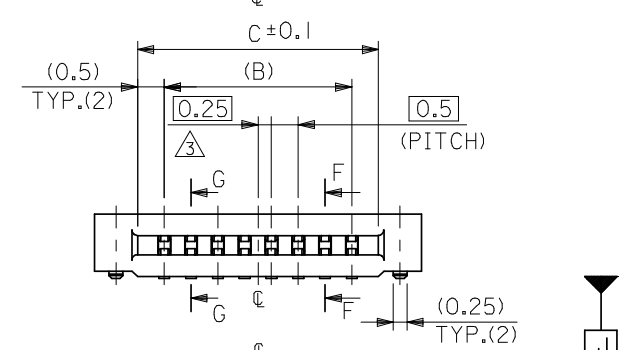
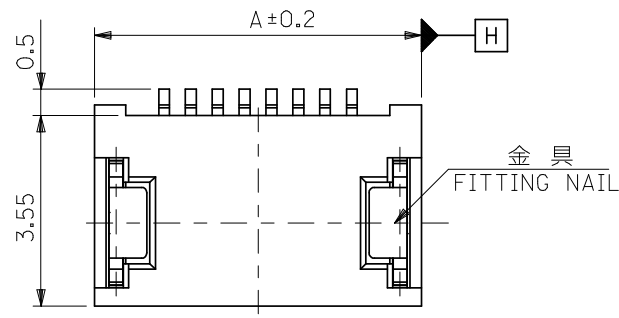
Please visit the [Contact Us](#) section for any  
 non-product compliance questions.

**Search Parts in this Series**

51281Series

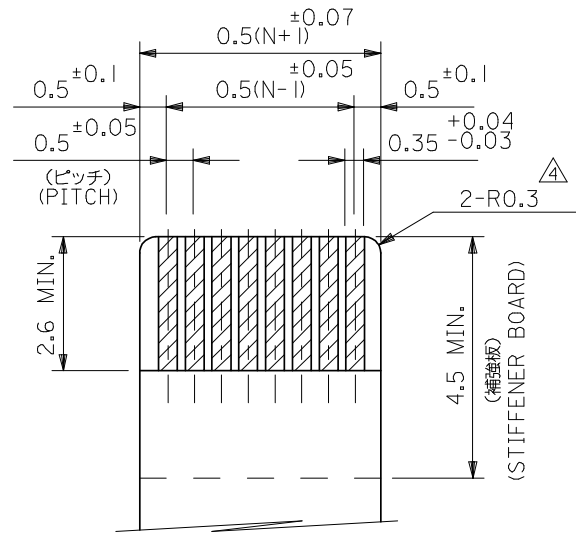
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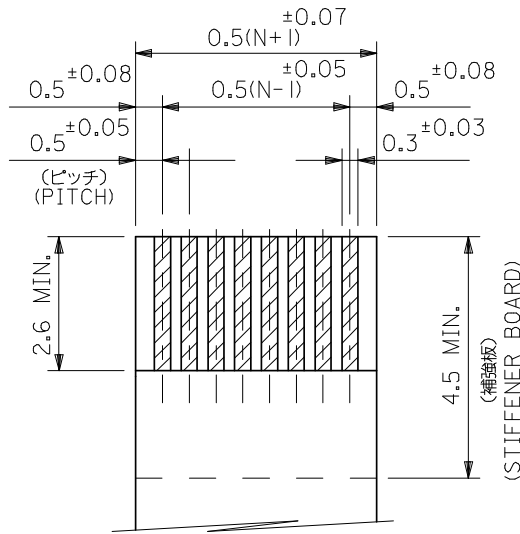


