

**NEW**



DisplayPort™ Standard Digital Interface Connector

CONNECTOR

MB-0192-1

## DP1 Series

October 2008

**RoHS Compliant**



The DP1 Series is a high speed differential transmission board-to-cable connector compatible with the Display Port v1.1a, the VESA standardized next-generation digital display interface.

\*VESA (Video Electronics Standard Association)

### Features

- Receptacle is available in reverse SMT type for reverse mounting, angle SMT with flange, standard angle SMT (mating height 6.5mm, thickest area 6.65mm), and angle through-hole types (soldered terminal area 1.9mm, applicable board thickness t1.6).
- Reinforced-type receptacle available with enhanced metal shell structure, robust against rough handling of cable during mating and unmating (DP1RD20JQ4).
- Excellent transmission with three-row footprint for through-hole type receptacle.
- Plugs are available as part of cables in 12.2mm height with latch (mechanical lock) for increased retention, and 10mm height slim type without latch.
- Cable assembly passed compliance test certification by VESA. (2m, 32 AWG)
- Nickel and tin plating available for receptacle shell. With 0.3um min. gold plating for contact.

### Applicable Markets

Desktop PC, notebook PC, LCD monitor, graphic board, LCD projector, LCD television, PDP, etc.

### General Specifications

- |                                                                                       |                                                        |
|---------------------------------------------------------------------------------------|--------------------------------------------------------|
| ■ No. of Contacts: 20 pos.                                                            | ■ Rated Current: 0.5A per contact                      |
| ■ Contact Resistance:<br>Contact area --- 50m ohm max.<br>Shell area --- 30m ohm max. | ■ Insulation Resistance: 100M ohm min.<br>(after test) |
| ■ Dielectric Withstanding Voltage :<br>AC 500V rms per minute                         | ■ Mating Cycles: 10,000 times                          |
|                                                                                       | ■ Operating Temperature:<br>-20 Deg. C to +85 Deg. C   |

SJ Drawing No.
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## Board-side Receptacle Spec:JACS-30115-1

Drawing No.	Part No.	Shell plating	Connection style	Mounting	Flange	Remarks
SJ108326	DP1RD20JQ1	Ni	Horizontal	SMT	No	STD
SJ108341	DP1RD20JQ2			SMT	No	Reverse
SJ108564	DP1RD20JQ4			SMT	No	Strong Shell
SJ108350	DP1RD20NQ1			T/H	No	STD
Under consideration	DP1RD20Nxx			T/H	No	Reverse

## Board-side Receptacle Spec:JACS-30115

Drawing No.	Part No.	Shell plating	Connection style	Mounting	Flange	Remarks
SJ107860	DP1R020JQ1	Sn	Horizontal	SMT	No	STD
SJ108343	DP1R020JQ2			SMT	No	Reverse
SJ108218	DP1R020JQ3			SMT	Yes	Flange M3 X 0.5
SJ108348	DP1R020NQ1			T/H	No	STD

Drawing No.	Part No.	Shell plating	Connection style	Mounting	Flange	Remarks
Under consideration	DP1RD20xxx	Ni	Vertical	SMT	No	-

## DisplayPort to DisplayPort Cable

Drawing No.	Part No.	AWG	Product type	Type	Remarks
SJ108712	DP1P020ST3200LB	30	DP to DP	-	2m, with latch
SJ108712	DP1P020ST3300LB	30	DP to DP	-	3m, with latch
SJ108713	DP1P020ST2200LB	32	DP to DP	HBR	2m, with latch
SJ108713	DP1P020ST2300LB	32	DP to DP	-	3m, with latch
Under consideration	DP1P020ST3xxxB	30	DP to DP	-	3m and 2m, without latch
Under consideration	DP1P020ST2xxxB	32	DP to DP	-	3m and 2m, without latch
Under consideration	Halogen-free cable	-	DP to DP	-	-
Under consideration	DDM cable	-	DP to FI-X	-	-
Under consideration	Long cable	-	DP to DP	-	-

**DP1P020ST2200LB is HBR: Product passed 2.7Gbps compliance testing.**

SJ Drawing No.
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## DP Cable Adapters

Drawing	Products under consideration	AWG	Product type	Type	Remarks
Under development	DP source to DVI-D	-	DP to DVI	-	DVI is single link
Under development	DP source to HDMI	-	DP to HDMI	-	
Under development	DP source to VGA	-	DP to VGA	-	

Materials / Finishes
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## Board-side Receptacle

### DP1R\*20xxx

Component	Material / Finish
Contact	Copper alloy/ Contact area: Au plating over Ni Terminal area: Sn plating over Ni
Insulator	Heat resistant plastic/ No
Shell	Copper alloy/ Ni plating (Sn plating)

