

PLEASE CHECK WWW.MOLEX.COM FOR LATEST PART INFORMATION

Part Number: [0471516112](#)
Status: **Active**
Overview: high definition multimedia interface hdmi
Description: 0.50mm (.020") Pitch HDMI* Receptacle, Right Angle, 0.76µm (30µ") Gold (Au) Plating, Front Solder Tab Length 1.45mm (.057"), Shell Nickel (Ni) Plated, with Flange and Back Cover, Black Housing, Tray Packaging, Lead Free

Documents:

[3D Model](#) [Product Specification PS-47152-001 \(PDF\)](#)
[Drawing \(PDF\)](#) [RoHS Certificate of Compliance \(PDF\)](#)

General

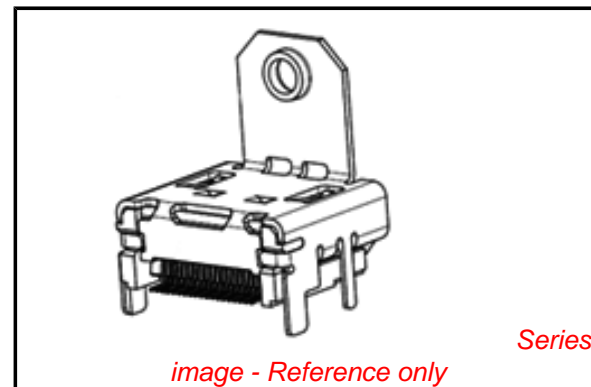
Product Family	I/O Connectors
Series	47151
Application	Wire-to-Board
Component Type	Receptacle
Overview	high definition multimedia interface hdmi
Product Name	HDMI
Type	N/A

Physical

Boot Color	N/A
Circuits (Loaded)	19
Color - Resin	Black
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
Number of Rows	2
Orientation	Right Angle
PCB Locator	No
PCB Retention	Yes
Packaging Type	Tray
Panel Mount	With Flange
Pitch - Mating Interface (in)	0.020 In
Pitch - Mating Interface (mm)	0.50 mm
Pitch - Term. Interface (in)	0.020 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
Waterproof / Dustproof	No
Wire Size AWG	N/A

Electrical

Current - Maximum per Contact	.5A
Shielded	Yes
Voltage - Maximum	40V DC



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
 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

[47151Series](#)

Mates With

[88768](#) HDMI cable assembly, [88764](#) HDMI Adapter, [88767](#) HDMI Adapter

Material Info

Reference - Drawing Numbers

Packaging Specification	PK-47151-002
Product Specification	PS-47152-001
Sales Drawing	SD-47151-001

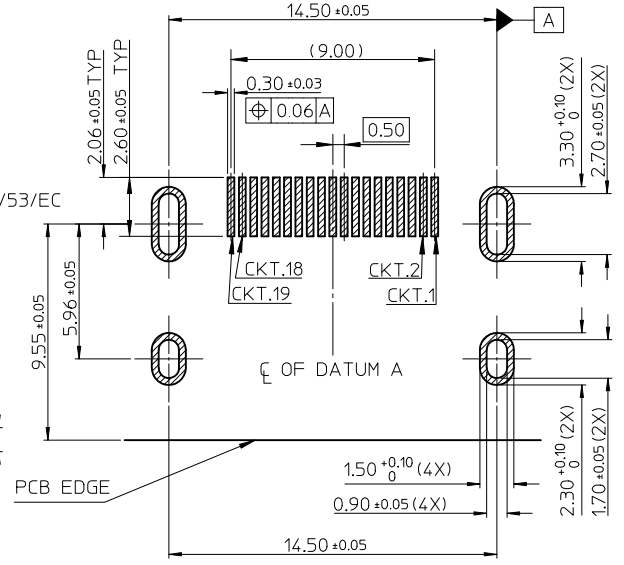
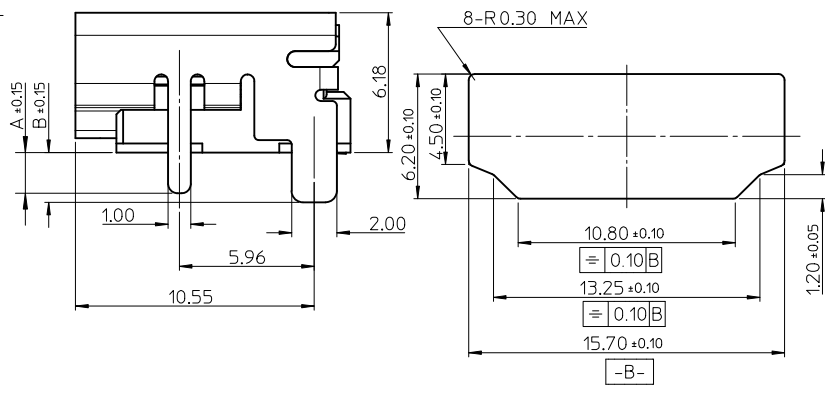
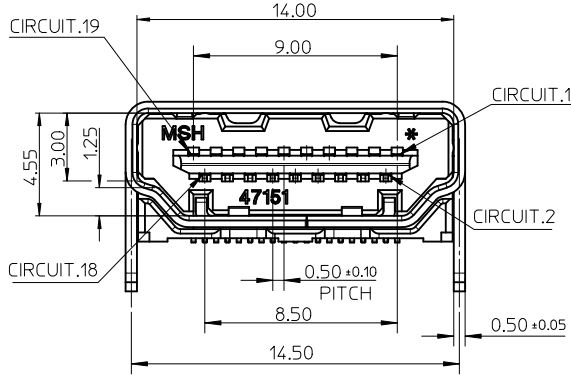
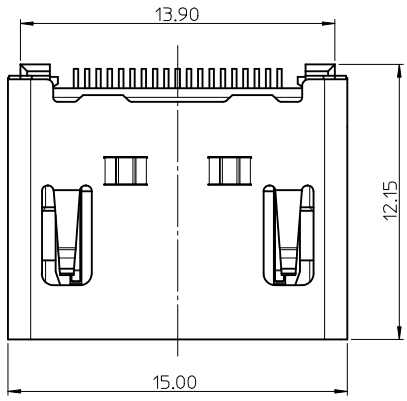
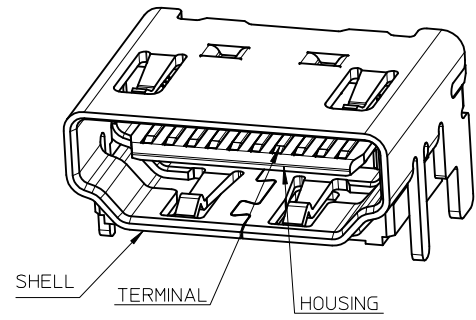
* High Definition Multimedia Interface and HDMI are trademarks of HDMI Licensing, LLC.