13.5	12.5	15.1	51281-2694	51281-2640	26
12.5	11.5	14.1	51281-2494	51281-2440	24
11.5	10.5	13.1	51281-2294	51281-2240	22
10.5	9.5	12.1	51281-2094	51281-2040	20
9.5	8.5	11.1	51281-1894	51281-1840	18
8.5	7.5	10.1	51281-1694	51281-1640	16
7.5	6.5	9.1	51281-1494	51281-1440	14
6.5	5.5	8.1	51281-1294	51281-1240	12
5.5	4.5	7.1	51281-1094	51281-1040	10
5.0	4.0	6.6	51281-0994	51281-0940	9
4.5	3.5	6.1	51281-0894	51281-0840	8
3.5	2.5	5.1	51281-0694	51281-0640	6
3.0	2.0	4.6	51281-0594	51281-0540	5
C	B	A	EMBOSSED TAPE ORDER No. オーダー番号	MATERIAL NO.	CIRCUIT

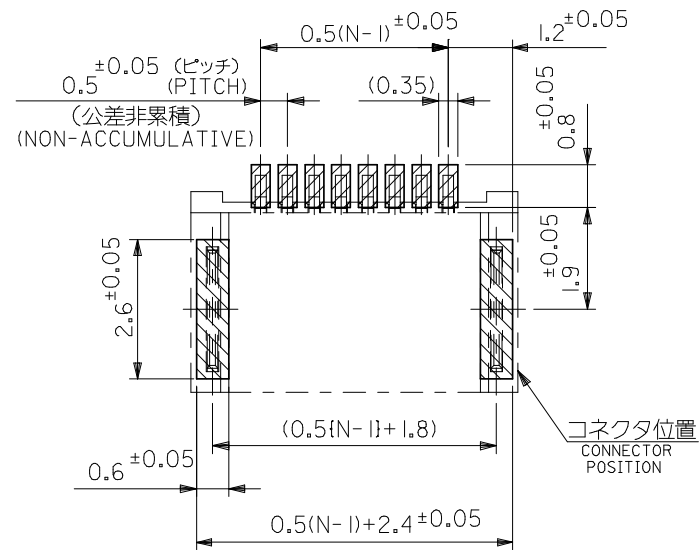
<b>REVISED</b> EC NO: J2008-4308 DRWN: MWABEI 2008/06/27 CHKD: THARUYAMA 2008/06/30 APPR: NUKITA 2008/06/30	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE	SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION
			MM ONLY	---	METRIC	
	10 UNDER	±0.2	DRAWN BY	DATE	TITLE	
	10 OVER 30 UNDER	±0.25	KENSUZUKI	2004/10/19	0.5 FPC CONN NON-ZIF HSG ASSY (HGT=1.2MM) -LEAD FREE-	
	30 OVER	±0.3	CHECKED BY	DATE	MOLEX INCORPORATED	
ANGULAR ±3°		APPROVED BY	DATE	MATERIAL NO.	DOCUMENT NO.	SHEET NO.
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		NUKITA	2004/10/19	SEE TABLE	SD-51281-011	1 OF 2
THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION						



適合FPC推奨寸法  
APPLICABLE FPC  
RECOMMENDED DIMENSION  
(仕上がり厚さ: 0.3 ± 0.03)  
(THICKNESS: 0.3 ± 0.03)



適合FFC推奨寸法  
APPLICABLE FFC  
RECOMMENDED DIMENSION  
(仕上がり厚さ: 0.3 ± 0.03)  
(THICKNESS: 0.3 ± 0.03)



参考基板レイアウト図  
RECOMMENDED P.C. BOARD LAYOUT  
(マウント面)  
(MOUNTING SIDE)

注記 NOTES

1. 使用材料 MATERIAL

ハウジング : 液晶ポリマー ガラス充填 UL94V-0  
HOUSING : LIQUID CRYSTAL POLYMER (GLASS FILLED) UL94V-0  
ターミナル : リン青銅 (t=0.2), ニッケル下地  
CONTACT部: 金メッキ  
テール部: 錫メッキ

TERMINAL : PHOSPHOR-BRONZE , CONTACT : GOLD  
TAIL : TIN  
OVER NICKEL PLATING

金具 : リン青銅 (t=0.25), ニッケル下地 純錫メッキ  
FITTING NAIL : PHOSPHOR-BRONZE , PURE-TIN OVER NICKEL PLATING.