Note) Halogen-free product ---- Now under consideration

## Cable, Plug-side Connector (For Cable)

### DP1P020ST\*xxx Lx

Component	Material / Finish
Contact	Copper alloy/ Contact area: Au plating over Ni Terminal area: Sn plating over Ni
Shell	Steel/ Ni plating (Sn plating)
Insulator	Heat resistant plastic/ No
Hood	PVC/ color black (UL94V-0)

Note) Halogen-free product ---- Now under consideration

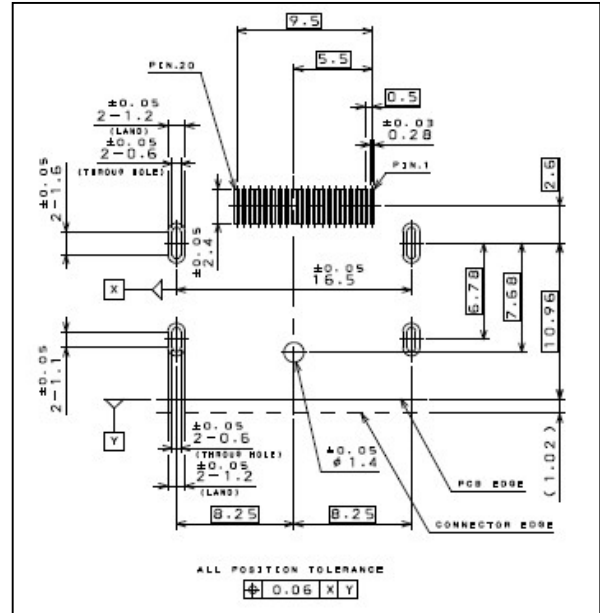
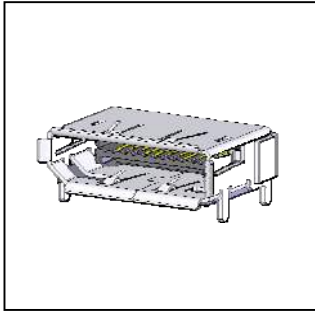
# Board-side Receptacle

## Angle SMT

Unit: mm

### Standard Type

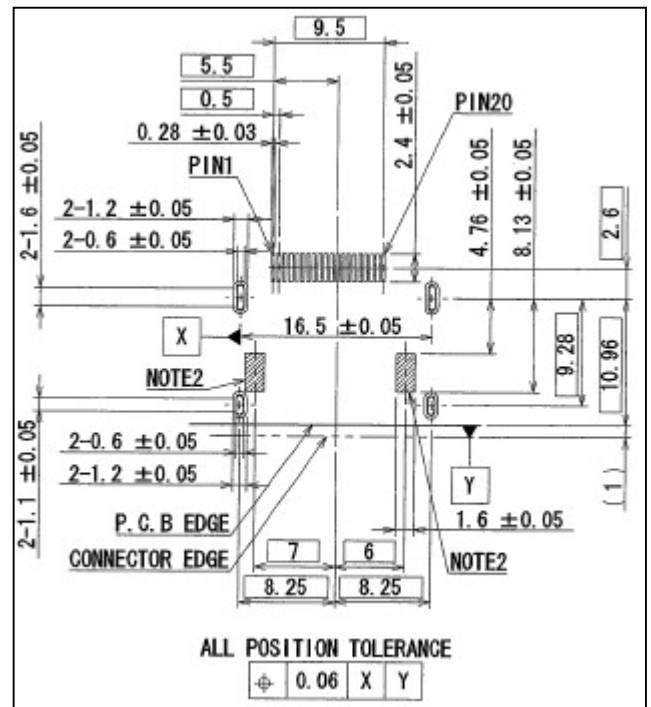
#### DP1RD20JQ1(R400) (SJ108326)



DP 1.1a Footprint (Page. 205)

### Reverse Type

#### DP1RD20JQ2(R400) (SJ108341)



NOTE2: Pattern prohibited area

# Board-side Receptacle

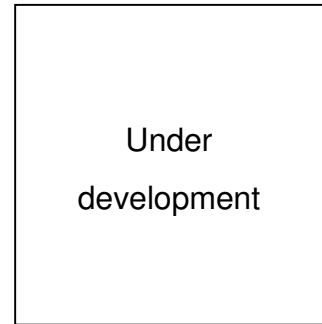
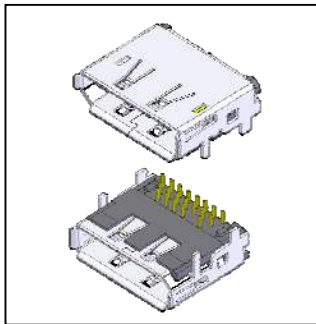
## Angle T/H

