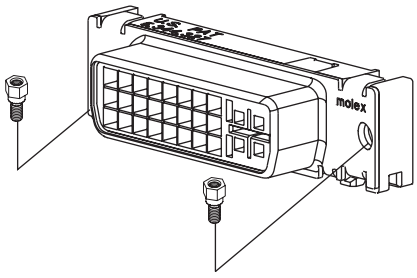
Jameco Part Number 1933890

MicroCross™ DVI-A Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Vertical



Order No.	Plating	Lead-free
74320-3008	30µ" Gold	Yes
74320-3009	Gold Flash	

Please contact Molex for additional tail length options

Features and Benefits

- Supports analog signal and offers excellent EMI/RFI performance
- Plug and play interface
- LFH™ contact design is rugged and reliable
- DDWG DVI standard interface compliant
- The MicroCross coaxial section supports a high bandwidth up to 2.5 GHz analog signal
- Selectively loaded circuits reduce cost

Reference Information

Product Specification: PS-74320-001
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980
Mates with: 88741, 74323 and other plug components
Designed In: Inches

Electrical

Voltage: 40V
Current: 3.0A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min.
Insertion Force to PCB: 10 lb. max.
Mating Force: 10 lb. max.
Unmating Force: 2.2 lb. min.
Durability: 100 cycles

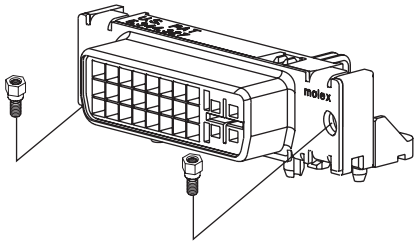
Physical

Housing: Glass-filled thermoplastic, UL 94V-0
Contact: Copper Alloy
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall
Shields—100µ" bright Tin over Copper overall
Operating Temperature: -20 to +85˚C

MicroCross™ DVI-A Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Right Angle



Order No.	Plating	Lead-free
74320-1008	30µ" Gold	Yes
74320-1009	Gold Flash	

Please contact Molex for additional tail length options

Features and Benefits

- Supports analog signal and offers excellent EMI/RFI performance
- Plug and play interface
- LFH™ contact design is rugged and reliable
- DDWG DVI standard interface compliant
- The MicroCross coaxial section supports a high bandwidth up to 2.5 GHz analog signal
- Selectively loaded circuits reduce cost

Reference Information

Product Specification: PS-74320-001
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980
Mates with: 88741, 74323 and other plug components
Designed In: Inches

Electrical

Voltage: 40V
Current: 3.0A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min.
Insertion Force to PCB: 10 lb. max.
Mating Force: 10 lb. max
Unmating Force: 2.2 lb. min.
Durability: 100 cycles

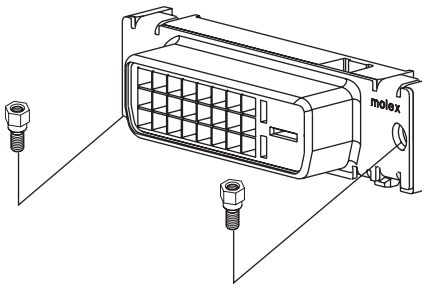
Physical

Housing: Glass-filled thermoplastic, UL 94V-0
Contact: Copper Alloy
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall
Shields—100µ" bright Tin over Copper overall
Operating Temperature: -20 to +85˚C

MicroCross™ DVI-D Digital Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Vertical



Order No.	Plating	Lead-free
74320-5000	30µ" Gold	Yes
74320-5004	Gold Flash	

Features and Benefits

- Supports digital signals and offers excellent EMI/RFI performance
- Plug and play interface
- LFH™ contact design is rugged and reliable
- DDWG DVI standard interface
- Supports 4.95 Gbps over a single link and 9.9 Gbps performance over a dual link implementation
- Narrow key slot for polarization

Reference Information

Product Specification: PS-74320-001
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980
Mates with: Versions of 88741, 74323 and other plug components
Designed In: Inches

Electrical

Voltage: 40V
Current: 3.0A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1,000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min.
Insertion Force to PCB: 10 lb. max.
Mating Force: 10 lb. max.
Unmating Force: 2.2 lb. min.
Durability: 100 cycles

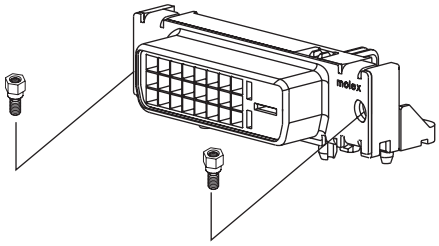
Physical

Housing: Glass-filled thermoplastic, UL 94V-0
Contact: Copper Alloy
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall
Shields—100µ" bright Tin over Copper overall
Operating Temperature: -20 to +85˚C

MicroCross™ DVI-D Digital Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Right Angle



Order No.	Plating	Lead-Free
74320-4000	30µ" Gold	Yes
74320-4004	Gold Flash	

Please contact Molex for additional tail length options

Features and Benefits

- Supports digital signals and offers excellent EMI/RFI performance
- Plug and play interface
- LFH™ contact design is rugged and reliable
- DDWG DVI standard interface
- Supports 4.95 Gbps over a single link and 9.9 Gbps performance over a dual link implementation
- Narrow key slot for polarization

Reference Information

Product Specification: PS-74320-001
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980
Mates With: Versions of 88741, 74323 and other plug components
Designed In: Inches

Electrical

Voltage: 40V
Current: 3.0A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min.
Insertion Force to PCB: 10 lb. max.
Mating Force: 10 lb. max.
Unmating Force: 2.2 lb. min.
Durability: 100 cycles

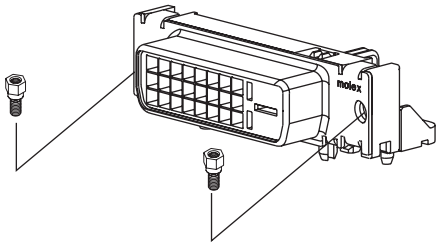
Physical

Housing: Glass-filled thermoplastic, UL 94V-0
Contact: Copper Alloy
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall
Shields—100µ" bright Tin over Copper overall
Operating Temperature: -20 to +85˚C

MicroCross™ DVI-D Digital Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Right Angle ATX with Forklocks



Order No.	Plating	Lead-free
74320-9000	30µ" Gold	Yes
74320-9004	Gold Flash	

Please contact Molex for additional tail length options

Features and Benefits
- Supports digital signals and offers excellent EMI/RFI performance
- Plug and play interface
- LFH™ contact design is rugged and reliable
- DDWG DVI standard interface
- Supports 4.95 Gbps over a single link and 9.9 Gbps performance over a dual link implementation
- Narrow key slot for polarization

Reference Information
Product Specification: PS-74320-001
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980
Mates with: Versions of 88741, 74323 and other plug components
Designed In: Inches

Electrical
Voltage: 40V
Current: 3.0A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1,000 Megohms min.

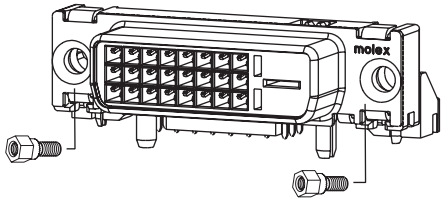
Mechanical
Contact Retention to Housing: 1 lb. min.
Insertion Force to PCB: 10 lb. max.
Mating Force: 10 lb. max.
Unmating Force: 2.2 lb. min.
Durability: 100 cycles

Physical
Housing: Glass-filled thermoplastic, UL 94V-0
Contact: Copper Alloy
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall
Shields—100µ" bright Tin over Copper overall
Operating Temperature: -20 to +85˚C

MicroCross™ DVI-D Digital Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Extended Height Right Angle



Order No.	Plating	Lead-free
74320-2010	Gold Flash	Yes
74320-2011	30µ" Gold	

Please contact Molex for additional tail length options

Features and Benefits
- Supports digital signals and offers excellent EMI/RFI performance
- Plug and play interface
- LFH™ contact design is rugged and reliable
- DDWG DVI standard interface
- Supports 4.95 Gbps over a single link and 9.9 Gbps over a dual link implementation
- Narrow key slot for polarization

Reference Information
Product Specification: PS-74320-001
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980
Mates with: Versions of 88741, 74323 and other plug components
Designed in: Inches

Electrical
Voltage: 40V
Current: 3.0A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1000 Megohms min.