△ ソルダータール半田付け面のズレ量、及び金具半田付け面のズレ量は、基準面 J に対し、上方向 0.1 MAXIMUM 下方向 0.15 MAXIMUM とする。  
又、相互のバラツキ量は 0.1 MAXIMUM とする。  
MISALIGNMENT OF SOLDER TAILS AND FITTING NAILS FROM J  
UPPER DIRECTION : 0.1 MAXIMUM , LOWER DIRECTION : 0.15 MAXIMUM.  
OFFSET BETWEEN SOLDER TAILS AND FITTING NAILS : 0.1 MAXIMUM.

△ 偶数極に適用。

TO BE APPLIED ONLY WHEN ALL CIRCUIT ARE EVEN.

△ R0.3は、FPCの導体部にかからないこと。

R0.3 MUST NOT BE ERAPPED TO PATTERN OF FPC.

5. FPC/FFCについて:

打抜き方向は導体側から補強板側を推奨いたします。  
導体部については軟銅箔35μmまたは50μm  
メッキ厚 0.1μm 金メッキ (電気メッキ)  
を推奨いたします。

RECOMMENDED PUNCHER DIRECTION :  
FROM CONDUCTOR SIDE TO STIFFENER BOARD SIDE.

RECOMMENDED CONDUCTOR SPEC :  
THICKNESS OF SOFT COPPER FOIL : 35 μm or 50 μm  
GOLD PLATING : 0.1 μm (ELECTRICAL PLATING)

6. 本製品は51281-\*\*-20の鉛フリー品である。  
THIS PRODUCT IS LEAD FREE OF 51281-\*\*-20.

7. ソルダータールの平坦度は、0.1 MAXIMUM とする。  
SOLDER TAIL COPLANARITY IS 0.1 MAXIMUM.

REVISED EC NO: J2008-4308 DRWN: WABEI 2008/06/27 CHKD: THARUYAMA 2008/06/30 APPR: NUKITA 2008/06/30	DESCRIPTION	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE ---	51281-**-40	MODEL NO.
		10 UNDER	±0.2	DRAWN BY KENSUZUKI	DATE 2004/10/19	TITLE 0.5 FPC CONN NON-ZIF HSG ASSY (HGT=1.2MM) -LEAD FREE-	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION
		10 OVER 30 UNDER	±0.25	CHECKED BY NUKITA	DATE 2004/10/19	MOLEX INCORPORATED	DOCUMENT NO. SD-51281-011	SHEET NO. 2 OF 2
		30 OVER	±0.3	APPROVED BY NUKITA	DATE 2004/10/19			
ANGULAR ±3°		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		MATERIAL NO. SEE SHEET 1				
G		REV		SIZE A3		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		