Unit: mm

Standard Type

Reverse Type

### DP1RD20NQ1(R350) (SJ108350)



### JAE Original

Excellent transmission with three-row footprint

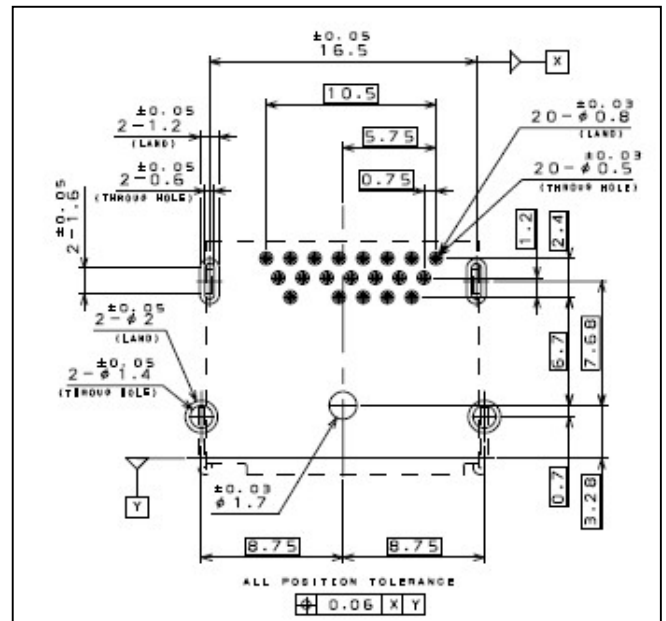
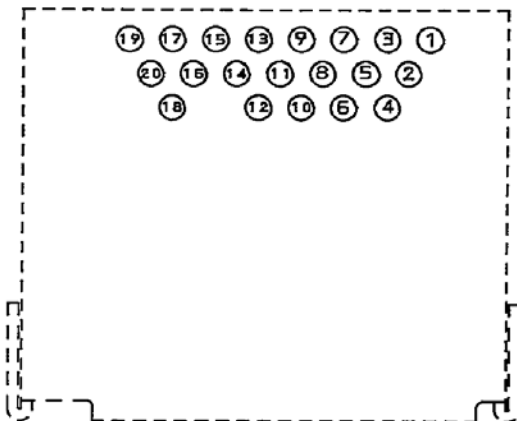


Table 4-3: Source-Side Connector Pin Assignment

Pin Number	Signal Type	Pin Name	Mating Row Contact Location	Vertically Opposed Connector's Front View
1	Out	ML Lane 0(p)	Top	■
2	GND	GND	Bottom	■
3	Out	ML Lane 0 (n)	Top	■
4	Out	ML Lane 1 (p)	Bottom	■
5	GND	GND	Top	■
6	Out	ML Lane 1 (n)	Bottom	■
7	Out	ML Lane 2 (p)	Top	■
8	GND	GND	Bottom	■
9	Out	ML Lane 2 (n)	Top	■
10	Out	ML Lane 3 (p)	Bottom	■
11	GND	GND	Top	■
12	Out	ML Lane 3 (n)	Bottom	■
13	CONFIG (see note 1)	CONFIG1	Top	■
14	CONFIG (see note 1)	CONFIG2	Bottom	■
15	I/O	AUX CH (p)	Top	■
16	GND	GND	Bottom	■
17	I/O	AUX CH (n)	Top	■
18	In	Hot Plug Detect	Bottom	■
19	RTN	Return	Top	■
20	PWR Out (see note 2)	DP PWR	Bottom	■

Table 4-4: Sink-Side Connector Pin Assignment

Pin Number	Signal Type	Pin Name	Mating Row Contact Location	Vertically Opposed Connector's Front View
1	In	ML Lane 3(n)	Top	■
2	GND	GND	Bottom	■
3	In	ML Lane 3 (p)	Top	■
4	In	ML Lane 2 (n)	Bottom	■
5	GND	GND	Top	■
6	In	ML Lane 2 (p)	Bottom	■
7	In	ML Lane 1 (n)	Top	■
8	GND	GND	Bottom	■
9	In	ML Lane 1 (p)	Top	■
10	In	ML Lane 0 (n)	Bottom	■
11	GND	GND	Top	■
12	In	ML Lane 0 (p)	Bottom	■
13	CONFIG (see note 1)	CONFIG1	Top	■
14	CONFIG (see note 1)	CONFIG2	Bottom	■
15	I/O	AUX CH (p)	Top	■
16	GND	GND	Bottom	■
17	I/O	AUX CH (n)	Top	■
18	Out	Hot Plug Detect	Bottom	■
19	RTN	Return	Top	■
20	Power Out (see note 2)	DP PWR	Bottom	■

Ordering Information

Board-side Receptacle

**DP1 R D 20 J Q 1 R400**

Series

R: Receptacle

Shell Plating;  
D: Ni, O: Sn

No. of Contact: 20

Connection to Board;  
J: SMT, N: T/H

R: Emboss reel: 400 pcs.

