

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

**Part Number:** [0472720024](#)  
**Status:** **Active**  
**Overview:** [displayport](#)  
**Description:** 0.50mm (.020") Pitch DisplayPort\* Male Receptacle, Right Angle, SMT, 0.76µm (30µ") Gold (Au) Plating, 20 Circuits, with Cover, Latch Holes, Mylar, Peg, Solder Tab of Shell, without Flange, Leadfree

**Documents:**

[3D Model](#) [RoHS Certificate of Compliance \(PDF\)](#)  
[Drawing \(PDF\)](#)

**Agency Certification**

UL E29179

**General**

Product Family I/O Connectors  
 Series [47272](#)  
 Application Wire-to-Board  
 Comments Through Hole Peg of Shell  
 Component Type Receptacle  
 Overview [displayport](#)  
 Product Name DisplayPort\*  
 Type N/A

**Physical**

Boot Color N/A  
 Circuits (Loaded) 20  
 Circuits (maximum) 20  
 Color - Resin Black  
 Flammability 94V-0  
 Gender Male  
 Keying to Mating Part Yes  
 Lock to Mating Part Yes  
 Material - Metal Copper Alloy  
 Material - Plating Mating Gold  
 Material - Plating Termination Tin-Bismuth  
 Material - Resin High Temperature Thermoplastic  
 Number of Rows 2  
 Orientation Right Angle  
 PCB Locator Yes  
 PCB Retention Yes  
 Packaging Type Embossed Tape on Reel  
 Panel Mount Without Flange  
 Pitch - Mating Interface (in) 0.039 In  
 Pitch - Mating Interface (mm) 0.50 mm  
 Pitch - Term. Interface (in) 0.039 In  
 Pitch - Term. Interface (mm) 0.50 mm  
 Plating min: Mating (µin) 30  
 Plating min: Mating (µm) 0.76  
 Plating min: Termination (µin) 40  
 Plating min: Termination (µm) 1  
 Polarized to Mating Part Yes  
 Polarized to PCB Yes  
 Ports 1  
 Temperature Range - Operating -20°C to +85°C  
 Termination Interface: Style Surface Mount



image - Reference only

Series

**EU RoHS**

**ELV and RoHS Compliant**  
**REACH SVHC**  
 Not Reviewed  
**Halogen-Free Status**

**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**

[47272Series](#)

**Mates With**

[47271](#) Plug Sub-Assemblies, [68783](#) Cable Series

Waterproof / Dustproof No

### **Electrical**

Current - Maximum per Contact 0.5A  
Grounding to Panel Yes  
Shielded Yes  
Voltage - Maximum 40V AC

### **Solder Process Data**

Duration at Max. Process Temperature (seconds) 3  
Lead-free Process Capability Reflow Capable (SMT only)  
Max. Cycles at Max. Process Temperature 2  
Process Temperature max. C 250

### **Material Info**

#### **Reference - Drawing Numbers**

Packaging Specification PK-47272-001  
Sales Drawing SD-47272-001

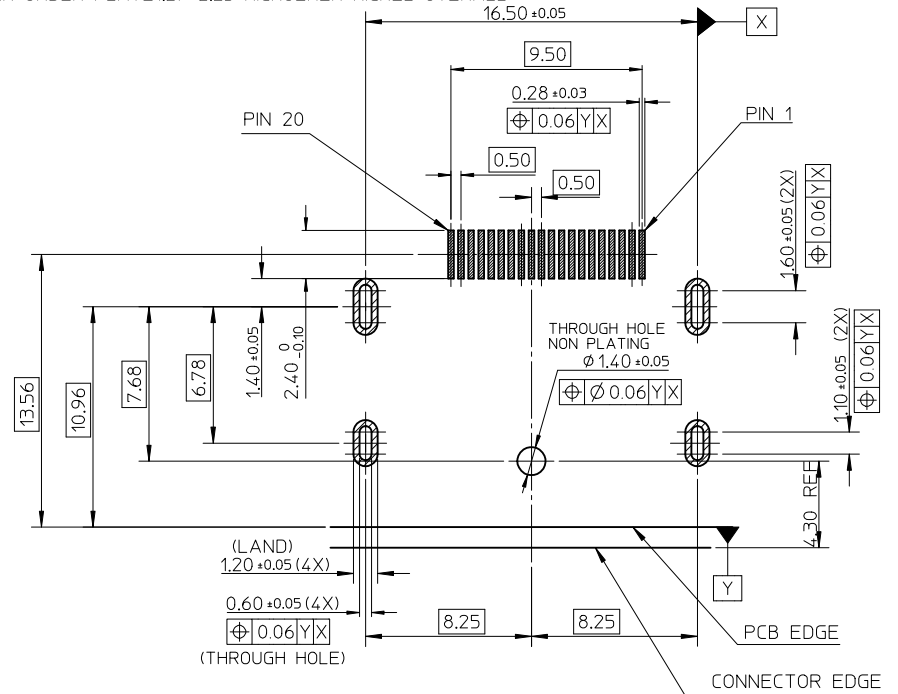
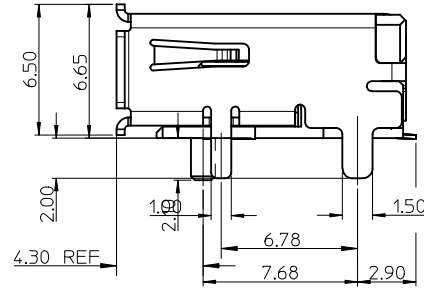
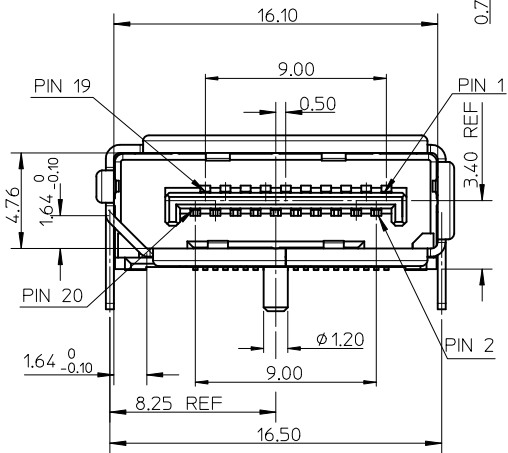
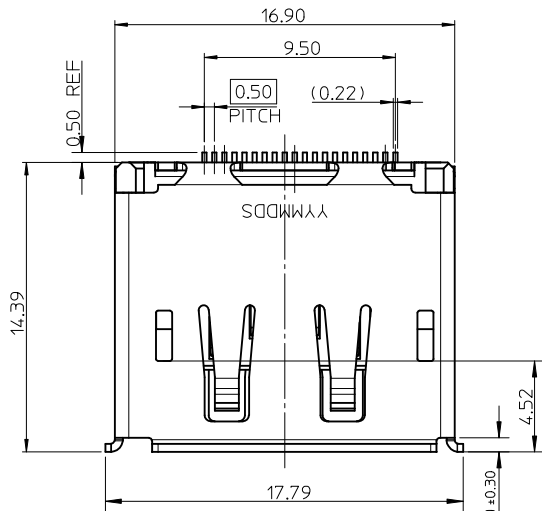
\* DisplayPort is a Trademark of VESA