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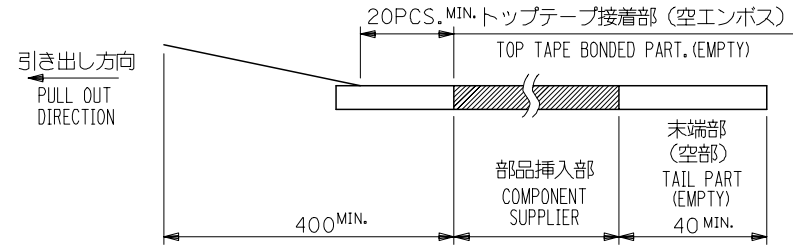
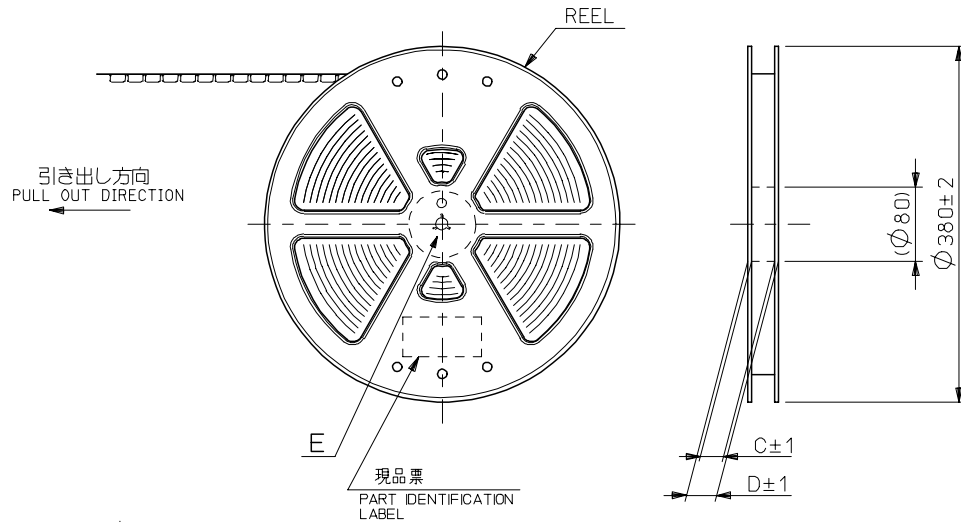
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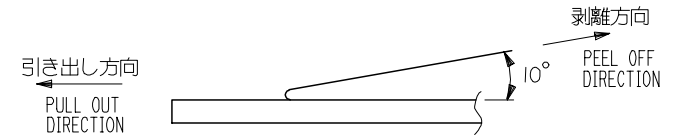
NOTES

- 製品詳細寸法については図面 SD-51281-011 を参照下さい。  
RE DETAILED DIMENSION, SEE SD-51281-011
- 梱包数量：3000個/リール  
NUMBER OF CONNECTORS : 3000PCS/REEL
- リードテープ長さ LEAD TAPE LENGTH

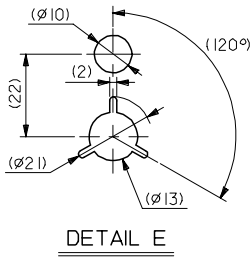


- トップテープの剥離強度：0.1N~1.3N {10gf~130gf} (剥離方向は下図参照)

尚、本規格値は出荷時に適用。(但し、輸送時に剥離が発生しないこと。)  
PEELING OFF FORCE OF TOP TAPE : 0.1N~1.3N {10gf~130gf}  
(PEELING DIRECTION AS SHOWN IN FOLLOWING FIG.)  
THIS REQUIREMENT SHOULD BE APPLIED AT SHIPMENT.  
PEEL OFF SHOULD NOT BE ALLOWED , DURING TRANSPORTATION.



- 材料 (MATERIAL)  
キャリアテープ (CARRIER TAPE) : ポリプロピレン (POLYPROPYLENE)  
トップテープ (TOPTAPE) : PET , PE , PEF  
リール (REEL) : ポリスチレン (PS) <リサイクル材含む>  
POLYSTYREN (PS) <RECYCLE MATERIAL CONTAINED>
- C, D 寸法は SHEET 2 ~ 3 を参照下さい。  
SEE SHEET 2 ~ 3 (DIMENSION C, D).



REVISED EC NO: J2006-0559 DRWN: NABEI 2005/08/22 CHKD: TOYODA 2005/08/23 APPR: NUKITA 2005/08/26	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE ---	51281-xx94	MODEL NO.
	10 UNDER	±0.2	DRAWN BY KENSUZUKI	DATE 2004/10/19	TITLE	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION
	10 OVER 30 UNDER	±0.25	CHECKED BY NUKITA	DATE 2004/10/19	0.5 FPC CONN NON-ZIF (HGT=1.2MM) EMBSTP PKG -LEAD FREE-	MOLEX	SHEET NO. 1 OF 4
	30 OVER	±0.3	APPROVED BY NUKITA	DATE 2004/10/19			
ANGULAR ±3 °		MATERIAL NO. SEE CHART		DOCUMENT NO. SD-51281-012			
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SIZE A3		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION			