This document was generated on 05/19/2010

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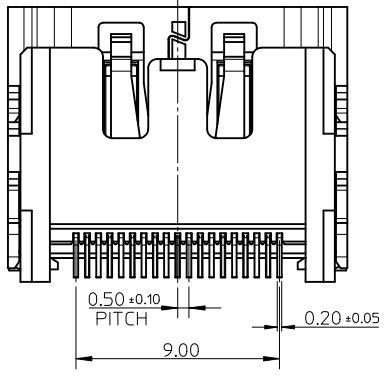
NOTES:

1. MATERIAL:
HOUSING: THERMOPLASTIC . COLOR: SEE TABLE.
SHELL: COPPER ALLOY.
TERMINAL: COPPER ALLOY.
2. PLATING:
TERMINAL:
CONTACT AREA: (1) 0.76 MICROMETER MIN. GOLD PLATING.
(2) 0.25 MICROMETER MIN. GOLD PLATING.
(3) GOLD FLASH.
(4) 0.375 MICROMETER MIN. GOLD PLATING.
SOLDER AREA: 1 MICROMETER MIN. TIN-BISMUTH ALLOY PLATED.
UNDER PLATE: 1.27 MICROMETER MIN. NICKEL.
SHELL: (a) 1.27 MICROMETER MIN. SOLDERABLE NICKEL PLATE OVERALL.
(b) GOLD FLASH PLATING OVER 1.27 MICROMETER MIN. NICKEL PLATING OVERALL.
3. COPLANARITY IS 0.1MM MAX.
4. PRODUCT SPECIFICATION REFER TO PS-47152-001.
5. PACKAGE SPECIFICATION FOR WITHOUT FLANGE REFER TO PK-47151-001.
6. PRODUCT COMPLIANT TO RoHS DEIRECTIVE 2002/95/EC AND ELV DIRECTIVE 2000/53/EC