This document was generated on 05/19/2010

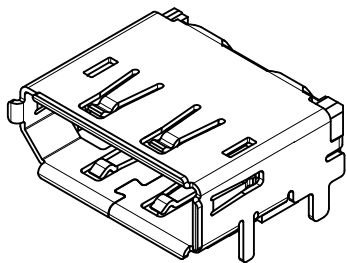
**PLEASE CHECK [WWW.MOLEX.COM](http://WWW.MOLEX.COM) FOR LATEST PART INFORMATION**

NOTES:

1. MATERIAL:  
 HOUSING: HIGH TEMPERATURE THERMAL PLASTIC, BLACK, 30% GLASS FILLED, UL94V-0.  
 TERMINAL: COPPER ALLOY.  
 SHELL: COPPER ALLOY.
2. PLATING:  
 TERMINAL: CONTACT AREA(1)0.76 MICROMETER GOLD PLATING  
 (2)0.38 MICROMETER GOLD PLATING  
 (3)GOLD FLASH PLATING  
 (4)0.64MIN. MICROMETER PALLADIUM/NICKEL AND GOLD FLASH PLATING  
 AND SOLDER TAIL 1-3 MICROMETER TIN BISMUTH UNDER PLATE1-3 MICROMETER NICKEL PLATING OVERALL.  
 SHELL:(a)1.27-2.54 MICROETER SOLDERABLE NICKEL PLATING OVERALL.  
 (b)SHELL PEG SOLDERING SURFACE PLATE GOLD FLASH UNDER PLATE1-3 MICROMETER NICKEL PLATING OVERALL.  
 (c) SHELL PLATE 2.1~3.0 MICROMETER TIN UNDER PLATE1.27~2.25 MICROERER NICKEL OVERALL
3. SOLDER TAIL COPLANARITY 0.10 MAX.
4. PS REFER TO PS-47272-001



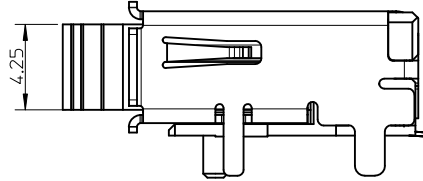
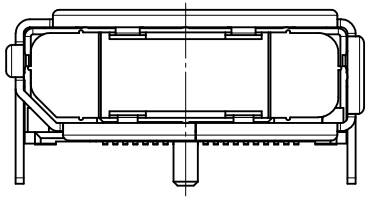
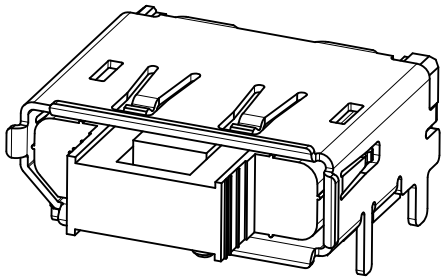
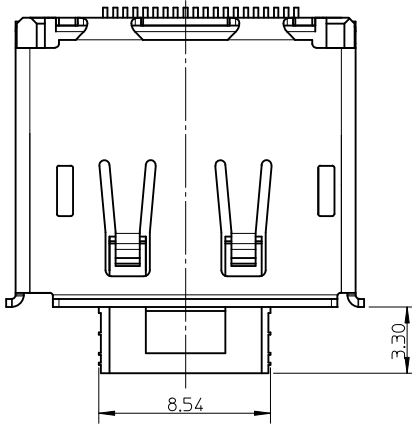
RECOMMENDED PCB LAYOUT (THICKNESS=1.6±0.15)



REVISED EC NO: SH2010-0353 DRWN: HHE 2010/03/08 CHKD: YANG05 2010/03/14 APPR: RZHANG 2010/03/29	DESCRIPTION REV	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE		SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION	
		$\nabla = 0$ $\nabla = 0$ $\nabla = 0$	mm	INCH	MM ONLY		1:1	METRIC		
		4 PLACES	± ---	± ---	DRAWN BY	DATE	TITLE			
		3 PLACES	± ---	± ---	RZHANG	2005/07/01	1.0MM PITCH DISPLAY PORT RECEPTACLE ASSEMBLY			
		2 PLACES	± 0.25	± ---	CHECKED BY	DATE	MATERIAL NO.			
		1 PLACE	± 0.25	± ---	IWANG	2005/07/01	DOCUMENT NO.			
		ANGULAR ± 3 °		APPROVED BY		DATE	SHEET NO.			
				RZHANG		2010/03/26	SD-47272-001			
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SIZE		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION						
		A3								