10 9 8 7 6 5 4 3 2 1

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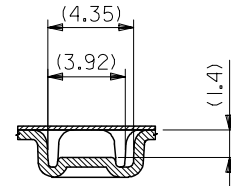
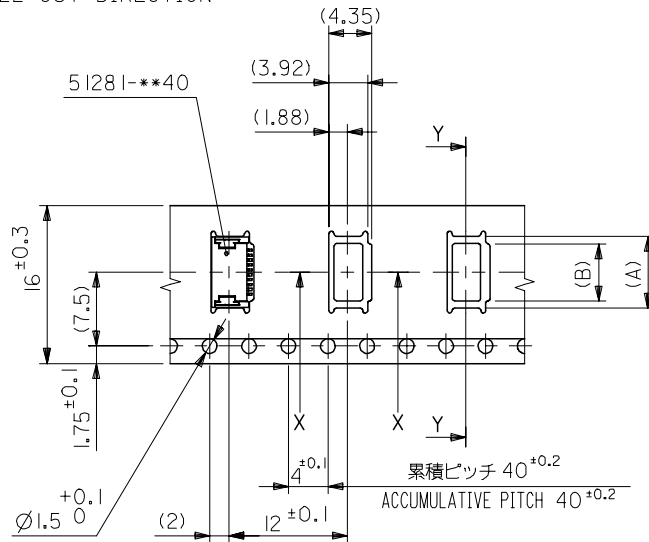
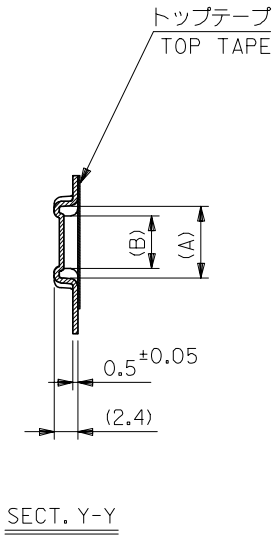
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引き出し方向  
PULL OUT DIRECTION



16mm幅キャリアテープ  
16mm WIDTH CARRIER TAPE

16	21.4	17.4	4.3	6.3	51281-0894	8
			3.3	5.3	51281-0694	6
			2.8	4.8	51281-0594	5
キャリアテープ幅 CARRIER TAPE WIDTH	D	C	(B)	(A)	製品番号 MATERIAL No.	極数 Ck+
51281-***94					MODEL NO.	

REVISED EC NO: J2006-0559 DRWN: NABEI 2005/08/22 CHK: KATOYODA 2005/08/23 APPR: NUKITA 2005/08/26	DESCRIPTION GENERAL TOLERANCES (UNLESS SPECIFIED)	10 UNDER ±0.2 10 OVER 30 UNDER ±0.25 30 OVER ±0.3	DIMENSION STYLE MM ONLY	SCALE ---	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION	
		ANGULAR ±3 ° DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	DRAWN BY DATE KENSUZUK 2004/10/19 CHECKED BY DATE NUKITA 2004/10/19 APPROVED BY DATE NUKITA 2004/10/19	TITLE 0.5 FPC CONN NON-ZIF (HGT=1.2MM) EMBSTP PKG -LEAD FREE-		MOLEX INCORPORATED	
		SEE CHART	MATERIAL NO. SD-51281-012	DOCUMENT NO. SD-51281-012	SHEET NO. 2 OF 4		
		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION					