- 1: STD without flange, 2: REV without flange
- 3: STD with flange,
- 4: product with enhanced resistant to twist

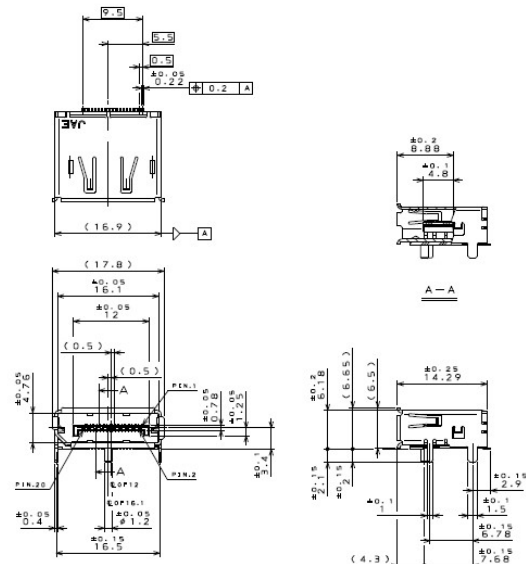
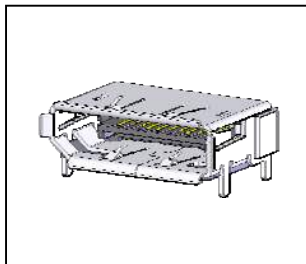
Au Plating Thickness of Contact;  
Q: 0.3um, S: 0.76um

Unit: mm

**Angle SMT**

Standard Type

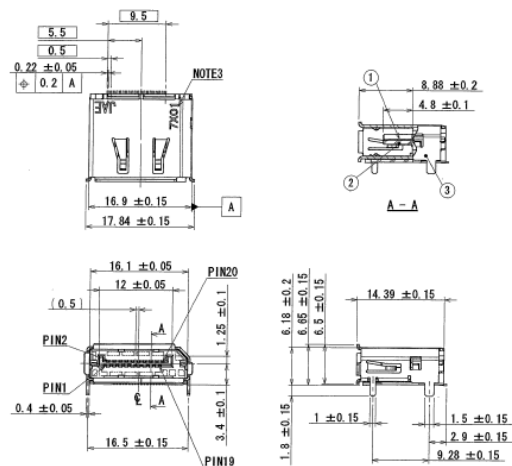
**DP1RD20JQ1(R400)(SJ108326)**



**Angle SMT**

Reverse Type

**DP1RD20JQ2(R400)(SJ108341)**



Ordering Information

Board-side Receptacle

**DP1 R D 20 J Q 1 R400**

Series

R: Receptacle

Shell Plating; D: Ni, 0: Sn, T: Ni(with adsorption tape)

No. of Contact: 20

Connection to Board; J: SMT, N: T/H

R: Emboss reel: 400 pcs.

1: STD without flange, 2: REV without flange  
3: STD with flange,  
4: product with enhanced resistant to twist

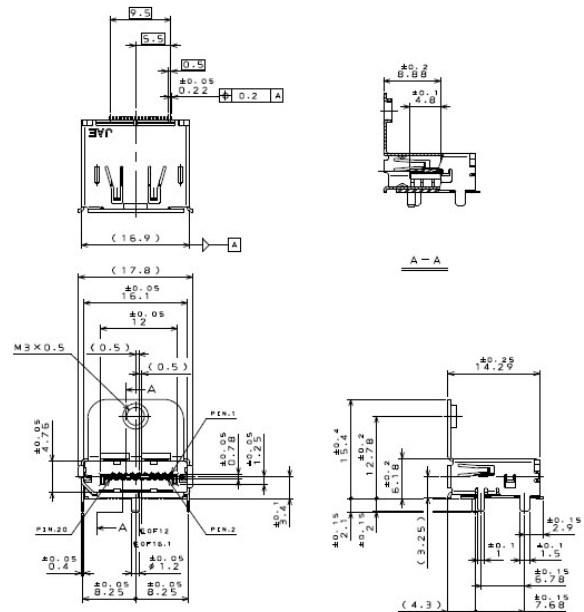
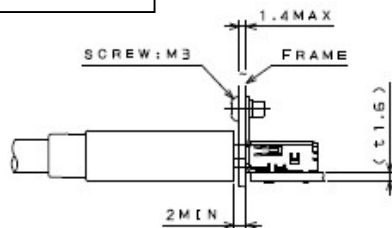
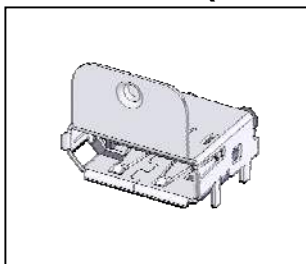
Au Plating Thickness of Contact;  
Q: 0.3um, S: 0.76um