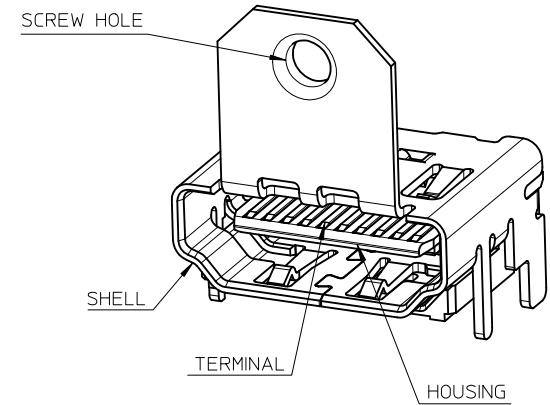
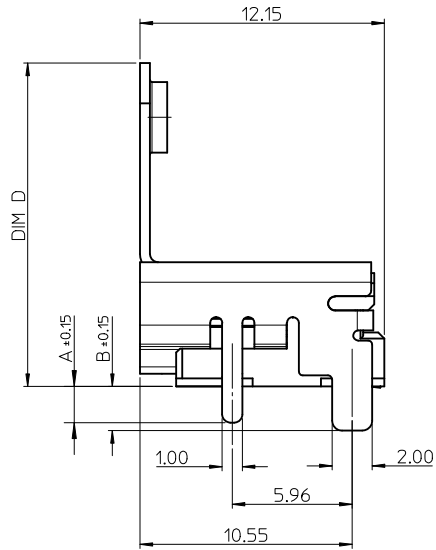
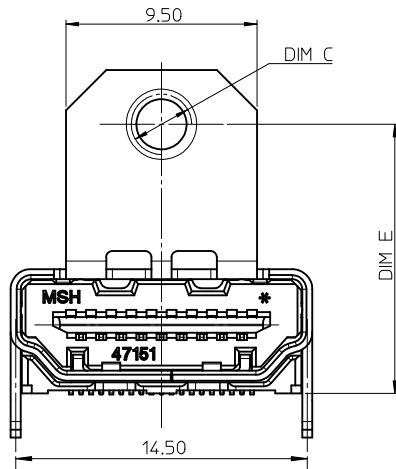
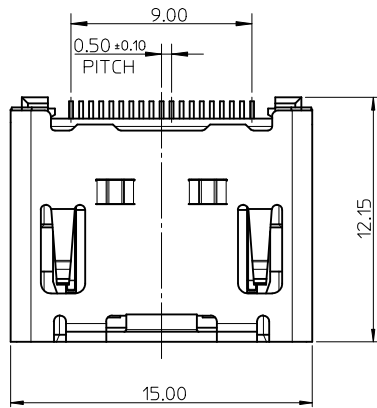


RECOMMENDED PCB LAYOUT
CONNECTOR SIDE

RECOMMENDED PANEL CUT OUT DIMENSION



ADD PART NUMBER EC NO: SH2010-0164 DRWN:XOZHANG 2009/10/20 CHKD:GLLI 2009/10/21 APPR:XJISONG 2009/11/30	QUALITY SYMBOLS F=0 F=0 F=0	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE 5:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION			
		4 PLACES ± --- ± --- 3 PLACES ± --- ± --- 2 PLACES ± 0.25 ± --- 1 PLACE ± 0.25 ± ---	mm INCH	DRAWN BY RZHANG	DATE 2004/07/20	TITLE 1.0 HDMI RIGHT ANGLE HEADER ASSEMBLY(19 PIN) LEAD FREE					
		ANGULAR ± 3 °		CHECKED BY GRMA	DATE 2004/07/20	MOLEX INCORPORATED					
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		APPROVED BY YTYAP	DATE 2004/07/20	MATERIAL NO. SEE SHEET 6		DOCUMENT NO. SD-47151-001	SHEET NO. 1 OF 8		

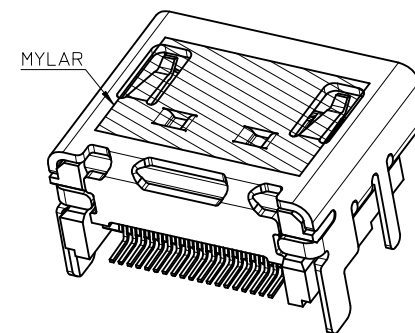
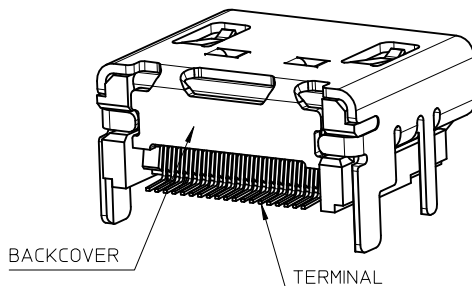
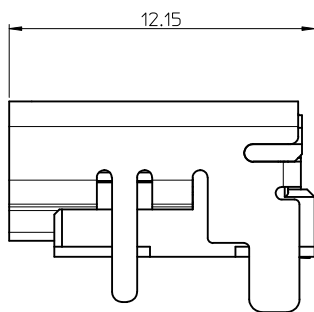
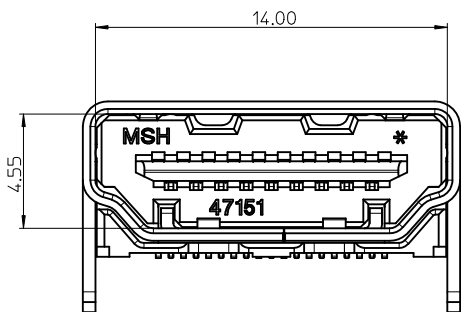
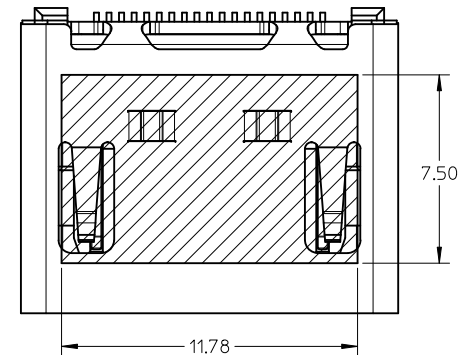
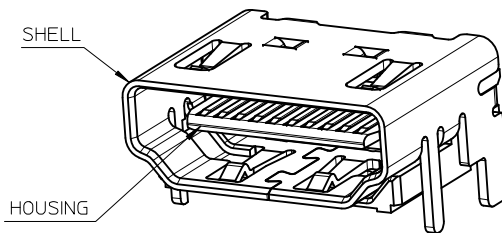
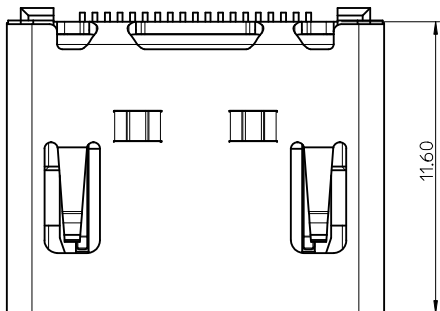