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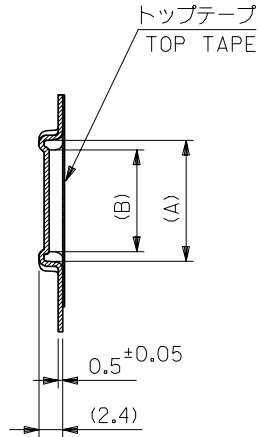
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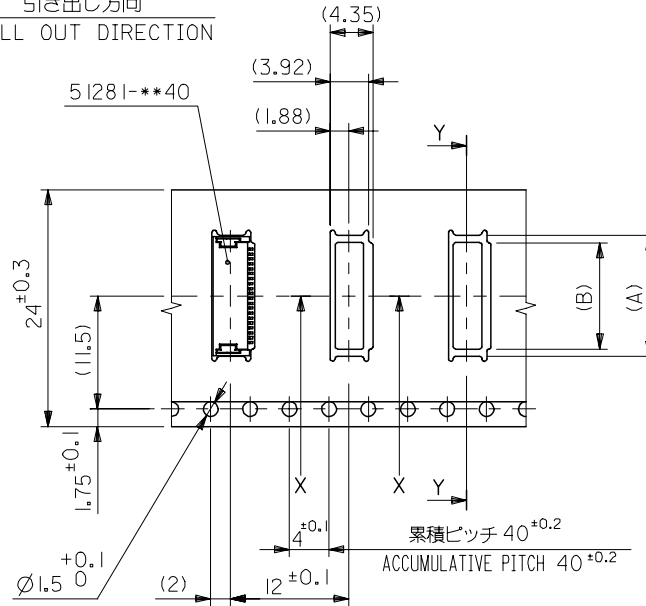
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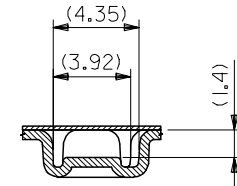
引き出し方向  
PULL OUT DIRECTION



SECT. Y-Y



24mm幅キャリアテープ  
24mm WIDTH CARRIER TAPE



SECT. X-X

24	29.4	25.4	12.3	14.3	51281-2494	24		
			11.3	13.3	51281-2294	22		
			10.3	12.3	51281-2094	20		
			9.3	11.3	51281-1894	18		
			8.3	10.3	51281-1694	16		
			7.3	9.3	51281-1494	14		
			6.3	8.3	51281-1294	12		
			5.3	7.3	51281-1094	10		
			4.8	6.8	51281-0994	9		
キャリアテープ幅 CARRIER TAPE WIDTH			D	C	(B)	(A)	製品番号 MATERIAL No.	極数 Ck+
51281-**-94 MODEL No.								

REVISED EC NO: J2006-0559 DRWN: NABEI 2005/08/22 CHKD: TOYODA 2005/08/23 APPR: NUKITA 2005/08/26	DESCRIPTION GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE MM ONLY		SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION		
		10 UNDER ±0.2 10 OVER 30 UNDER ±0.25 30 OVER ±0.3		---	METRIC			
		ANGULAR ±3 °		DRAWN BY KENSUZUKI	DATE 2004/10/19		TITLE 0.5 FPC CONN NON-ZIF (HGT=1.2MM) EMBSTP PKG -LEAD FREE-	
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		CHECKED BY NUKITA	DATE 2004/10/19		MOLEX INCORPORATED	
				APPROVED BY NUKITA	DATE 2004/10/19		MATERIAL NO. SEE CHART	DOCUMENT NO. SD-51281-012