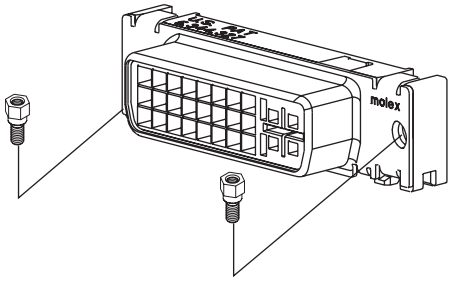
Mechanical
Contact Retention to Housing: 1 lb min.
Insertion Force to PCB: 10 lb max.
Mating Force: 10 lb max.
Unmating Force: 2.2 lb min.
Durability: 100 cycles

Physical
Housing: Glass-filled thermoplastic, UL 94V-0
Contact: Copper Alloy
Plating: Contact —30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall
Shields—100µ" bright Tin over Copper overall
Operating Temperature: -20 to +85˚C

MicroCross™ DVI-I Digital/Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Vertical



Order No.	Plating	Lead-free
74320-3000	30µ" Gold	Yes
74320-3004	Gold Flash	

Please contact Molex for additional tail length options

Features and Benefits
- Supports both analog and digital signals
- Plug and play interface
- Excellent EMI/RFI performance
- LFH™ contact design is rugged and reliable
- DDWG DVI standard interface
- The digital section supports 4.95 Gbps over a single link and 9.9 Gbps over a dual link.
- The MicroCross coax section supports a high-bandwidth of up to 2.5 GHz analog signal

Reference Information
Product Specification: PS-74320-001
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980
Mates with: 88741, 74323 and other plug components
Designed In: Inches

Electrical
Voltage: 40V
Current: 3.0A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1000 Megohms min.

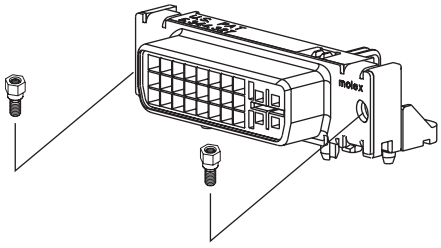
Mechanical
Contact Retention to Housing: 1 lb. min.
Insertion Force to PCB: 10 lb. max.
Mating Force: 10 lb. max.
Unmating Force: 2.2 lb. min.
Durability: 100 cycles

Physical
Housing: Glass-filled thermoplastic, UL 94V-0
Contact: Copper Alloy
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall
Shields—100µ" bright Tin over Copper overall
Operating Temperature: -20 to +85˚C

MicroCross™ DVI-I Digital/Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Right Angle



Order No.	Plating	Lead-free
74320-1000	30µ" Gold	Yes
74320-1004	Gold Flash	

Please contact Molex for additional tail length options

Features and Benefits
- Supports both analog and digital signals
- Plug and play interface
- Excellent EMI/RFI performance
- LFH™ contact design is rugged and reliable
- DDWG DVI standard interface
- The digital section supports 4.95 Gbps over a single link and 9.9 Gbps over a dual link.
- The MicroCross coax section supports a high-bandwidth of up to 2.5 GHz analog signal

Reference Information
Product Specification: PS-74320-001
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980
Mates With: 88741, 74323 and other plug components
Designed In: Inches

Electrical
Voltage: 40V
Current: 3.0A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1000 Megohms min.

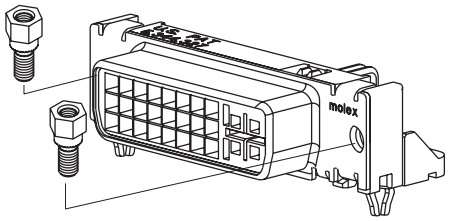
Mechanical
Contact Retention to Housing: 1 lb. min.
Insertion Force to PCB: 10 lb. max.
Mating Force: 10 lb. max.
Unmating Force: 2.2 lb. min.
Durability: 100 cycles

Physical
Housing: Glass-filled thermoplastic, UL 94V-0
Contact: Copper Alloy
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall
Shields—100µ" bright Tin over Copper overall
Operating Temperature: -20 to +85˚C

MicroCross™ DVI-I Digital/Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Right Angle with Forklocks



Order No.	Plating	Lead-free
74320-9010	30µ" Gold	Yes
74320-9014	Gold Flash	

Please contact Molex for additional tail length options

Features and Benefits

- Supports both analog and digital signals
- Excellent EMI/RFI performance
- Plug and play interface
- LFH™ contact design is rugged and reliable
- DDWG DVI standard interface
- The digital section supports 4.95 Gbps over a single link and 9.9 Gbps over a dual link
- The MicroCross coax section supports a high-bandwidth of up to 2.5 GHz analog signal

Reference Information

Product Specification: PS-74320-001
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980
Mates with: 88741, 74323 and other plug components
Designed In: Inches

Electrical

Voltage: 40V
Current: 3.0A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min.
Insertion Force to PCB: 10 lb. max.
Mating Force: 10 lb. max.
Unmating Force: 2.2 lb. min.
Durability: 100 cycles

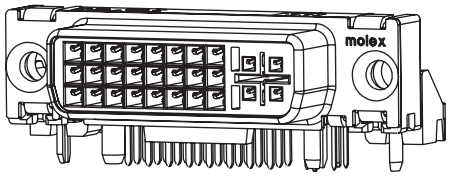
Physical

Housing: Glass-filled thermoplastic, UL 94V-0
Contact: Copper Alloy
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall
Shields—100µ" bright Tin over Copper overall
Operating Temperature: -20 to +85˚C

MicroCross™ DVI-I Digital/Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount, Through Hole, Extended Height Right Angle



Order No.	Plating	Lead-free
74320-2020	Gold Flash	Yes
74320-2021	30µ" Gold	

Contact Molex for additional tail length options.

Features and Benefits

- Supports both analog and digital signals
- Plug and play interface
- Excellent EMI/RFI performance
- LFH™ contact design is rugged and reliable
- DDWG DVI standard interface
- The digital section supports 4.95 Gbps over a single link and 9.9 Gbps over a dual link
- The MicroCross coax section supports a high-bandwidth of up to 2.5 GHz analog signal

Reference Information

Product Specification: PS-74320-001
Packaging: Tray
UL File No.: E29179
CSA File No.: LR19980
Mates With: 88741, 74323 and other plug components
Designed In: Inches

Electrical

Voltage: 40V
Current: 3.0A
Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb min.
Insertion Force to PCB: 10 lb max.
Mating Force: 10 lb max.
Unmating Force: 2.2 lb min.
Durability: 100 cycles

Physical

Housing: Glass-filled thermoplastic, UL 94V-0
Contact: Copper Alloy
Plating: Contact —30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall
Shields—100µ" bright Tin over Copper overall
Operating Temperature: -20 to +85˚C

1.0 Scope

This specification covers the Molex MicroCross™ - Digital Visual Interface (DVI) system which includes cable plugs and board mount receptacles (Right Angle and Vertical).

The Digital Visual Interface connector system supports both analog and digital video transmission.

This specification covers the DVI cable to board, I/O connector system with requirements as set forth by Molex Incorporated.