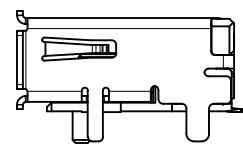
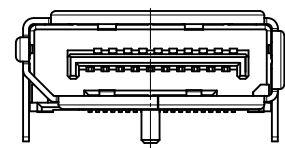
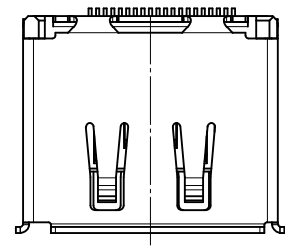
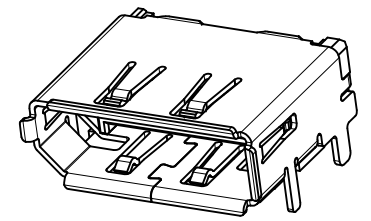
10 9 8 7 6 5 4 3 2 1

WITH COVER



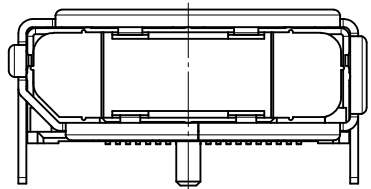
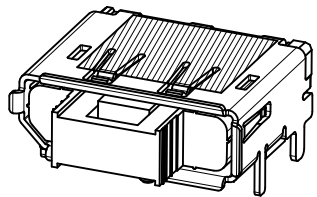
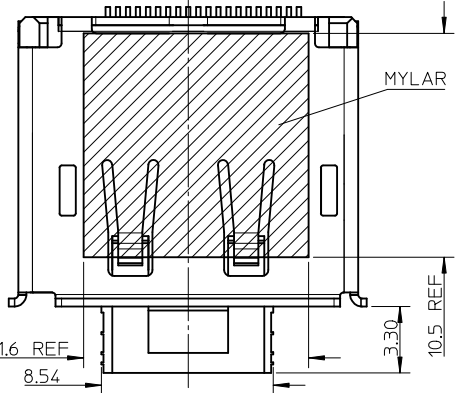
- NOTES:  
 1.UNSPECIFIED DIMENSION ARE SAME AS SHEET1  
 2.CONNECTOR WITH COVER IS USED FOR WARE SOLDERING PEG

WITHOUT LATCH HOLE



- NOTES:  
 1.UNSPECIFIED DIMENSION ARE SAME AS SHEET1

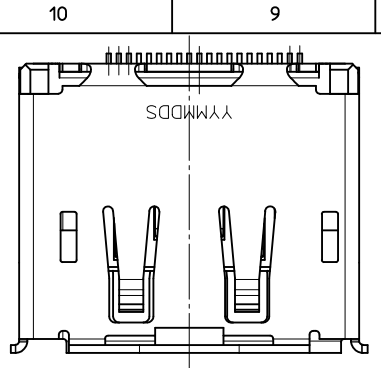
WITH COVER AND MYLAR



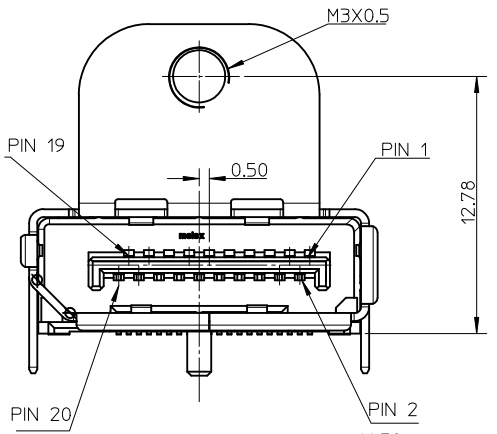
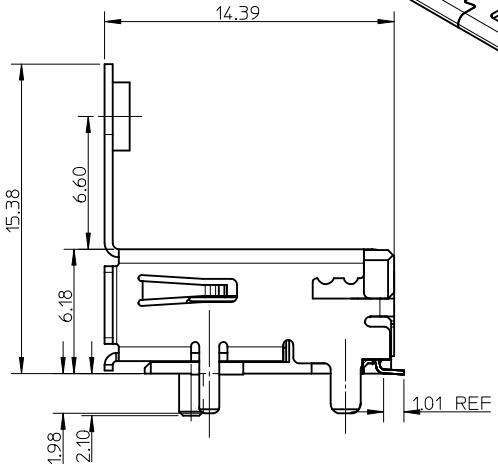
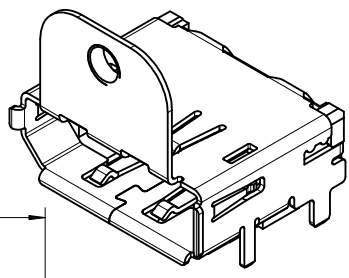
- NOTES:  
 1.UNSPECIFIED DIMENSION ARE SAME AS SHEET1  
 2.CONNECTOR WITH COVER IS USED FOR WARE SOLDERING PEG

REVISED EC NO: SH2010-0353 DRW:HHH 2010/03/08 CHK:D:YANG05 2010/03/24 APPR:RZHANG 2010/03/29	DESCRIPTION REV	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE	SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION
		$\nabla_F=0$	mm	INCH	MM ONLY	1:1	METRIC	
		$\nabla_F=0$	4 PLACES ± ---	± ---	DRAWN BY	DATE	TITLE	
		$\nabla_F=0$	3 PLACES ± ---	± ---	RZHANG	2005/07/01	1.0MM PITCH DISPLAY PORT RECEPTACLE ASSEMBLY	
		2 PLACES ± 0.25	± ---	CHECKED BY	DATE			
		1 PLACE ± 0.25	± ---	IWANG	2005/07/01			
		ANGULAR ± 3 °		APPROVED BY	DATE	MOLEX INCORPORATED		
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		RZHANG	2010/03/26	DOCUMENT NO.	SD-47272-001	SHEET NO.
				SEE SHEETS 5				2 OF 8
				THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION				