NOTES:

1. THE UNSPECIFIED DIMENSIONS REFER TO SHEET 1.
2. PACKAGE SPECIFICATION FOR WITH FLANGE REFER TO PK-47151-002.

SEE SHEET 1 EC NO: SH2010-0164 DRWN: XQZHANG CHKD: GLLI APPR: XJ SONG	2009/10/20 2009/10/21 2009/11/30	QUALITY SYMBOLS $\nabla_A = 0$ $\nabla_C = 0$ $\nabla_P = 0$	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE 5:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION	
			mm INCH	DRAWN BY RZHANG	DATE 2004/07/20	TITLE 1.0 HDMI RIGHT ANGLE HEADER ASSEMBLY(19 PIN) LEAD FREE				
			4 PLACES ± --- ± --- 3 PLACES ± --- ± --- 2 PLACES ± 0.25 ± --- 1 PLACE ± 0.25 ± ---	CHECKED BY GRMA	DATE 2004/07/20	MOLEX INCORPORATED				
			ANGULAR ± 3 °	APPROVED BY YTYAP	DATE 2004/07/20					MATERIAL NO. SEE SHEET 6
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							

WITH BACK COVER



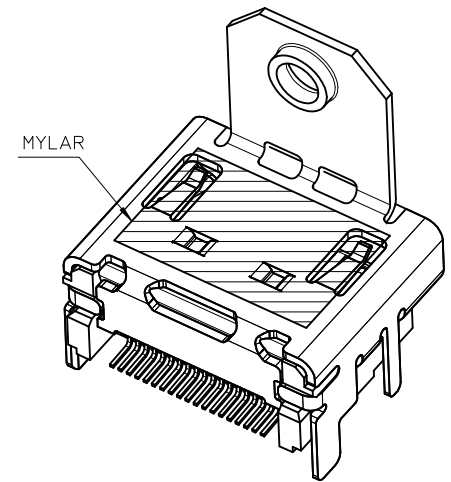
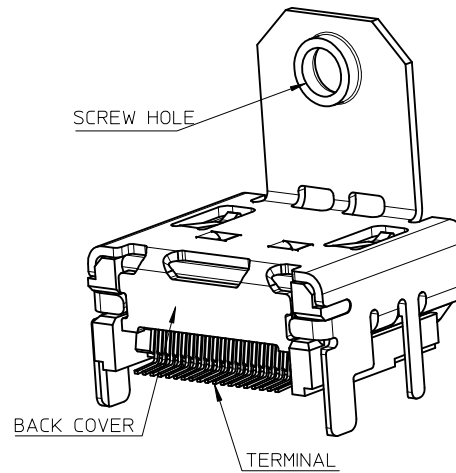
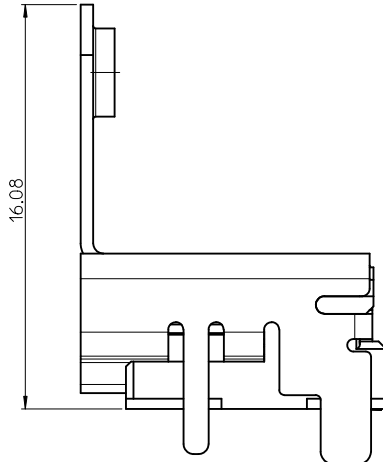
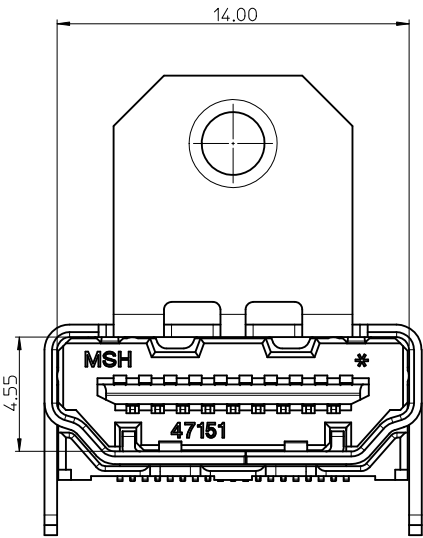
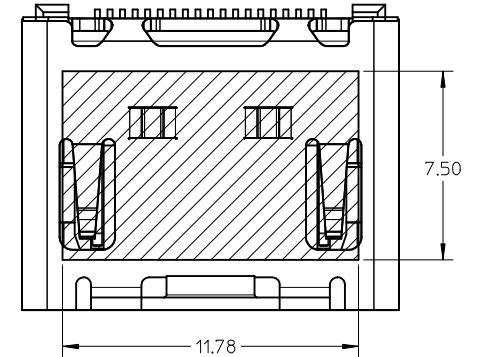
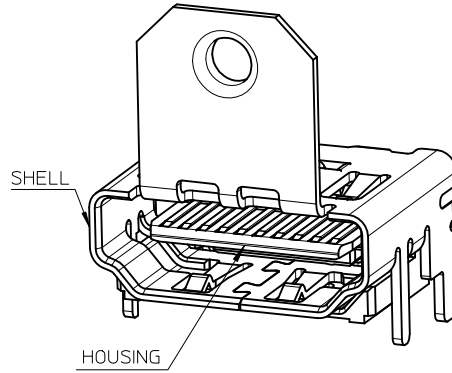
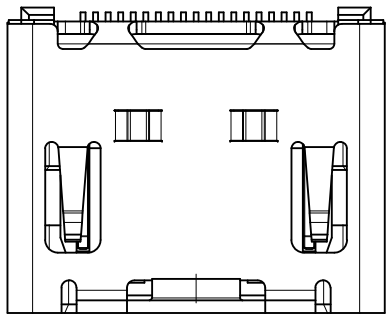
NOTES:

1. THE UNSPECIFIED DIMENSIONS REFER TO 47151-0001.
2. PACKAGE SPECIFICATION FOR WITHOUT FLANGE REFER TO PK-47151-001.

THIS IS ONLY FOR 47151-1061/1071/1081

SEE SHEET 1 EC NO: SH2010-0164 DRWN: XQZHANG CHKD: GLLI APPR: XJSONG	2009/10/20 2009/10/21 2009/11/30	DESCRIPTION REV	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE	SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION	
			$\nabla_{\text{A}}=0$	mm INCH	MM ONLY	5:1	METRIC		
			$\nabla_{\text{E}}=0$	4 PLACES ± --- ± ---	DRAWN BY DATE	TITLE	1.0 HDMI RIGHT ANGLE HEADER ASSEMBLY(19 PIN) LEAD FREE		
			$\nabla_{\text{F}}=0$	3 PLACES ± --- ± ---	RZHANG 2004/07/20				
	2 PLACES ± 0.25 ± ---	CHECKED BY DATE	MOLEX INCORPORATED DOCUMENT NO. SD-47151-001						
	1 PLACE ± 0.25 ± ---	GRMA 2004/07/20							
	ANGULAR ± 3 °	APPROVED BY DATE	SEE SHEET 7 THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION						
	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	YTYAP 2004/07/20							
		MATERIAL NO.	SIZE			SHEET NO.			
			A3			3 OF 8			

WITH BACK COVER

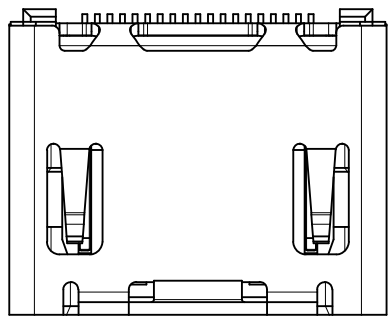


THIS IS ONLY FOR
47151-1025/1075/1085/6022/6032/1026/2062

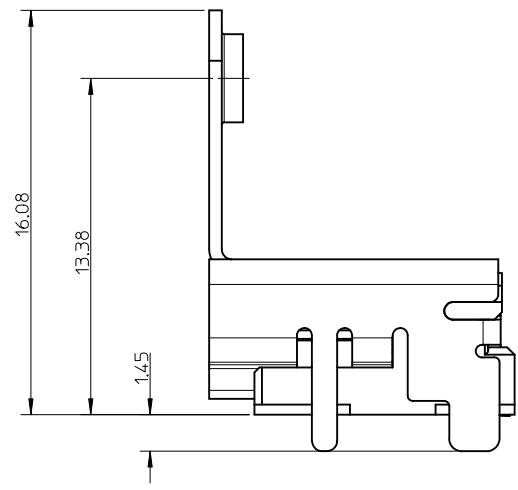
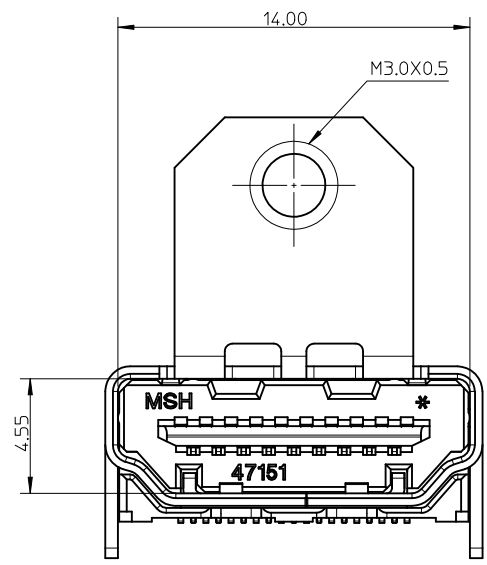
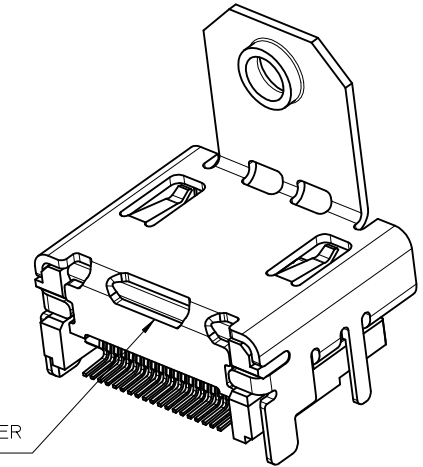
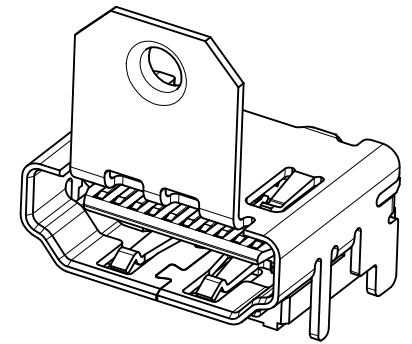
NOTES:

1. THE UNSPECIFIED DIMENSIONS REFER TO 47151-0002.
2. PACKAGE SPECIFICATION FOR WITH FLANGE:
 OPTION 1: 47151-1026/2062/6032 REFER TO PK-47151-005.
 OPTION 2: 47151-1102 REFER TO PK-47151-003.
 OPTION 3: OTHER PART NUMBER REFER TO PK-47151-002.

SEE SHEET 1 EC NO: SH2010-0164 DRW: XQZHANG CHK: GLLI APPR: XJSONG	2009/10/20 2009/10/21 2009/11/30	DESCRIPTION REV	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE	SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION			
			$\nabla_A = 0$ $\nabla_C = 0$ $\nabla_B = 0$	mm INCH 4 PLACES ± --- ± --- 3 PLACES ± --- ± --- 2 PLACES ± 0.25 ± --- 1 PLACE ± 0.25 ± --- ANGULAR ± 3 °	MM ONLY	5:1	METRIC	DRAWN BY: RZHANG CHECKED BY: GRMA APPROVED BY: YTYAP MATERIAL NO.	DATE: 2004/07/20 DATE: 2004/07/20 DATE: 2004/07/20	TITLE: 1.0 HDMI RIGHT ANGLE HEADER ASSEMBLY(19 PIN) LEAD FREE MOLEX INCORPORATED DOCUMENT NO. SD-47151-001	
			DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	SEE SHEET 8	SIZE A3	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION					
											SHEET NO. 4 OF 8



WITHOUT TOP HOLE



- NOTES:
1. THE UNSPECIFIED DIMENSIONS REFER TO 47151-1102.
 2. PACKAGE SPECIFICATION FOR WITH FLANGE REFER TO PK-47151-002.

SEE SHEET 1 IEC NO: SH2010-0164 DRWN: XZHZHANG CH'KD: GLLI APPR: XJ.SONG	2009/10/20 2009/10/21 2009/11/30	QUALITY SYMBOLS $\nabla_F = 0$ $\nabla_E = 0$ $\nabla_B = 0$	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE MM ONLY	SCALE 5:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION																			
			<table border="1"> <thead> <tr> <th></th> <th>mm</th> <th>INCH</th> </tr> </thead> <tbody> <tr> <td>4 PLACES</td> <td>± ---</td> <td>± ---</td> </tr> <tr> <td>3 PLACES</td> <td>± ---</td> <td>± ---</td> </tr> <tr> <td>2 PLACES</td> <td>± 0.25</td> <td>± ---</td> </tr> <tr> <td>1 PLACE</td> <td>± 0.25</td> <td>± ---</td> </tr> <tr> <td colspan="3">ANGULAR ± 3 °</td> </tr> </tbody> </table>		mm	INCH	4 PLACES	± ---	± ---	3 PLACES	± ---	± ---	2 PLACES	± 0.25	± ---	1 PLACE	± 0.25	± ---	ANGULAR ± 3 °			DRAWN BY RZHANG	DATE 2004/07/20	TITLE 1.0 HDMI RIGHT ANGLE HEADER ASSEMBLY(19 PIN) LEAD FREE		
		mm	INCH																							
	4 PLACES	± ---	± ---																							
3 PLACES	± ---	± ---																								
2 PLACES	± 0.25	± ---																								
1 PLACE	± 0.25	± ---																								
ANGULAR ± 3 °																										
			DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	CHECKED BY GRMA	DATE 2004/07/20	MOLEX INCORPORATED	SHEET NO. 5 OF 8																			
				APPROVED BY YTYAP	DATE 2004/07/20	DOCUMENT NO. SD-47151-001																				