2.0 Product Description

The MicroCross™ DVI system is designed to meet the industry's requirements for analog and digital computer monitors. There are (2) different receptacle connectors which correspond to the video support present on the host system (mother board/graphics cards). The DVI-D (Digital) receptacle connector supports hosts systems that transmit digital video. The DVI-I (Intergrated) receptacle connector supports host systems that are enabled to transmit both analog and digital video. This is achieved by utilizing two different sets of contacts as shown in Figure 1 below:

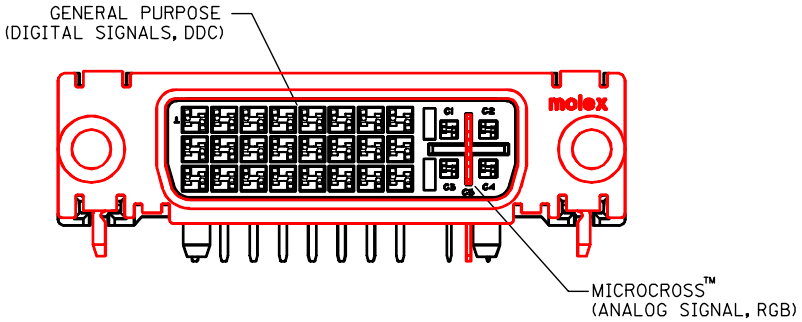


Figure 1: Two sets of contacts
(DVI-I Shown)

REV	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
SHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

REVISE ON PC ONLY

REV	DESCRIPTION
J	REVISED PER EC# T2003-0134 TONY ZHANG 02/11/22

TITLE: MicroCross™ - DVI I/O Plug and Receptacle Connector System

DESIGN CONTROL	STATUS	WRITTEN BY:	CHECKED BY:	APPROVED BY:	DATE: YR / MO / DAY
UDT	M	SCHMIDGA			

DOCUMENT NO.	FILE NAME	SHT NO.
PS-74320-001	PS74320.LWP	1 OF 17

1. General purpose signals:
   Terminals: 24 circuits on a 0.075 inch/1.91 mm grid
   Signals: Includes power, grounds, digital and video signals, analog synch lines and DDC (Display Data Channel) signals.

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data2-	9	T.M.D.S. Data1-	17	T.M.D.S. Data 0-
2	T.M.D.S. Data2+	10	T.M.D.S. Data1+	18	T.M.D.S. Data 0+
3	T.M.D.S. Data2/4 Shield	11	T.M.D.S. Data 1/3 Shield	19	T.M.D.S. Data 0/5 Shield
4	T.M.D.S. Data 4-	12	T.M.D.S. Data 3-	20	T.M.D.S. Data 5-
5	T.M.D.S. Data 4+	13	T.M.D.S. 3+	21	T.M.D.S. Data 5+
6	DDC Clock	14	+5 V Power	22	T.M.D.S. Clock Shield
7	DDC Data	15	Ground (for +5V)	23	T.M.D.S. Clock+
8	No Connect	16	Hot Plug Detect	24	T.M.D.S. Clock-

Table 1: Digital-Only Connector Pin Assignments
Source: Digital Visual Interface Specification, Revision 1.0

2. MicroCross™:
   a) Plug and Receptacle - I - Intergrated analog/digital - see figure 3, sheet 4
      Terminals: 4 circuits on a 0.100 inch/2.54 mm grid with a crossing ground plane in between.
      Signals: High frequency, 75 ohm, analog video
   b) Plug and Receptacle - D - Digital Version
      Terminals: A single key on the plug and corresponding slot on the receptacle.
      Signals: The key is used for mechanical polarization only, it does not carry any electrical signals.

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data 2-	9	T.M.D.S. Data 1-	17	T.M.D.S. Data 0-
2	T.M.D.S. Data 2+	10	T.M.D.S. Data 1+	18	T.M.D.S. Data 0+
3	T.M.D.S. Data 2/4 Shield	11	T.M.D.S. Data 1/3 Shield	19	T.M.D.S. Data 0/5 Shield
4	T.M.D.S. Data 4-	12	T.M.D.S. Data 3-	20	T.M.D.S. Data 5-
5	T.M.D.S. Data 4+	13	T.M.D.S. Data 3+	21	T.M.D.S. Data 5+
6	DDC Clock	14	+5V Power	22	T.M.D.S. Clock Shield
7	DDC Data	15	Ground (return for +5V, HSync, and VSync)	23	T.M.D.S. Clock+
8	Analog Vertical Sync	16	Hot Plug Detect	24	T.M.D.S. Clock-
C1	Analog Red	C2	Analog Green	C3	Analog Blue
C4	Analog Horizontal Sync	C5	Analog Ground (analog R, G, & B return)		

Table 2: Combined Analog and Digital Connector Pin Assignments
Source: Digital Visual Interface, Revision 1.0

Additional general specifications are:

Plug:

-LFH (Low Force Helix) style contacts
-fully shielded RFI/EMI can
-grounding detents on mating shell
-solder tails for cable termination
-positive retention jackscrew: thread 4-40 UNC-2A

Receptacle:

-high cycle, dual beam, LFH shrouded contacts
-polarization achieved by a "D" shaped housing/shield
-single piece shield with integral ground leg
-shield protrudes for ESD considerations
-solder tails for thru hole board mount
-plastic retention pegs
-jackposts: # 4-40 UNC-2A&B threads. The recommended application torque setting is 4 lbf in maximum. To prevent stripping the shield threads while installing the jackposts, it is recommended the jackposts are started by hand or with a lower initial torque driver setting. The engaged threads are rated to hold a minimum of 5 lbf in of torque.

2.1 Product Drawing Numbers

2.1.1 Receptacle:

The DVI receptacle is for systems which support digital video (DVI-D) or both analog and digital video (DVI-I).

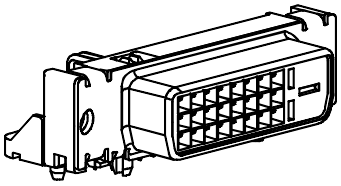


Figure 2:
Right Angle DVI-D version
(Digital)

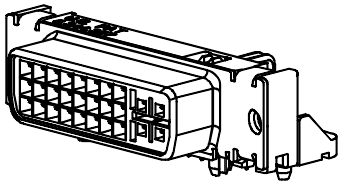


Figure 3:
Right Angle DVI-I version
Intergrated(Analog/Digital)

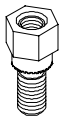


Figure 4: Jackpost

2.1.2 DVI Plug

The DVI plug is for systems which use analog or digital video. The analog DVI plug shown below supports analog video transmission from the host to the display.