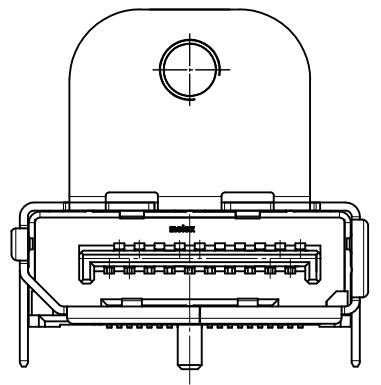
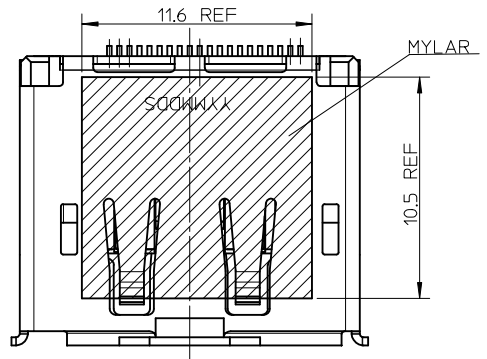
9 8 7 6 5 4 3 2 1



WITH FLANGE AND THROUGH HOLE PEG

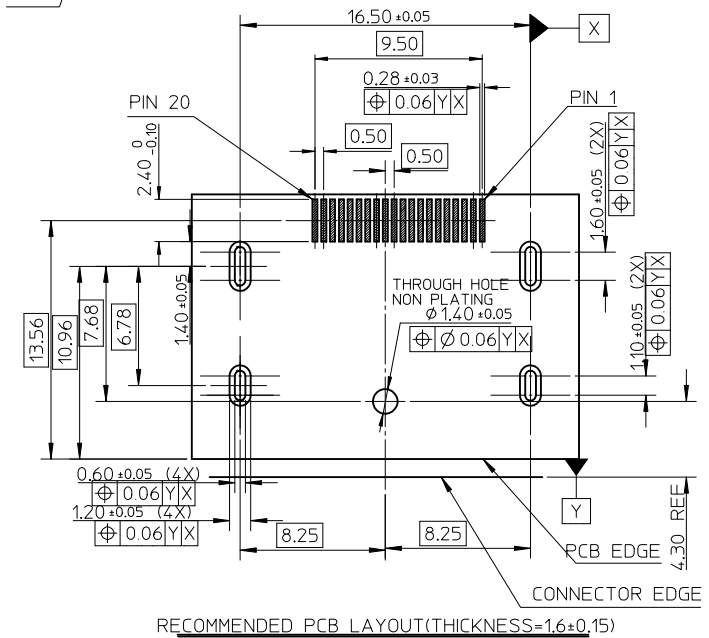


WITH MYLAR



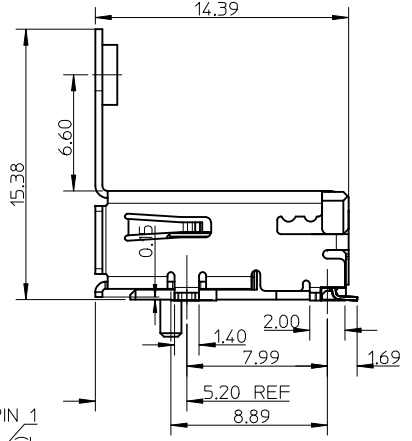
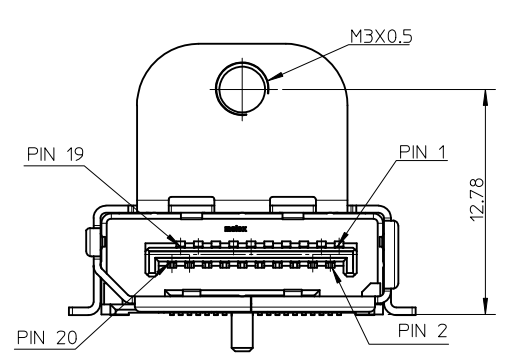
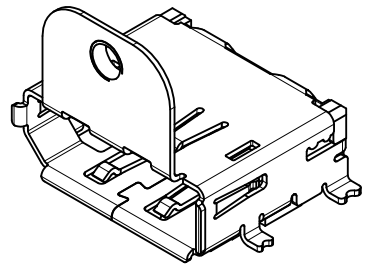
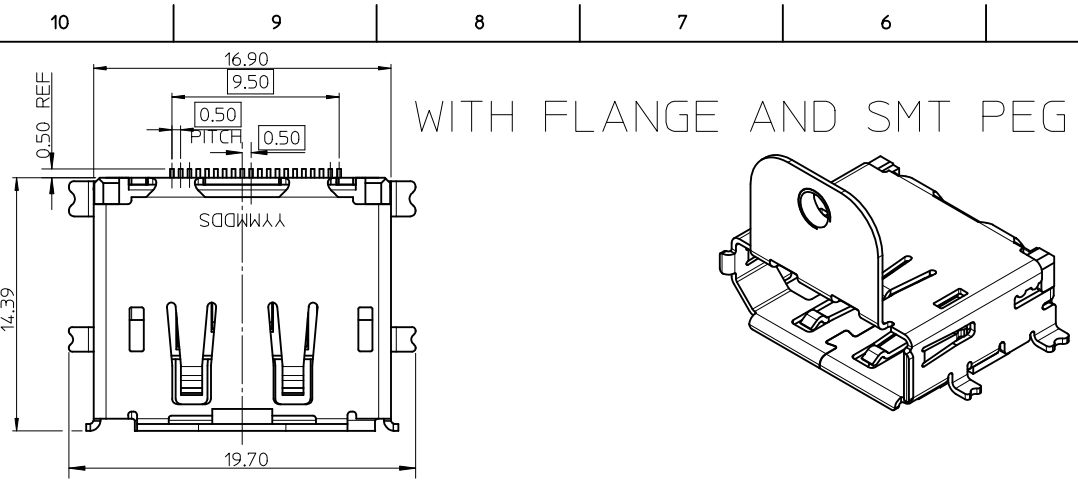
NOTES:  
UNSPECIFIED DIMENSION ARE SAME AS SHEET1