ASSEMBLY P/N	DIMENSION					FEATURE				HOUSING COLOUR	GOLD PLATING IN CONTACT AREA	SHELL PLATING	REMARK		
	DIM A	DIM B	DIM C	DIM D	DIM E	FLANGE	BACK COVER	TOP HOLES	MYLAR						
47151-0001	1.80	2.20	/	/	/	W/O	W/O	WITH	W/O	BLACK	SEE NOTE 2 (1)	SEE NOTE 2 (a)	FOR SHEET 1		
47151-0041															
47151-0051															
47151-0011															
47151-0071															
47151-0061															
47151-0021															
47151-0031															
47151-0101	1.45	1.45	/	/	/	W/O	W/O	WITH	W/O	BLACK	SEE NOTE 2 (1)	SEE NOTE 2 (a)		FOR SHEET 2	
47151-0141															
47151-0151															
47151-0111															
47151-0181															
47151-0161															
47151-0121															
47151-0131															
47151-0002	1.80	2.20	M3.0x0.5	16.08	13.38	WITH	W/O	WITH	W/O	BLACK	SEE NOTE 2 (1)	SEE NOTE 2 (a)	FOR SHEET 2		
47151-0042															
47151-0062															
47151-0012															
47151-0052															
47151-0072															
47151-0022															
47151-0032															
47151-0102	1.45	1.45	M3.0x0.5	16.08	13.38	WITH	W/O	WITH	W/O	BLACK	SEE NOTE 2 (1)	SEE NOTE 2 (a)		FOR SHEET 2	
47151-0142															
47151-0162															
47151-0112															
47151-0152															
47151-0172															
47151-0122															
47151-0132															
47151-6002	1.80	2.20	M3.0x0.5	14.25	11.28	WITH	W/O	WITH	W/O	BLACK	SEE NOTE 2 (1)	SEE NOTE 2 (a)	FOR SHEET 2		
47151-6062															
47151-6082															
47151-6102	1.45	1.45	M3.0x0.5	14.25	11.28	WITH	W/O	WITH	W/O	BLACK	SEE NOTE 2 (1)	SEE NOTE 2 (a)			FOR SHEET 2
47151-6172															
47151-6162															

SEE SHEET 1 EC NO: SH2010-0164 DRWN:XOZHANG CHKD:GLL APPR:XJ.SONG	QUALITY SYMBOLS $F_A=0$ $F_C=0$ $F_P=0$	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE 1:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION	
		4 PLACES ± --- ± ---	mm INCH	DRAWN BY RZHANG	DATE 2004/07/20	TITLE 1.0 HDMI RIGHT ANGLE HEADER ASSEMBLY(19 PIN) LEAD FREE			
		3 PLACES ± --- ± ---		CHECKED BY GRMA	DATE 2004/07/20	MOLEX INCORPORATED			
		2 PLACES ± 0.25 ± --- 1 PLACE ± 0.25 ± ---		APPROVED BY YTYAP	DATE 2004/07/20	DOCUMENT NO. SD-47151-001			
ANGULAR ± 3 °		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		MATERIAL NO. SEE TABLE		SHEET NO. 6 OF 8		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	

ASSEMBLY P/N	DIMENSION					FEATURE				HOUSING COLOUR	GOLD PLATING IN CONTACT AREA	SHELL PLATING	REMARK
	DIM A	DIM B	DIM C	DIM D	DIM E	FLANGE	BACK COVER	TOP HOLES	MYLAR				
47151-1001	1.80	2.20	/	/	/	W/O	WITH	WITH	W/O	BLACK	SEE NOTE 2 (1)	SEE NOTE 2 (a)	FOR SHEET 3
47151-1041											SEE NOTE 2 (2)		
47151-1051											SEE NOTE 2 (3)		
47151-1003											SEE NOTE 2 (4)		
47151-1061									SEE NOTE 2 (1)				
47151-1071									SEE NOTE 2 (2)				
47151-1081									SEE NOTE 2 (3)				
47151-1011									SEE NOTE 2 (1)				
47151-1211									SEE NOTE 2 (2)				
47151-1311									SEE NOTE 2 (3)				
47151-1021									W/O	NATURE	SEE NOTE 2 (1)		
47151-1091											SEE NOTE 2 (3)		
47151-1031											SEE NOTE 2 (1)		
47151-1101									1.45	1.45	/		
47151-1141	SEE NOTE 2 (2)												
47151-1151	SEE NOTE 2 (3)												
47151-1111	SEE NOTE 2 (1)												
47151-1161	SEE NOTE 2 (2)												
47151-1171	SEE NOTE 2 (3)												
47151-1121	SEE NOTE 2 (1)												
47151-1131	SEE NOTE 2 (1)												
47151-7102	1.45	1.45	M3.0x0.5	16.08	13.38	WITH	WITH	W/O	W/O	BLACK	SEE NOTE 2 (1)	SEE NOTE 2 (a)	FOR SHEET 5
47151-7142											SEE NOTE 2 (2)		
47151-7162											SEE NOTE 2 (3)		