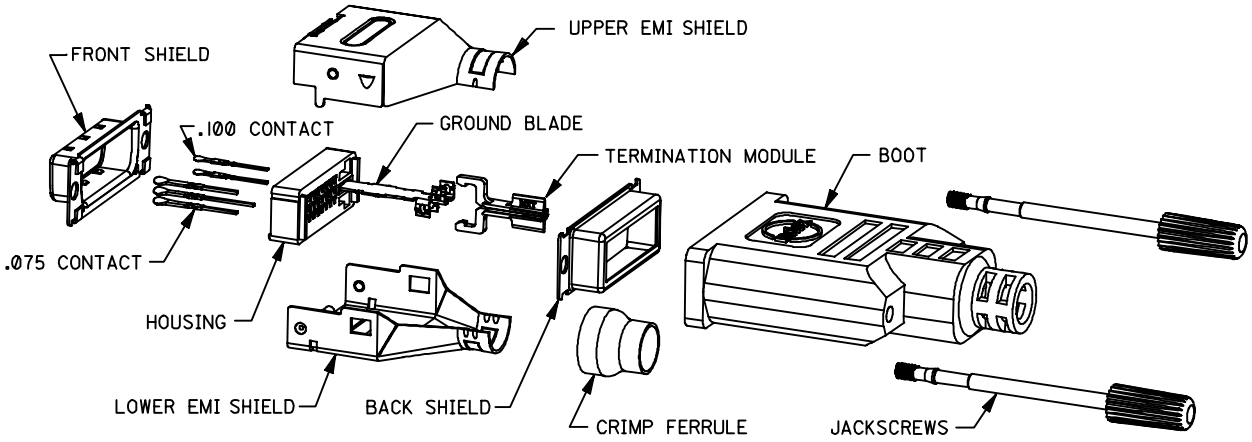


Figure 5:
Analog Version

2.1.3
The digital DVI plug shown below supports digital video tr ansmission from the host to the display.

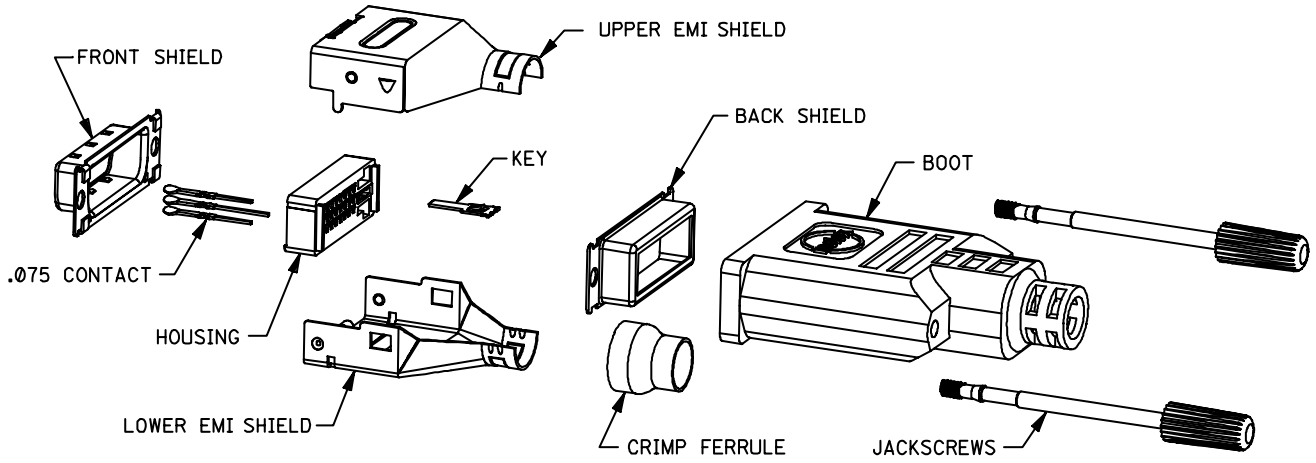


Figure 6:
Digital Version

2.2 Safety Agency Approvals
UL File Number ..... E29179, Volume 10, Section 12
CSA File Number LR19980

3.0 Applicable Documents and Specifications
3.1 All documents referenced shall be of the latest revision. The order of precedence detailing requirements of this specification is as follows:
1. Product Drawings 2. This specification

3.2 Reference Documents
3.2.1 EIA RS-364-(06,09,13,17,18,20,21,23,27,28,31,32,41,46,65,67,70,90) Electronic Industries Association, Recommended Standard

3.2.2 IEC-801-2 International Electrotechnical Commission, Electrostatic Discharge Requirements
3.2.3 MIL STD-202: Test methods for electronics and electrical component parts
3.2.4 Molex PS-74320-9999 Application Specification, DVI Plug Cable Assembly
3.2.5 Molex ES-74320-9998 Termination Specification, DVI Cable Assemblies
3.2.6 Molex PS-74320-9997 Cable Assembly Specification
3.2.7 UL 94: Tests for flammability of plastics materials

4.0 Ratings

4.1 Voltage

40 Volts AC (RMS)

4.2 Current

3.0 Amps per circuit.
30 ^{O}C maximum temperature rise and 55 ^{O}C maximum ambient per EIA-364-70.

4.3 Temperature

Operating: - 20 ^{O}C to + 85 ^{O}C
Nonoperating: - 20 ^{O}C to + 85 ^{O}C

5.0 Performance

5.1 Electrical Performance

ITEM	TEST CONDITION	REQUIREMENT
Contact Resistance	Bulk resistance measured between plug solder tails and receptacle solder tails per ANSI/EIA-364-23	20 milliohm maximum, initial per contact mated pair 10 milliohm maximum change from initial reading per contact mated pair
Shell Resistance	Bulk resistance measured between ground leg on receptacle shield and the plug cable braid. Test current=100mA; Test voltage=5 Volts DC open circuit maximum per ANSI/EIA-364-06A-83	50 milliohm maximum initial 50 milliohm maximum change from initial reading
Insulation Resistance	Test voltage = 500 Volts DC +/- 50 V Unmated and Unmounted per ANSI/EIA 364-21, Method C	1Gigaohm Minimum between adjacent contacts and contacts and shell
Dielectric Withstanding Voltage	Test voltage = 500 Volts DC +/-50 V Unmated and Unmounted per ANSI/EIA 364-20, Method C Barometric pressure of 15 psi	No flashover, No sparkover, No excess leakage, No Breakdown
Contact Current Rating	Maximum ambient = 55 degree C Maximum temperature change = 85 degree C per ANSI/EIA-364-70, TP-70	3.0 A maximum
Applied Voltage Rating		40 Volts AC (rms) continuous maximum, on any signal pin with respect to the shield
Electrostatic Discharge	Test unmated from 1 kV to 8kV in 1 kV steps using 8mm ball prob per IEC 801-2 Contact discharge to shell Air discharge perpendicular to shell Air discharge at angle to shell	No evidence of discharge to contacts at 8kV. Discharge to the shell is acceptable.
T.M.D.S. Signals Time Domain Impedance	Risetime = 330 pS (10%-90%) S:G ratio per DVI pin designation Differential Measurement Specimen Environment Impedance = 100 ohm differential Source-side receptacle connector mounted on a controlled impendance pcb fixture per ANSI/EIA-364-108 draft Proposal	100 ohms +/-15%

T.M.D.S. Signals Time Domain Crosstalk: FEXT	Risetime = 330 pS (10%-90%) S:G ratio per DVI pin designation Differential Measurement Specimen Environment Impedance = 100 ohm differential Source-side receptacle and the load side plug connector are mounted on a controlled impedance pcb fixture (1) Driven pair and (1) victim pair per ANSI/EIA-364-90 Draft Proposal	5% Maximum
T.M.D.S. Signals Rise Time Degradation	S:G ratio per DVI pin designation Differential Measurement Specimen Environment Impedance = 100 ohm differential Source-side receptacle and the load side plug connector are mounted on a controlled impedance pcb fixture per ANSI/EIA-364-102 Draft Proposal	160 pS Maximum (Note: Converted bandwidth using BW=0.35/t rise yields 2.2 GHz)
Analog RGB Coaxial Signals Time Domain Impedance	Risetime = 700 pS (10%-90%) S:G ratio per DVI pin designation Single-ended Measurement Specimen Enviroment Impedance = 75 ohm single-ended Source-side receptacle connector mounted on a controlled impedence pcb fixture per ANSI/EIA-364-108 Draft Proposal	75 ohms +/-10%
Analog RGB Coaxial Signals Time Domain Crosstalk: (FEXT)	Risetime = 700 pS (10%-90%) S:G ratio per DVI pin designation Single-ended Measurement Specimen Enviroment Impedance = 75 ohm single-ended Source-side receptacle connector is mounted on a controlled impedance pcb fixture and the load side plug connector is terminated to semi-rigid coax. (1) Driven line and (1) victim line per ANSI/EIA-364-90 Draft Proposal	3% Maximum
Analog RGB Coaxial Signals Rise Time Degradation	S:G ratio per DVI pin designation Single-ended Measurement Specimen Environment Impedance = 75 ohm single-ended Source-side receptacle connector is mounted on a controlled impedance pcb fixture and the load side plug connector is terminated to semi-rigid coax. per ANSI/EIA-364-102	140pS Maximum (Note: Converted bandwidth using BW=0.35/t rise yields 2.5 GHz)