NOTES:  
UNSPECIFIED DIMENSION ARE SAME AS SHEET1

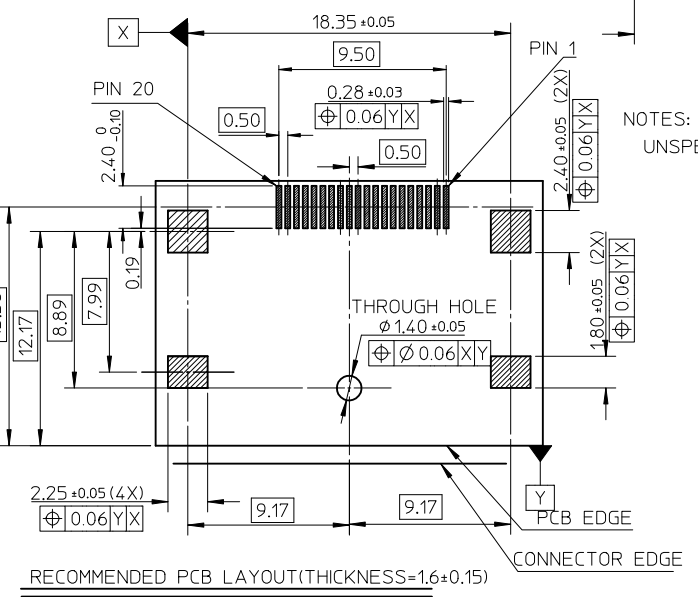


REVISED EC NO: SH2010-0353 DRWN:HHH CHKD:FYANG05 APPR:RZHANG	QUALITY SYMBOLS ▽E=0 ▽E=0 ▽E=0	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY	SCALE 1:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION
		mm	INCH	DRAWN BY RZHANG	DATE 2005/07/01	TITLE 1.0MM PITCH DISPLAY PORT RECEPTACLE ASSEMBLY	
B	DESCRIPTION REV	4 PLACES	± ---	± ---	CHECKED BY IHWANG	DATE 2005/07/01	MOLEX INCORPORATED
		3 PLACES	± ---	± ---	APPROVED BY RZHANG	DATE 2010/03/26	
		2 PLACES	± 0.25	± ---	MATERIAL NO.	DOCUMENT NO.	SHEET NO. 3 OF 8
		1 PLACE	± 0.25	± ---	SEE SHEETS 5	SD-47272-001	
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		ANGULAR ± 3 °		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION			

RECOMMENDED PCB LAYOUT (THICKNESS=1.6±0.15)

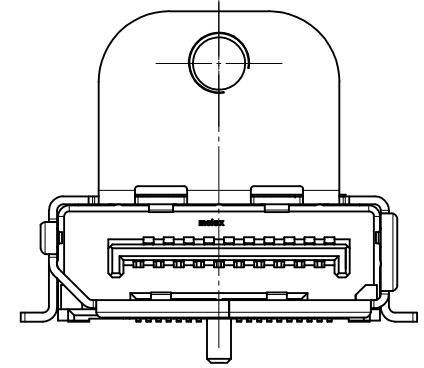
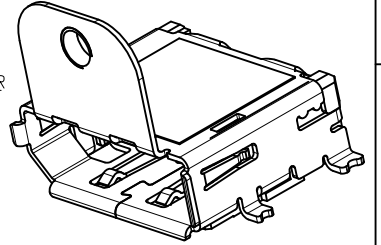
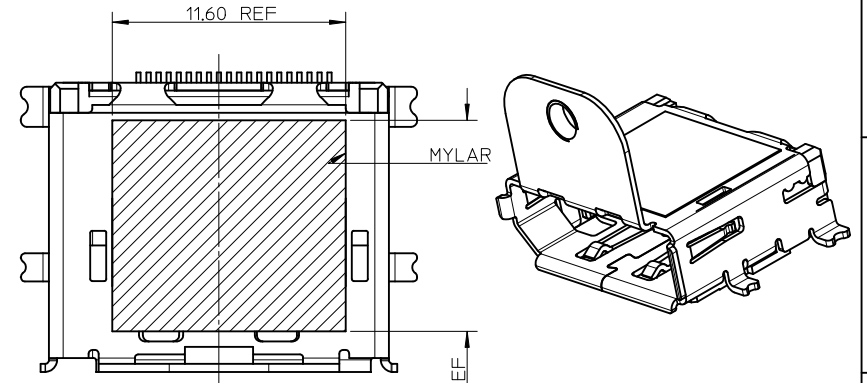


NOTES:  
UNSPECIFIED DIMENSION ARE SAME AS SHEET1



RECOMMENDED PCB LAYOUT (THICKNESS=1.6±0.15)

WITH FLANGE AND MYLAR



NOTES:  
1. UNSPECIFIED DIMENSION ARE SAME AS SHEET1  
2. THE RECOMMENDER PCB ARE SAME AS LEFT RECOMMENDER PCB

<b>REVISED</b> IEC NO: SH2010-0353 DRW: HHE 2010/03/08 CHK: D: FYANG05 2010/03/24 APPR: RZHANG 2010/03/29 REV	<b>QUALITY SYMBOLS</b> $F_{\Delta} = 0$ $F_{\square} = 0$ $F_{\nabla} = 0$	<b>GENERAL TOLERANCES (UNLESS SPECIFIED)</b>		<b>DIMENSION STYLE</b> MM ONLY	<b>SCALE</b> 1:1	<b>DESIGN UNITS</b> METRIC	THIRD ANGLE PROJECTION
		4 PLACES ± --- ± --- 3 PLACES ± --- ± --- 2 PLACES ± 0.25 ± --- 1 PLACE ± 0.25 ± ---	mm    INCH	DRAWN BY: RZHANG    DATE: 2005/07/01 CHECKED BY:    DATE: 2005/07/01 APPROVED BY: RZHANG    DATE: 2010/03/26	TITLE <b>1.0MM PITCH DISPLAY PORT RECEPTACLE ASSEMBLY</b>		
		ANGULAR ± 3 °	MATERIAL NO.	<b>MOLEX INCORPORATED</b>	DOCUMENT NO. <b>SD-47272-001</b>		
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	SIZE <b>A3</b>	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	SHEET NO. <b>4 OF 8</b>		