Unit: mm

Angle SMT

With Flange Type

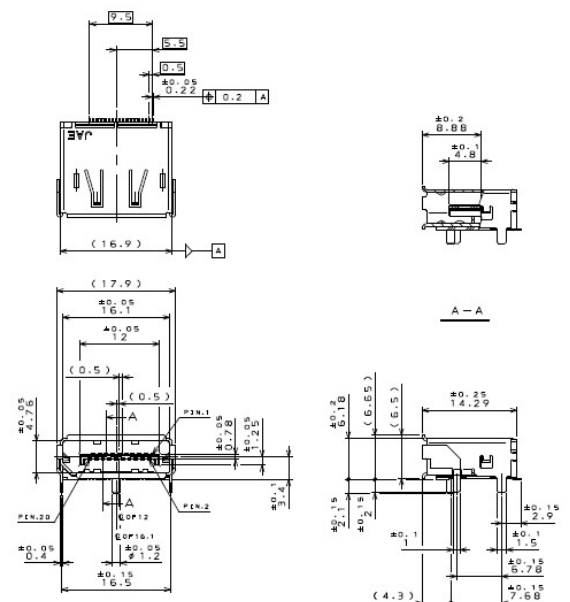
**DP1R020JQ3 ( SJ108218 )**



Angle SMT

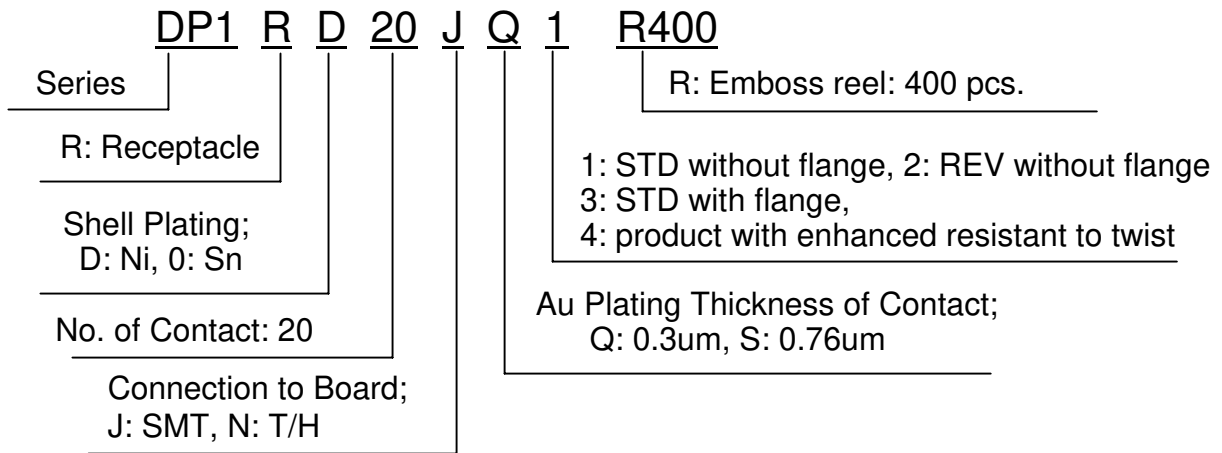
Strong Shell Type

**DP1RD20JQ4 (R400) (SJ108564)**



Ordering Information

**Board-side Receptacle**

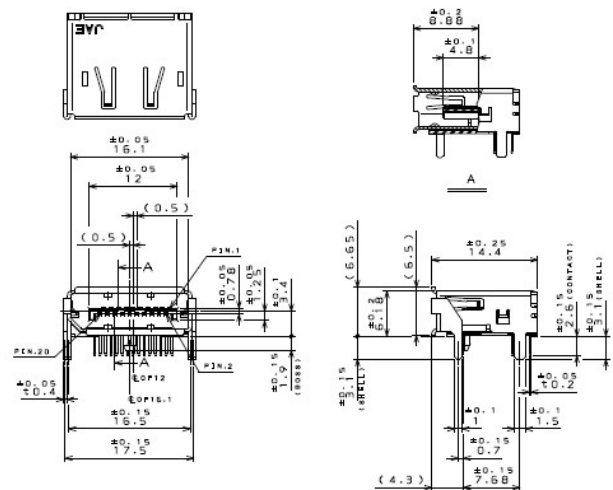
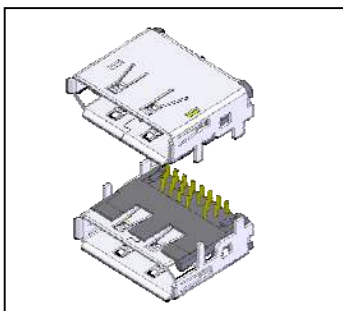