5.2 Mechanical Performance

ITEM	TEST CONDITION	REQUIREMENT
Mating Force	One pair per ANSI/EIA 364-13 Insertion speed: 1inch (25mm) per minute	10.0 lbf (4.5 kgf) maximum
Unmating Force	Mated pair per ANSI/EIA 364-13 Withdraw speed: 1inch (25mm) per minute	2.2 lbf (1.0 kgf) minimum 8.8 lbf (4.0 kgf) maximum
Receptacle Contact Retention	Individual contact	1.0 lbf (0.45 kgf) minimum
Receptacle Key Retention	Individual key	2.0 lbf (0.90 kgf) minimum
Plug Contact Retention	Push out from mating face; Individual contact	10 lbf (4.5 kgf) minimum
Plug Key Retention	Push out from mating face; Individual key	10 lbf (4.5 kgf) minimum
Durability	Automatic cycling: 100 cycles per ANSI/EIA 364-09 at 100 +/- 50 cycles per hour	Contact Resistance per EIA 364-23: 10 milliohm maximum change from initial per contact pair All samples to be mated Shell Resistance: 50 milliohm maximum (change from initial reading)
Vibration	15 minutes / axis per ANSI/EIA 364-28, Method 5A	No discontinuities at 1 microsecond or longer (each contact) when continuity is tested per EIA-364-46
Shock (Mechanical)	Per ANSI/EIA 364-27, Condition A (specified pulse)	No discontinuities at 1 microsecond or longer (each contact) when continuity is tested per EIA-364-46
Cable Pullout Force	Test for cable strain relief & termination intergrity. Cable subjected to 25.0 lbf (11.3 kgf) static load for one minute while monitoring continuity. Isolate plug & receptacle interface from load.	No discontinuities greater than 1 microsecond
Board Insertion Force		10.0 lbf (4.5 kgf) maximum
Cable Flex	100 cycles in each of 2 planes Dimension X=3.7x Cable Diameter per ANSI/EIA 364-41, Condition I	No discontinuities greater than 1 microsecond allowed during flexing on contacts or shields per EIA-364-46 Dielectric Withstanding Voltage and Insulation Resistance tested per requirements of section 5.1
Normal Force	For reference only	.050" pitch terminals: 75 grams typical .075" pitch terminals: 90 grams typical Ground Plane: 100 grams typical
Thread Torque	Mounted to panel; Test to failure; Tighten jackposts with torque gage until threads are stripped and jackpost turns freely	5.0 lbf in (5.76 kgf cm) minimum

5.3 Environmental Performance

ITEM	TEST CONDITION	REQUIREMENT
Thermal Shock	10 cycles Mated/Unmated per ANSI/EIA 364-32, Condition I	Contact Resistance: **10** milliohm maximum change from initial per contact pair All samples to be mated Shell Resistance: **50** milliohm maximum change from initial per EIA-364-23
Humidity (Cyclic)	ANSI/EIA 364-31, Conditions A and B Method III, omit 7A and 7B	Contact Resistance: **10** milliohm maximum change from initial per contact pair All samples to be mated Shell Resistance: **50** milliohm maximum change from initial per EIA-364-23
Thermal Aging	105 ^{O}C for 250 hours Mated per ANSI/EIA 364-17, Condition 4, Method A.	Contact Resistance: **10** milliohm maximum change from initial per contact pair All samples to be mated Shell Resistance: **50** milliohm maximum change from initial per contact pair per EIA-364-23
Temperature Rise	Per ANSI/EIA 364-70	30 ^{O}C maximum temperature rise
Resistance to Solder Heat	Dip connector solder tails to board for 10 seconds Solder Temp = 260 +/- 5 ^{O}C	No visual damage to insulator
Solderability	Per MIL-STD-202, Method 208	95% minimum coverage
Temperature Rating	Operating	-20 degree C to +85 degree C
Temperature Rating	Non-Operating	-20 degree C to +85 degree C

6.0 Packaging

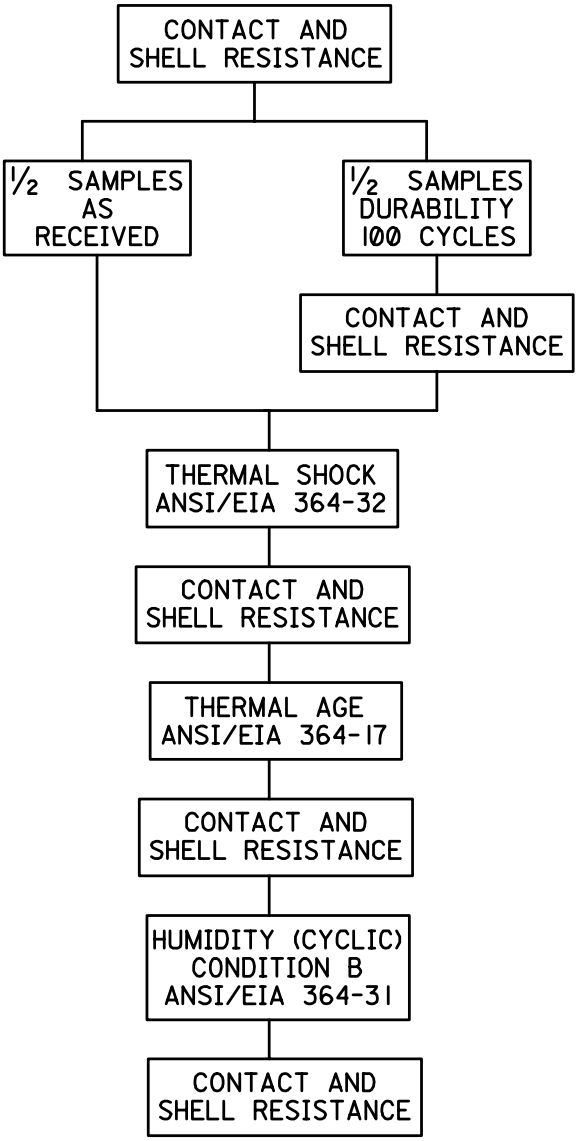
6.1 Receptacles:

All receptacles are packaged in trays. For specific packaging information , refer to PK-74320-001 for right angle receptacles and PK-74320-002 for vertical receptacles.

7.0 Other Information

7.1 Test Sequences

Group 1 : Mated Environmental

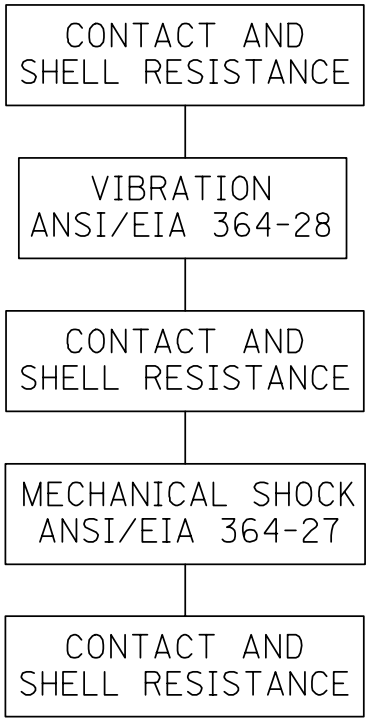


Number of samples

(5) Receptacle assembled to printed circuit board.

(5) Cable assemblies with a plug assembled to one end, 10 inch/25.4 cm long

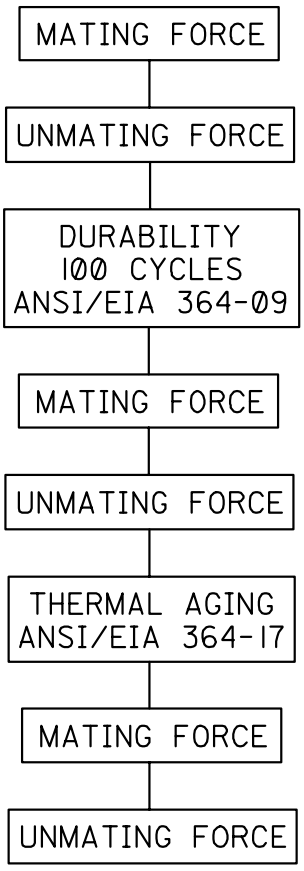
Group 2 : Mated Mechanical



Number of Samples:
(2) Receptacles, assembled to printed circuit board.
(2) Cable assemblies with a plug assembled to one end, 10 inch/25.4 cm long.