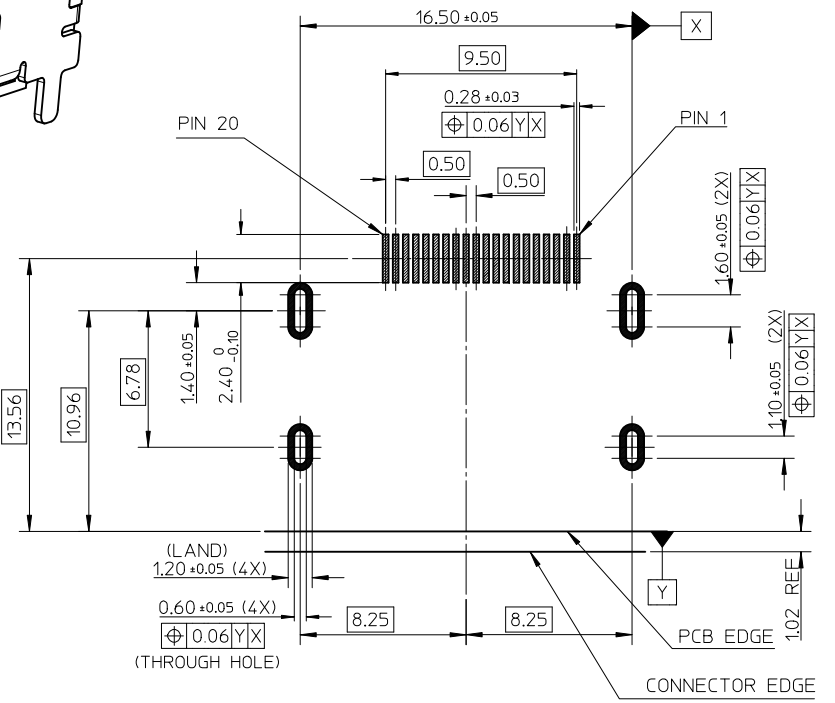
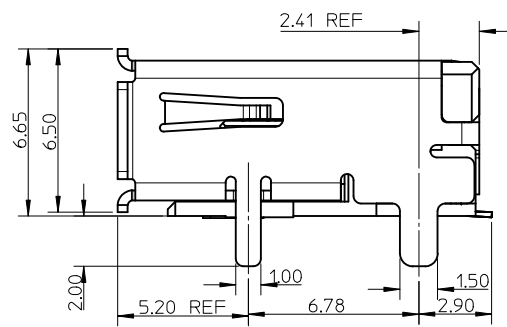
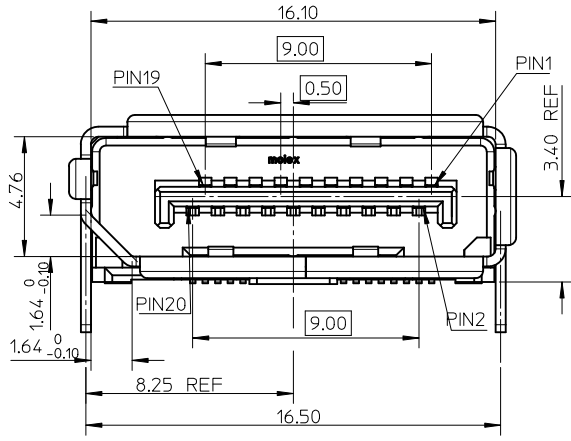
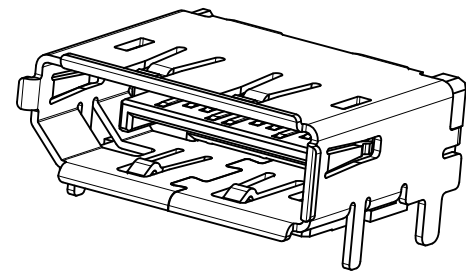
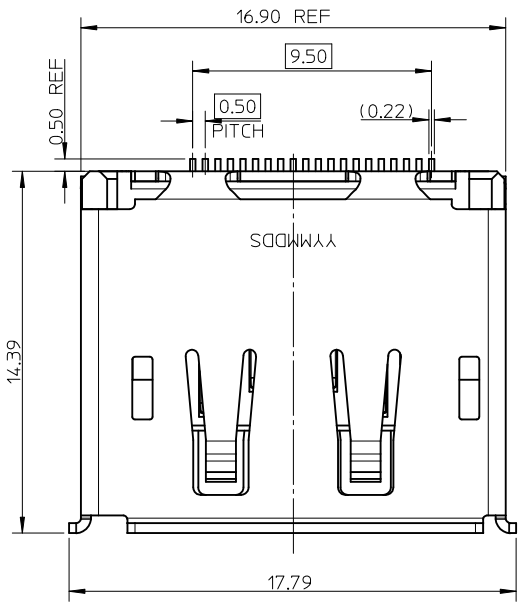
	10	9	8	7	6	5	4	3	2	1		
	ASSEMBLY NO.	WITH COVER	WITH FLANGE	SMT PEG OF SHELL	THROUGH HOLE PEG OF SHELL	PLATING IN CONTACT AREA	SHELL PLATING	WITH LATCH HOLE	MYLAR	POST	PACKAGE METHOD	REMARK
F	47272-0001	WITHOUT	WITHOUT	/	WITH	SEE NOTE2(1)	SEE NOTE2(a)	WITH	WITHOUT	WITH		FOR SHEET 1
	47272-0002	WITHOUT	WITHOUT	/	WITH	SEE NOTE2(1)	SEE NOTE2(a)	WITH	WITHOUT	WITH		
	47272-0011	WITHOUT	WITHOUT	/	WITH	SEE NOTE2(2)	SEE NOTE2(a)	WITH	WITHOUT	WITH		
	47272-0021	WITHOUT	WITHOUT	/	WITH	SEE NOTE2(3)	SEE NOTE2(a)	WITH	WITHOUT	WITH		
E	47272-0003	WITHOUT	WITHOUT	/	WITH	SEE NOTE2(1)	SEE NOTE2(a)	WITHOUT	WITHOUT	WITH		FOR SHEET 2
	47272-1002	WITH	WITHOUT	/	WITH	SEE NOTE2(1)	SEE NOTE2(a)	WITH	WITHOUT	WITH		
	47272-0012	WITH	WITHOUT	/	WITH	SEE NOTE2(2)	SEE NOTE2(a)	WITH	WITHOUT	WITH		
	47272-0022	WITH	WITHOUT	/	WITH	SEE NOTE2(3)	SEE NOTE2(a)	WITH	WITHOUT	WITH		
	47272-0024	WITH	WITHOUT	/	WITH	SEE NOTE2(1)	SEE NOTE2(a)	WITH	WITH	WITH		FOR SHEET 3
D	47272-0004	WITH	WITH	/	WITH	SEE NOTE2(1)	SEE NOTE2(c)	WITH	WITHOUT	WITH		
	47272-1004	WITHOUT	WITH	/	WITH	SEE NOTE2(1)	SEE NOTE2(c)	WITH	WITHOUT	WITH		
	47272-0025	WITHOUT	WITH	/	WITH	SEE NOTE2(1)	SEE NOTE2(c)	WITH	WITH	WITH		
	47272-0028	WITHOUT	WITH	/	WITH	SEE NOTE2(3)	SEE NOTE2(c)	WITH	WITH	WITH		FOR SHEET 4
C	47272-1005	WITHOUT	WITH	SMT PEG	/	SEE NOTE2(1)	SEE NOTE2(c)	WITH	WITHOUT	WITH		
	47272-0023	WITHOUT	WITH	SMT PEG	/	SEE NOTE2(1)	SEE NOTE2(c)	WITH	WITH	WITH		
	47272-0026	WITHOUT	WITHOUT	/	WITH	SEE NOTE2(1)	SEE NOTE2(a)	WITH	WITHOUT	WITHOUT		FOR SHEET 6
	47272-0027	WITH	WITH	/	WITH	SEE NOTE2(1)	SEE NOTE2(c)	WITH	WITH	WITH		FOR SHEET 7
	47272-0201	WITHOUT	WITHOUT	/	WITH	SEE NOTE2(4)	SEE NOTE2(a)	WITH	WITHOUT	WITH		FOR SHEET 1
	47272-0029	WITHOUT	WITHOUT	/	WITH	SEE NOTE2(1)	SEE NOTE2(a)	WITH	WITH	WITH		FOR SHEET 8