SEE SHEET 1 EC NO: SH2010-0164 DRWN: XZHANG 2009/10/20 CHKD: GLLI 2009/10/21 APPR: XJISONG 2009/11/30	QUALITY SYMBOLS $\nabla_A = 0$ $\nabla_B = 0$ $\nabla_C = 0$	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE 1:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION			
			4 PLACES \pm --- \pm --- 3 PLACES \pm --- \pm --- 2 PLACES \pm 0.25 \pm --- 1 PLACE \pm 0.25 \pm ---	mm INCH	DRAWN BY RZHANG	DATE 2004/07/20	TITLE 1.0 HDMI RIGHT ANGLE HEADER ASSEMBLY(19 PIN) LEAD FREE				
		ANGULAR \pm 3 °		CHECKED BY GRMA	DATE 2004/07/20	APPROVED BY YTYAP		DATE 2004/07/20	MOLEX INCORPORATED		
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		MATERIAL NO. SEE TABLE		DOCUMENT NO. SD-47151-001		SHEET NO. 7 OF 8			

ASSEMBLY P/N	DIMENSION					FEATURE				HOUSING COLOUR	GOLD PLATING IN CONTACT AREA	SHELL PLATING	REMARK								
	DIM A	DIM B	DIM C	DIM D	DIM E	FLANGE	BACK COVER	TOP HOLES	MYLAR												
47151-1002	1.80	2.20	M3.0x0.5	16.08	13.38	WITH	WITH	WITH	W/O	BLACK	SEE NOTE 2 (1) SEE NOTE 2 (2) SEE NOTE 2 (3) SEE NOTE 2 (4)	SEE NOTE 2 (a)	FOR SHEET 4								
47151-1042																					
47151-1052																					
47151-1062																					
47151-2062																					
47151-1012									W/O	NATURE	SEE NOTE 2 (1) SEE NOTE 2 (2) SEE NOTE 2 (3)										
47151-1072																					
47151-1082																					
47151-1022														BLACK	SEE NOTE 2 (1)						
47151-1032																NATURE	SEE NOTE 2 (1)				
47151-1102	1.45	1.45	M3.0x0.5	16.08	13.38	WITH	WITH	WITH	W/O	BLACK	SEE NOTE 2 (1) SEE NOTE 2 (2) SEE NOTE 2 (3) SEE NOTE 2 (1)	SEE NOTE 2 (a)									
47151-1142																					
47151-1152																					
47151-1112																					
47151-1162														NATURE	SEE NOTE 2 (2) SEE NOTE 2 (3)						
47151-1172																					
47151-1122									BLACK	SEE NOTE 2 (1)											
47151-1132											NATURE	SEE NOTE 2 (1)									
47151-1005									1.80	2.20	4-40	16.08				13.38	WITH	WITH	WITH	W/O	BLACK
47151-1045																					
47151-1065																					
47151-1015																					
47151-1035	NATURE	SEE NOTE 2 (1) SEE NOTE 2 (2) SEE NOTE 2 (3)																			
47151-1055																					
47151-1025			WITH	BLACK	SEE NOTE 2 (1) SEE NOTE 2 (2) SEE NOTE 2 (3) SEE NOTE 2 (1)																
47151-1075																					
47151-1085																					
47151-1026																					
47151-6012	1.80	2.20				M3.0x0.5	14.25	11.28	WITH	WITH	WITH	W/O		BLACK	SEE NOTE 2 (1) SEE NOTE 2 (2) SEE NOTE 2 (3)	SEE NOTE 2 (a)					
47151-6042																					
47151-6052																					
47151-6022			WITH	BLACK	SEE NOTE 2 (1) SEE NOTE 2 (3)																
47151-6032																					
47151-6112												W/O		BLACK	SEE NOTE 2 (1) SEE NOTE 2 (2) SEE NOTE 2 (3)						
47151-6142																					
47151-6152																					

SEE SHEET 1 EC NO: SH2010-0164 DRWN: XZHUANG 2009/10/20 CH'KD: GLLI 2009/10/21 APPR: XJISONG 2009/11/30	QUALITY SYMBOLS $F_{\Delta} = 0$ $F_{\Delta} = 0$ $F_{\Delta} = 0$	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY	SCALE 1:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION		
		4 PLACES \pm --- \pm --- 3 PLACES \pm --- \pm --- 2 PLACES \pm 0.25 \pm --- 1 PLACE \pm 0.25 \pm ---	mm INCH	DRAWN BY RZHANG	DATE 2004/07/20	TITLE 1.0 HDMI RIGHT ANGLE HEADER ASSEMBLY(19 PIN) LEAD FREE			
		ANGULAR \pm 3 °		CHECKED BY GRMA	DATE 2004/07/20	MOLEX INCORPORATED			
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		APPROVED BY YTYAP	DATE 2004/07/20	MATERIAL NO. SEE TABLE	DOCUMENT NO. SD-47151-001	SHEET NO. 8 OF 8	