Note: Connector is to be mounted on a fixture that simulates the typical application. The receptacle connector shall be mounted to a panel, per the receptacle panel cutout shown in Figure 12, which is permanently affixed to the fixture. The plug shall be mated to the receptacle with jackscrews fully engaged and the other end of the cable shall be permanently clamped to the fixture, 3 inches from connector face.

Group 3 : Mated Mechanical

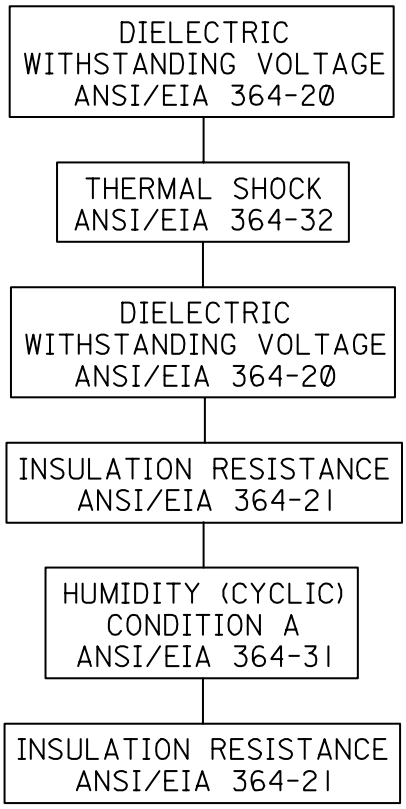


Number of Samples:

(2) Receptacles, assembled to printed circuit board.

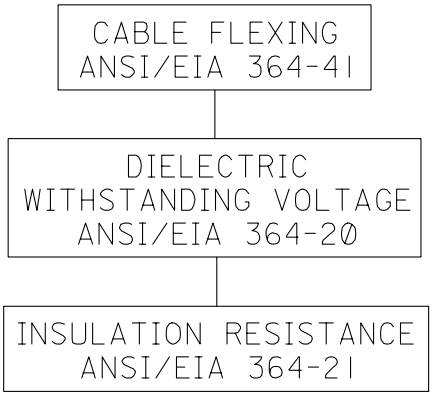
(2) Cable assemblies with a plug assembled to one end, 10 inch/25.4 cm long.

Group 4 : Insulator Intergrity



Number of Samples:
(2) Receptacles, assembled to printed circuit board.
(2) Cable assemblies with a plug assembled to one end, 10 inch/25.4 cm long

Group 5 : Cable Flexing



Number of Samples:
(2) Cable assemblies

Group 6: Electrostatic Discharge

Number of Samples:
(1) Receptacle connector

SINGLE LINE MODEL

DVI SINGLE LINE ELECTRICAL MODEL

1.0 PRODUCT

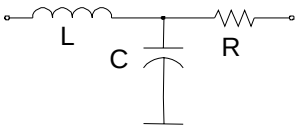
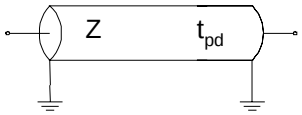
TRADE NAME: DVI / P&D CONNECTOR
SERIES: 74320

2.0 MODEL DESCRIPTION

THIS SINGLE LINE MODEL (SLM) CAN BE USED FOR MOST BASIC ELECTRICAL ANALYSIS. THIS SLM WILL ONLY REPRESENT THE CONNECTOR RESPONSE TO GAUSSIAN WAVEFORMS WITH RISETIMES **AT 830 PICOSECONDS** AND SLOWER. THIS SLM SHOULD NOT BE USED TO EVALUATE CROSSTALK OR GROUND BOUNCE. THIS SLM CAN BE USED IN SIMULATION PROGRAMS THAT SUPPORT IBIS (INPUT/OUTPUT BUFFER INFORMATION SPECIFICATION) OR SPICE (SIMULATION PROGRAM WITH INTEGRATED CIRCUIT EMPHASIS). FOR ANALYSIS WITH FASTER RISETIME SIMULATIONS, PLEASE CONTACT MOLEX INCORPORATED FOR AVAILABILITY OF A MULTI-LINE MODEL (MLM).

SINGLE LINE MODEL

3.0 MODEL INFORMATION

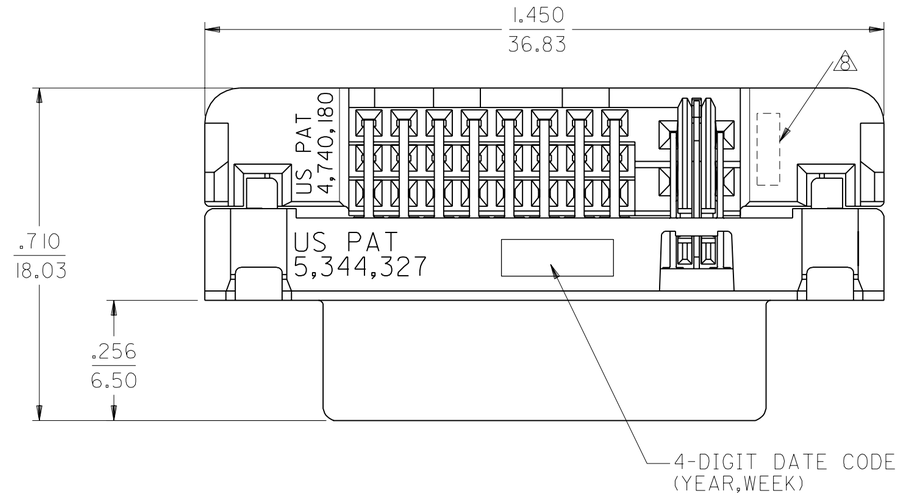
			Lumped				Distributed	
								
Row	**Column**	**Signal to Ground Ratio(1) S:G**	**Loop Inductance L** (nH)	**Capacitance C** (pF)	**Resistance R** (mΩ)	**Data Source (2)**	**Impedance** $Z=\sqrt{\frac{L}{C}}$ (Ω)	**Propagation Delay** $t_{pd}=\sqrt{LC}$ (ps)
C	1	2:1	8.96	2.96	12.0	T	55.0	162.9
B	6	2:1	6.92	2.58	10.0	T	51.8	133.6
A	8	2:1	6.11	2.35	8.0	T	51.0	119.8

(1) N/A = Not Applicable due to ground plane (when present).
(2) E = Empirical (measured); T = Theoretical (mathematical).
(3) Unmated = No Board Effects.