B

A	REVISED EC NO: SH2010-0353 DRW: HHE 2010/03/08 CHK: D-FYANG05 2010/03/24 APP: RZHANG 2010/03/29	DESCRIPTION REV	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE	SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION
			$F_V=0$	mm INCH	MM ONLY	1:1	METRIC	
			$F_G=0$	4 PLACES ± --- ± ---	DRAWN BY DATE	TITLE		
			$F_P=0$	3 PLACES ± --- ± ---	RZHANG 2005/07/01	1.0MM PITCH DISPLAY PORT RECEPTACLE ASSEMBLY		
	2 PLACES ± 0.25 ± ---	CHECKED BY DATE	MOLEX MOLEX INCORPORATED					
	1 PLACE ± 0.25 ± ---	APPROVED BY DATE	SD-47272-001					
	ANGULAR ± 3 °	RZHANG 2010/03/26	SHEET NO. 5 OF 8					
	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	MATERIAL NO.	SEE CHART					
		DOCUMENT NO.	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

WITHOUT POST



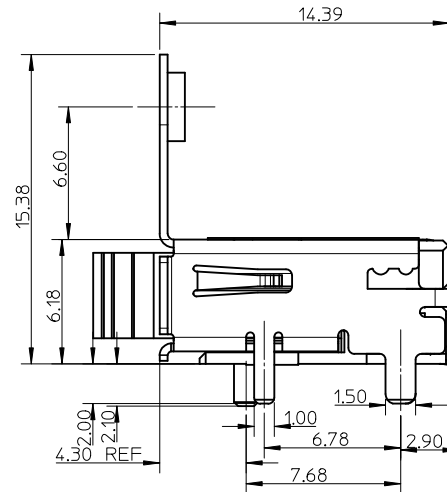
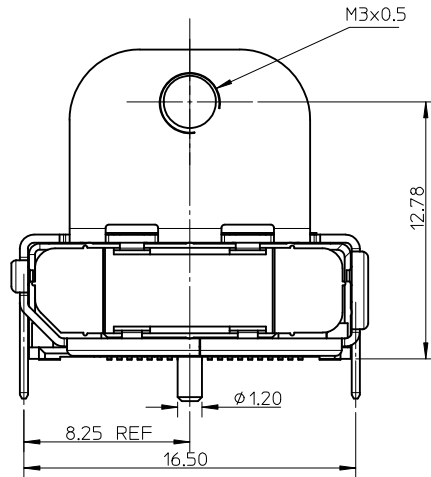
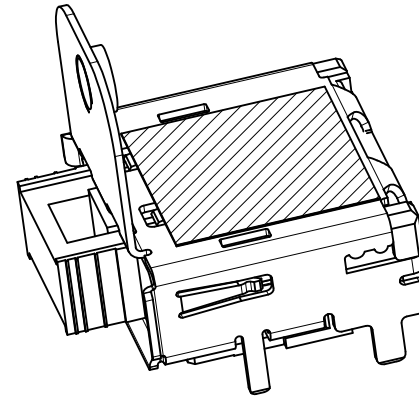
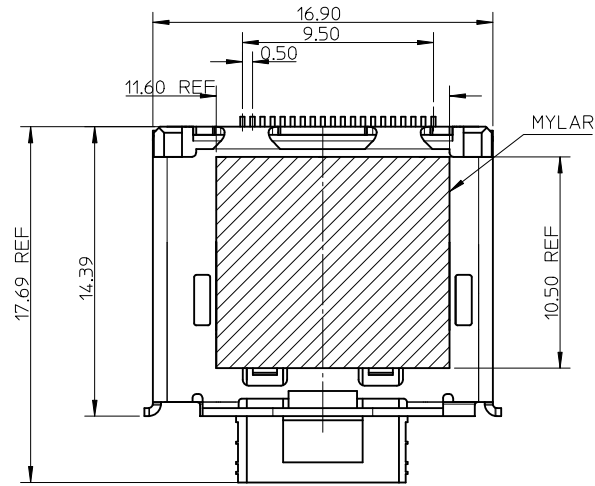
RECOMMENDED PCB LAYOUT (THICKNESS=1.6±0.15)