Unit: mm

**Angle T/H**

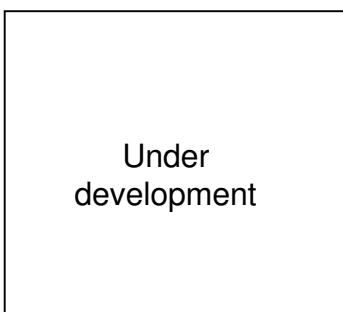
**Standard Type**

**DP1RD20NQ1(R350) (SJ108350)**



**Angle T/H**

**Reverse Type**





Ordering Information

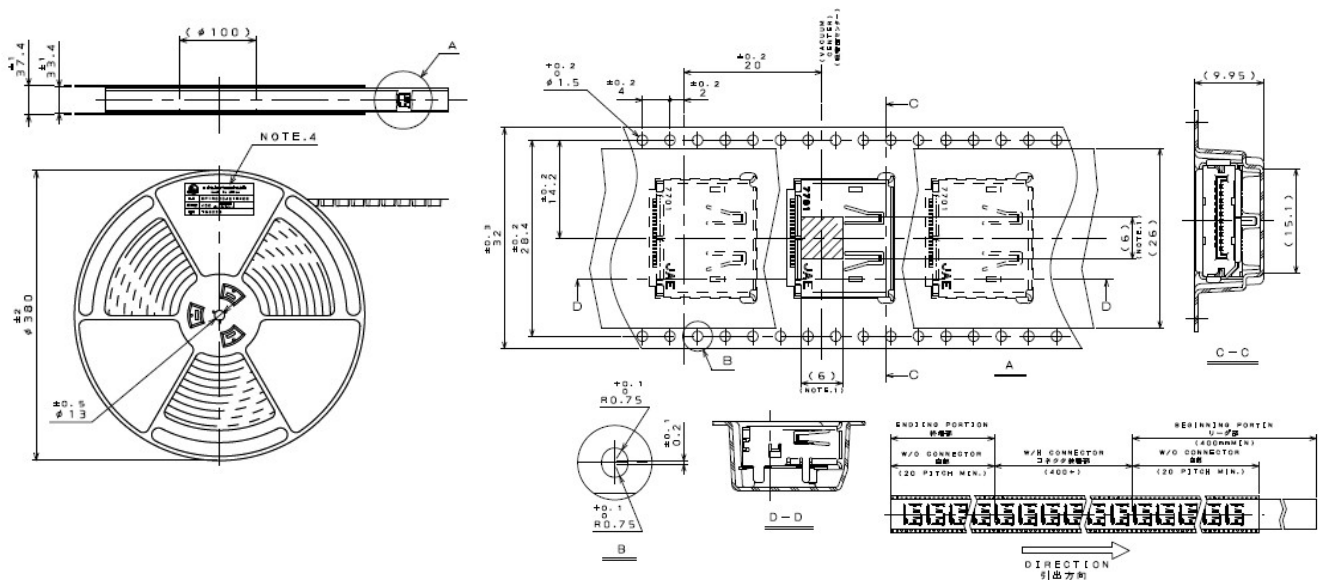
**Board-side Receptacle, Embossed**

**DP1R D20 J Q 1 R400**

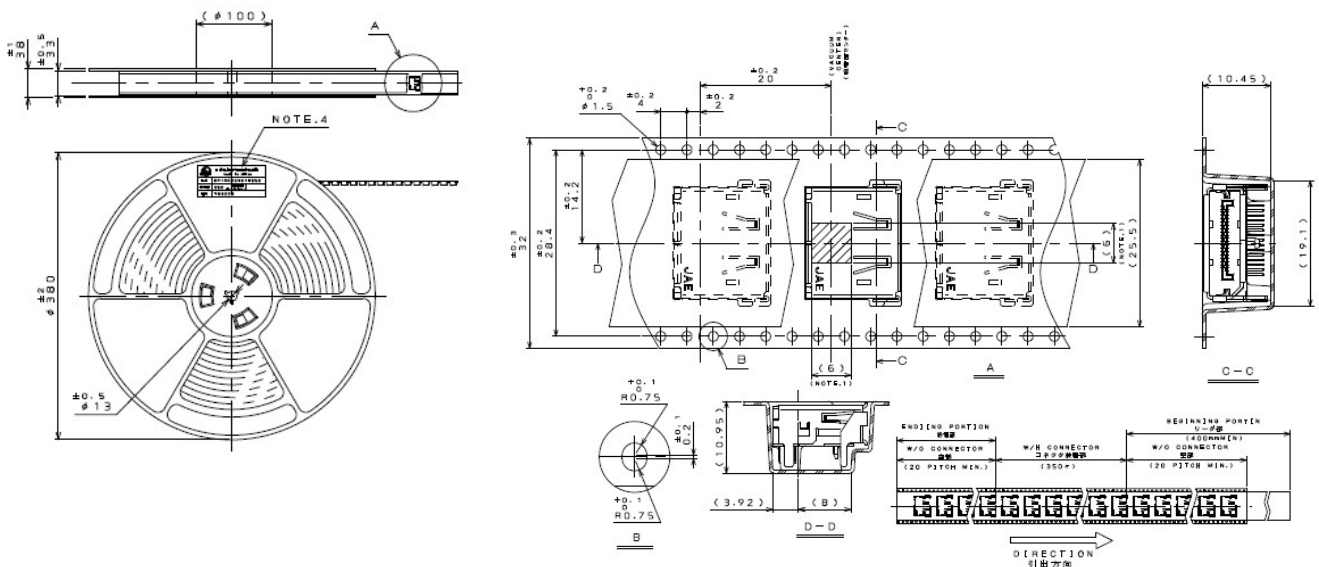