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
A	EC No: **UDT2002-1335** DATE: **2002 / 05 / 05**	**SINGLE LINE MODEL FOR DVI/ P&D CONNECTOR**	**2** of **2**

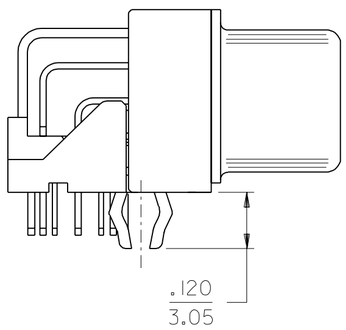
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
SLM-74320-001	**CAPADONA**	**DUNHAM**	**DUNHAM**

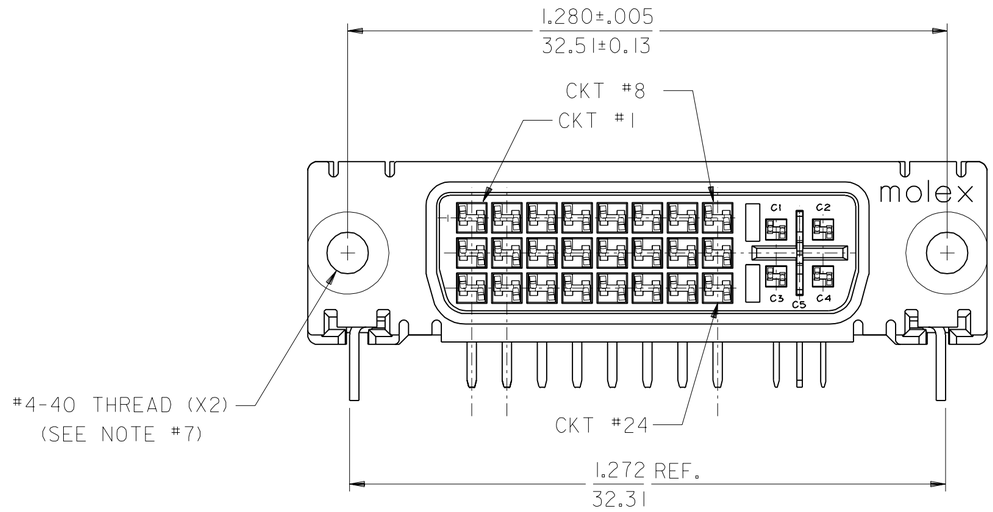
PART NUMBER	DIM "A"	PLATING OPTION
74320-9010	.092/2.34	1
74320-9014		2

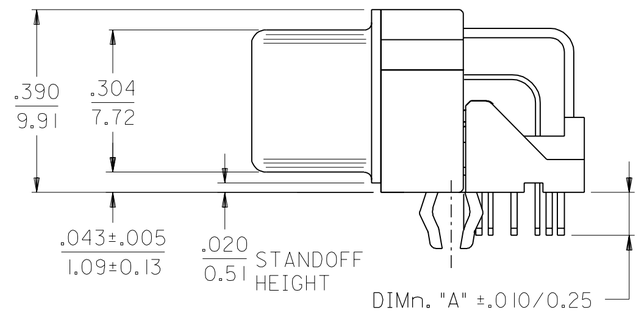


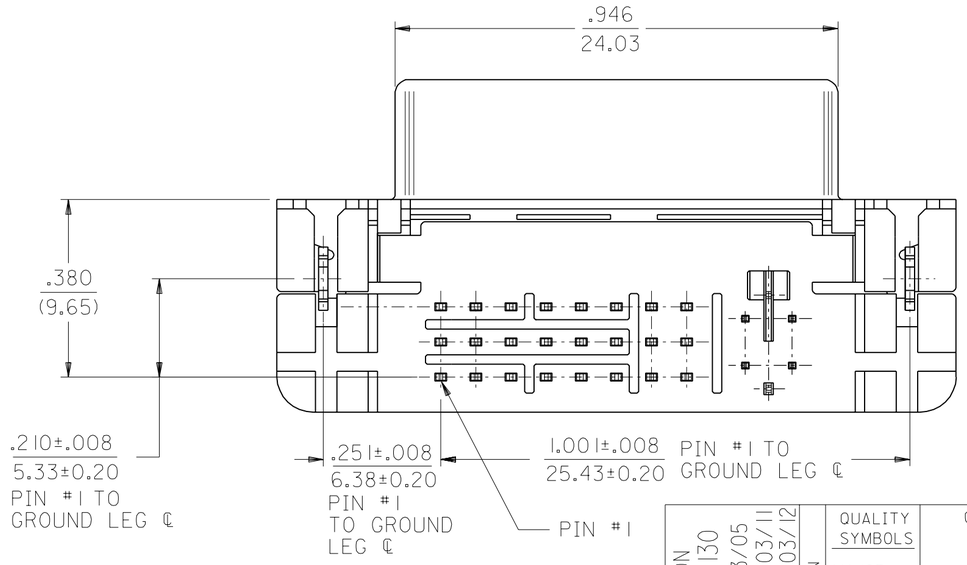
NOTES:

1. MATERIALS:
   SHIELD -- DEEP DRAW STEEL.
   HOUSING -- GLASS FILLED POLYMER, WHITE/NATURAL, UL 94v-0.
   TAIL ALIGNER -- GLASS FILLED POLYMER, WHITE/NATURAL, UL 94v-0.
   CONTACTS -- COPPER ALLOY.
   MICROCROSS GROUND -- COPPER ALLOY.
2. PLATING: SEE SHEET 2
3. PRODUCT CONFORMS TO MOLEX PRODUCT SPECIFICATION NUMBER PS-74320-001.
4. SEE SHEET 2 FOR RECOMMENDED PANEL CUT-OUT AND P.C.B. LAYOUT.
5. PARTS WILL BE PACKAGED IN TRAYS PER PK-74320-010.
6. PRODUCT CONFORMS TO DDWG DVI SPECIFICATION. REFER TO THIS SPECIFICATION FOR CONNECTOR MATING DIMENSIONS.
7. RECOMMENDED MOUNTING HARDWARE IS MOLEX P/N 71781-0001 OR 82007-0300 OR 88780-6066. REFER TO PRODUCT SPECIFICATION NUMBER PS-74320-001 FOR THE APPLICATION TORQUE REQUIREMENT FOR ASSEMBLING MOUNTING HARDWARE.
8. CAVITY NO. AND MANUFACTURING PLANT CODE.









MODIFICATION
EC NO. SH2004-0130
DRWN: DXUE 04/03/05
CH'K: HARVEY 04/03/11
APPR: SHUANG 04/03/12
DESCRIPTION
REV
C

QUALITY SYMBOLS
MAJOR =0
CRITICAL (C) =0

GENERAL TOLERANCES: (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	±0.	±.
3 PLACES	±0.	±.010
2 PLACES	±0.25	±.010
1 PLACE	±0.25	±.010

ANGULAR: ± 1/2°

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

SCALE 4 : 1
DESIGN UNITS ☐mm ☒INCH
THIRD ANGLE PROJECTION
DIMENSIONS: ☐ mm/INCH ☒ INCH/mm ☐ mm ONLY
SHT REV
REVISE ON CAD ONLY