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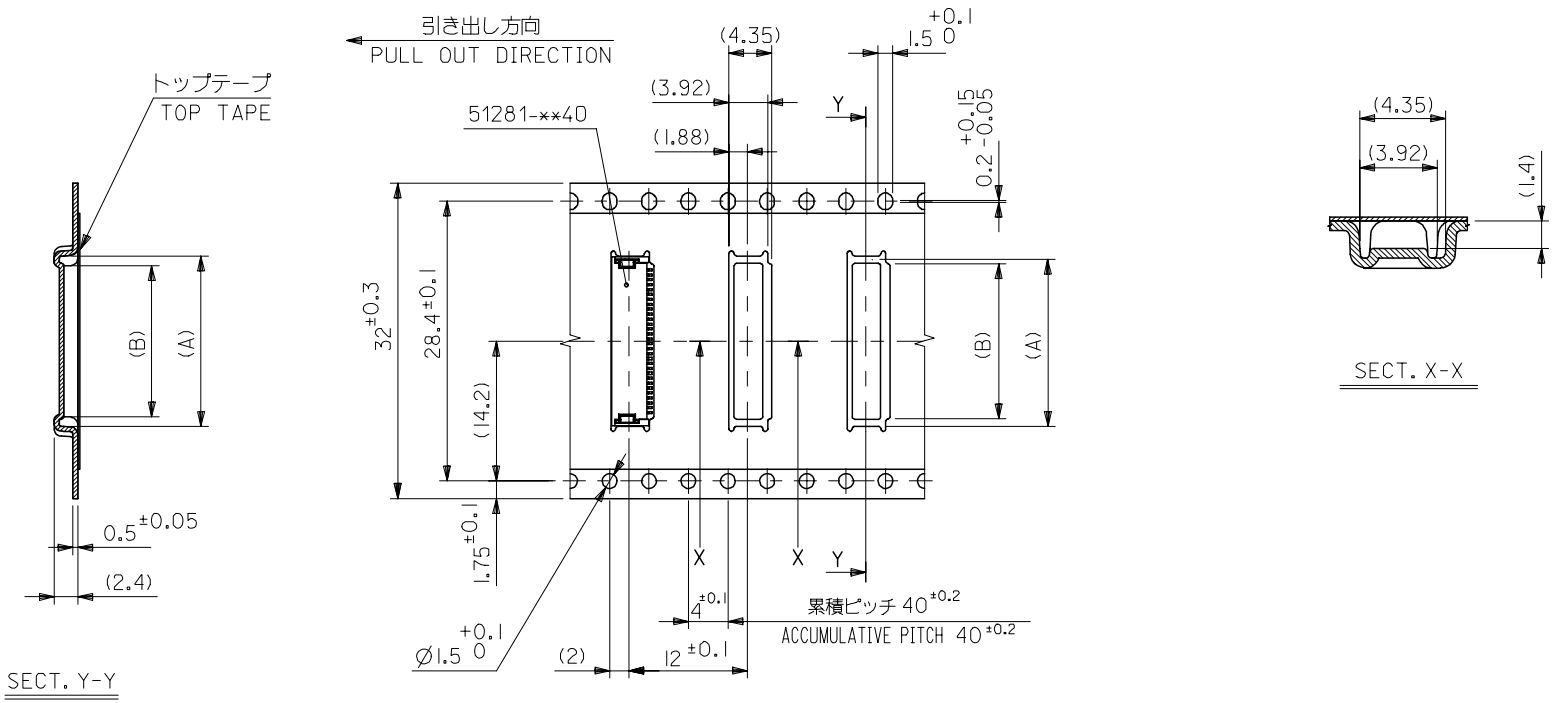
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32mm幅キャリアテープ  
32mm WIDTH CARRIER TAPE

32	37.4	33.4	13.3	15.3	51281-2694	26
キャリアテープ幅 CARRIER TAPE WIDTH	D	C	(B)	(A)	製品番号 MATERIAL No.	極数 CK+

REVISED EC NO: J2006-0559 DRWN: NABEI 2005/08/22 CHKDK: TOYODA 2005/08/23 APPR: NUKITA 2005/08/26	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE ---	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION
	10 UNDER	±0.2	DRAWN BY KENSUZUKI	DATE 2004/10/19	TITLE 0.5 FPC CONN NON-ZIF (HGT=1.2MM) EMBSTP PKG -LEAD FREE-		
	10 OVER 30 UNDER	±0.25	CHECKED BY NUKITA	DATE 2004/10/19			
	30 OVER	±0.3	APPROVED BY NUKITA	DATE 2004/10/19	MOLEX INCORPORATED		
ANGULAR	±3 °	MATERIAL NO. SEE CHART		DOCUMENT NO. SD-51281-012	SHEET NO. 4 OF 4		
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION					

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