R: Embossed reel: 400 pcs.

Unit: mm

**DP1RD20JQ1(R400) (SJ108327)**

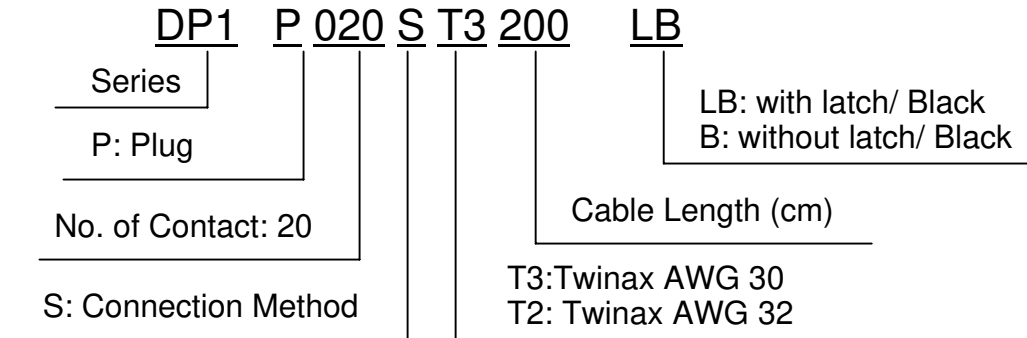


**DP1RD20NQ1(R350) (SJ108194)**



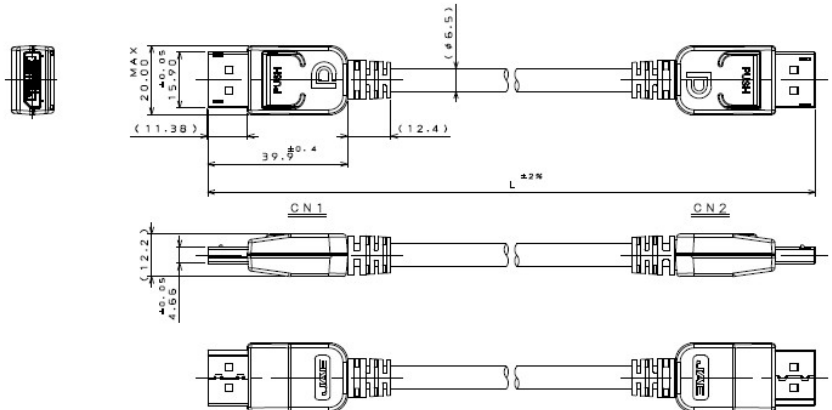
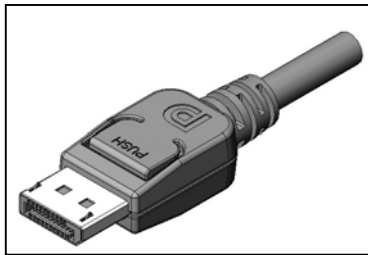
Ordering Information