DRAWN BY & DATE: TMcCLELL 99/11/16
CHECKED BY & DATE: SCHMIDGA 99/11/16
APPROVED BY & DATE: NELSON 99/11/16

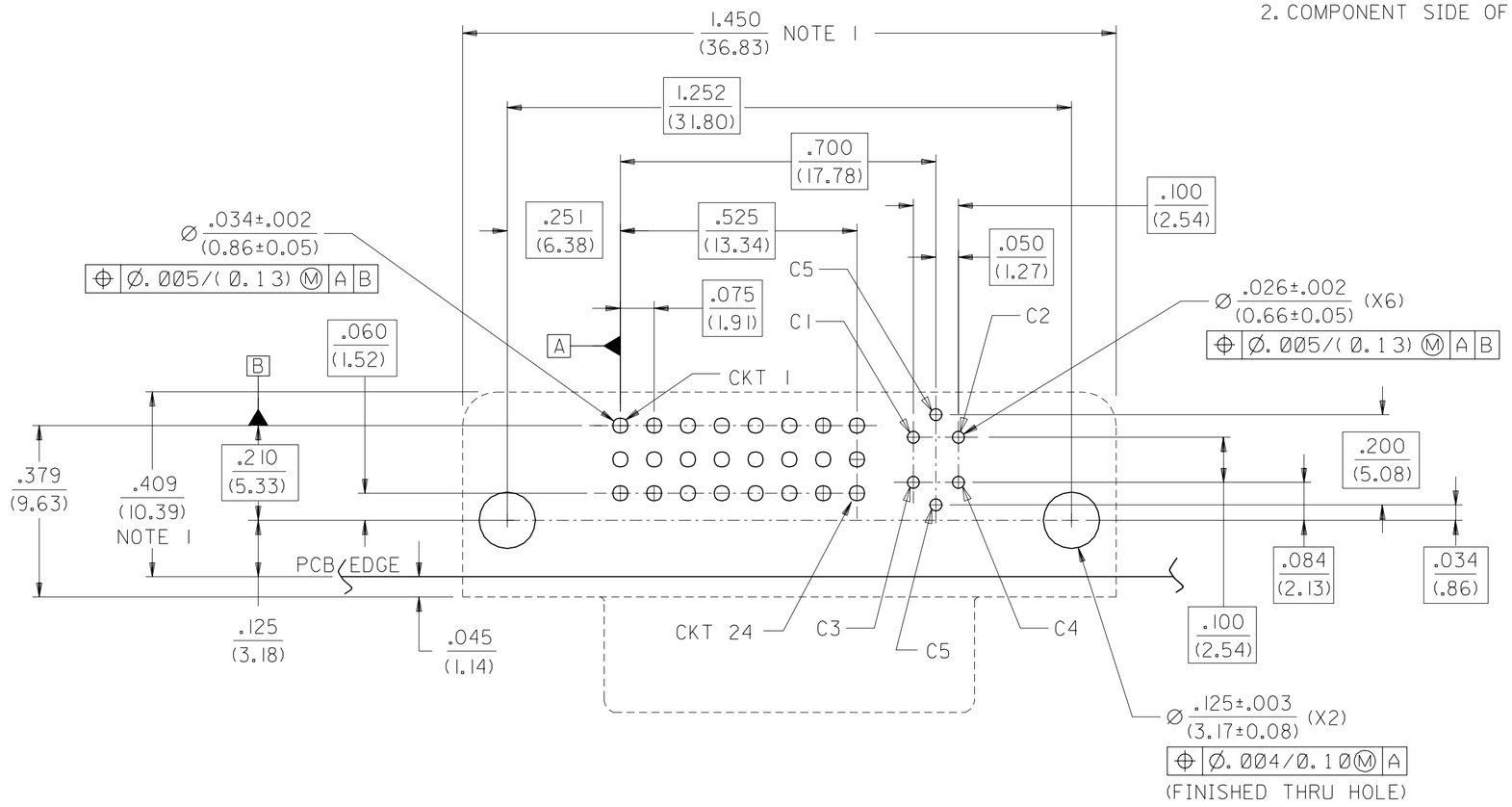
TITLE: DVI - I
RIGHT ANGLE RECEPTACLE
CONNECTOR W/FORKLOCK

MOLEX INCORPORATED

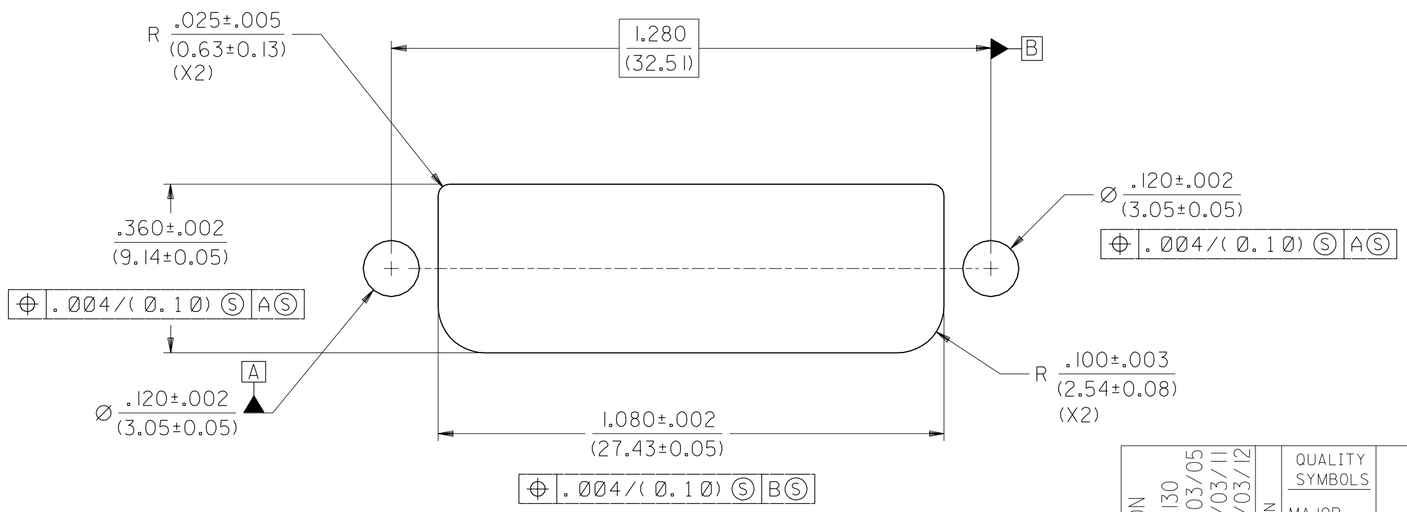
CAD FILENAME: SD74320026.S01
MATERIAL NO.: SEE CHART
DRAWING NO.: SD-74320-026
SHEET NO.: 1 OF 2

SIZE C

NOTES:
1. THESE DIMENSIONS REPRESENT CONNECTOR OVERLAY ON PCB.
2. COMPONENT SIDE OF PCB SHOWN.



RECOMMENDED PCB LAYOUT



RECOMMENDED PANEL CUT-OUT

NOTE:
1. PANEL THICKNESS: .030" - .040".

PLATING OPTIONS:

PLATING OPTION #1:

OUTER SHIELD -- 150u"/(3.75um) MIN. BRIGHT TIN OVER 50u"/(1.27um) MIN. NICKEL OVER COPPER FLASH

.075"/(1.91mm) CONTACTS -- 30u"/(0.75um) MIN. SELECT GOLD AND 100u"/(2.50um) MIN. SELECT PURE TIN OVER 50u"/(1.27um) MIN. NICKEL OVERALL.

PLATING OPTION #2:

OUTER SHIELD -- 150u"/(3.75um) MIN. BRIGHT TIN OVER 50u"/(1.27um) MIN. NICKEL OVER COPPER FLASH

.075"/(1.91mm) CONTACTS -- SELECT GOLD FLASH AND 100u"/(2.50um) MIN. SELECT PURE TIN OVER 50u"/(1.27um) MIN. NICKEL OVERALL.

MODIFICATION
EC NO. SH2004-0130
DRWN: DXUE 04/03/05
CH'K: HARVEY 04/03/11
APPR:SHUANG 04/03/12
DESCRIPTION
C
REV

QUALITY SYMBOLS
MAJOR =0
CRITICAL C =0

GENERAL TOLERANCES: (UNLESS SPECIFIED)

	mm	INCH
4 PLACES	±0.	±.
3 PLACES	±0.	±.010
2 PLACES	±0.25	±.010
1 PLACE	±0.25	±.010

ANGULAR: ± 1/2°

DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

SCALE 4 : 1
DESIGN UNITS ☐mm ☒INCH
THIRD ANGLE PROJECTION
DIMENSIONS: ☐mm/INCH ☒INCH/mm ☐mm ONLY ☐INCH ONLY
SHT REV
REVISE ON CAD ONLY

DRAWN BY & DATE: TMcCLELL 99/11/16
CHECKED BY & DATE: SCHMIDGA 99/11/16
APPROVED BY & DATE: NELSON 99/11/16
CAD FILENAME: SD74320026.S02

TITLE: DVI - I
RIGHT ANGLE W/FORKLOCK
RECEPTACLE CONNECTOR

molex MOLEX INCORPORATED

MATERIAL NO.: SEE CHART
DRAWING NO.: SD-74320-026
SHEET NO.: 2
SIZE: C