NOTES:  
UNSPECIFIED DIMENSION ARE SAME AS SHEET1

REVISED EC NO: SH2010-0353 DRW: HHE CHK: FYANG05 APP: RZHANG	2010/03/08	QUALITY SYMBOLS ▽=0 ▽=0 ▽=0	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY	SCALE 1:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION	
	2010/03/24		mm	INCH	DRAWN BY RZHANG	DATE 2005/07/01	TITLE 1.0MM PITCH DISPLAY PORT RECEPTACLE ASSEMBLY		
	2010/03/29		4 PLACES ± --- ± ---	3 PLACES ± --- ± ---	CHECKED BY IWANG	DATE 2005/07/01	MOLEX INCORPORATED		
			2 PLACES ± 0.25 ± ---	1 PLACE ± 0.25 ± ---	APPROVED BY RZHANG	DATE 2010/03/26			
			ANGULAR ± 3 °			MATERIAL NO.	DOCUMENT NO.	SHEET NO.	
			DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SEE SHEETS 5		SD-47272-001	6 OF 8	

9 8 7 6 5 4 3 2 1

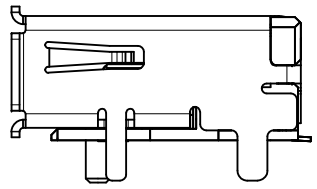
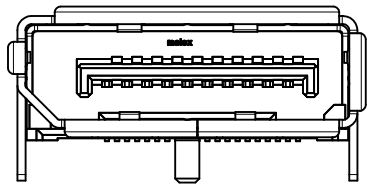
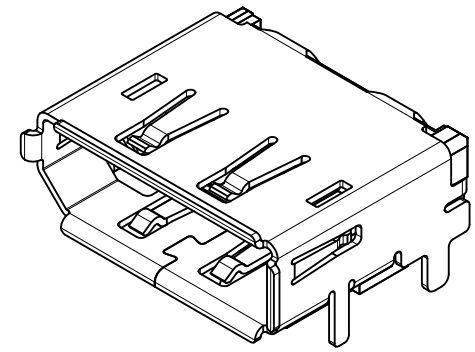
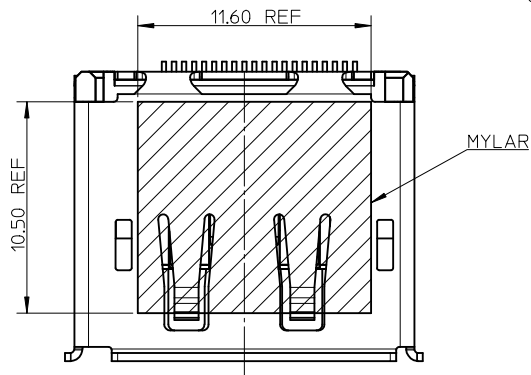




- NOTES:
1. UNSPECIFIC DIMENSION ARE SAME AS SHEET1
  2. THE RECOMMENDER PCB ARE SAME AS SHEET1

REVISED EC NO: SH2010-0353 DRW: HHE 2010/03/08 CHK: D-FYANG05 2010/03/24 APPR: RZHANG 2010/03/29	DESCRIPTION REV	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE	SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION		
			mm	INCH	MM ONLY	1:1	METRIC			
		$\nabla = 0$	4 PLACES ± ---	± ---	DRAWN BY	DATE	TITLE			
		$\nabla = 0$	3 PLACES ± ---	± ---	RZHANG	2005/07/01	1.0MM PITCH DISPLAY PORT RECEPTACLE ASSEMBLY			
	$\nabla = 0$	2 PLACES ± 0.25	± ---	CHECKED BY	DATE	MOLEX INCORPORATED				
	1 PLACE ± 0.25	± ---	IWANG	2005/07/01						
		ANGULAR ± 3 °		APPROVED BY	DATE	DOCUMENT NO.		SHEET NO.		
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		RZHANG	2010/03/26	SD-47272-001		7 OF 8		
				MATERIAL NO.	SEE SHEETS 5					
				SIZE	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION					

STANDARD TYPE WITH MYLAR



- NOTES:  
 1. UNSPECIFIC DIMENSION ARE SAME AS SHEET1  
 2. THE RECOMMENDER PCB ARE SAME AS SHEET1

REVISED EC NO: SH2010-0353 DRWN: HHE CHKD: FYANG05 APPR: RZHANG	2010/03/08 2010/03/24 2010/03/29	DESCRIPTION REV	QUALITY SYMBOLS $\nabla = 0$ $\nabla = 0$ $\nabla = 0$	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE 4:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION		
						mm	INCH	DRAWN BY RZHANG	DATE 2005/07/01	TITLE 1.0MM PITCH DISPLAY PORT RECEPTACLE ASSEMBLY		
						4 PLACES	± ---	± ---	CHECKED BY IWANG			
							3 PLACES	± ---	± ---	APPROVED BY RZHANG	DATE 2010/03/26	MOLEX INCORPORATED DOCUMENT NO. SD-47272-001 SHEET NO. 8 OF 8
				2 PLACES	± 0.25	± ---	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS					
				1 PLACE	± 0.25	± ---	MATERIAL NO. SEE SHEETS 5		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION			
				ANGULAR ± 3 °								

## Данный компонент на территории Российской Федерации

### Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9