DisplayPort to DisplayPort Cable

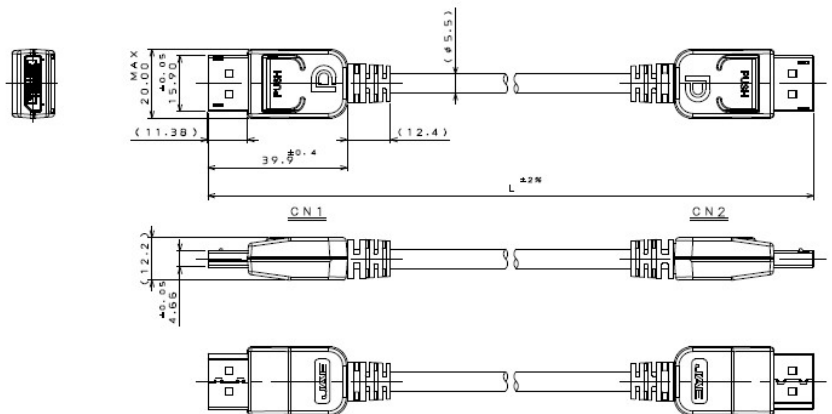
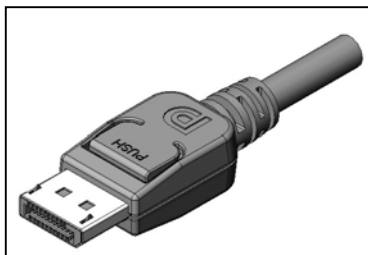


Unit: mm

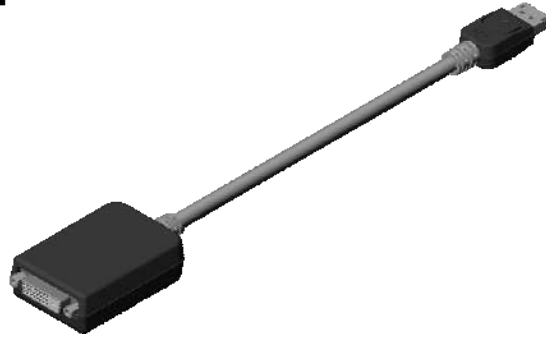
DP1P020ST3xxxLB (SJ108712)



DP1P020ST2xxxLB (SJ108713) (HBR: 2.7Gbps)



## DP Cable Adapters



### Features

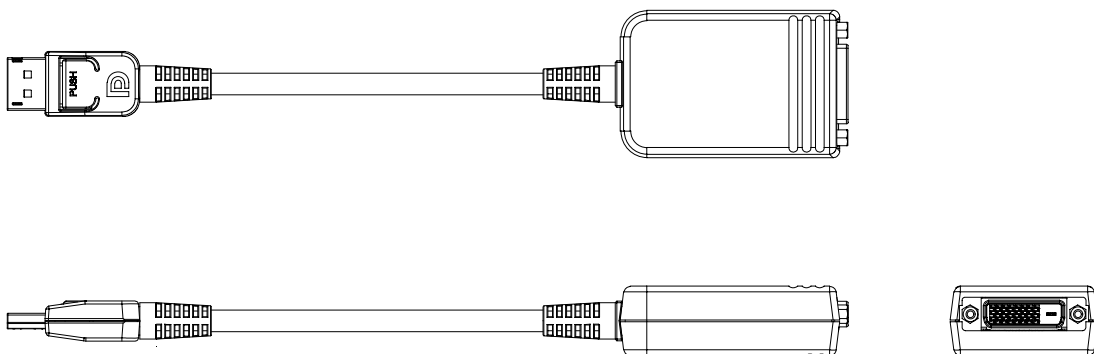
#### DP Cable Adapters

-Adapter to connect DisplayPort connector to devices compatible with general interface connectors such as DVI, HDMI, VGA, etc.

-Static electricity countermeasure, IEC61000-4-2 level 4 (8kV contact discharge).

-EMI countermeasure.

Drawing No.	Product type	Development status	Remarks
Under development	DP source to DVI-D	Under development	DVI is single link
Under development	DP source to HDMI	Under development	-
Under development	DP source to VGA	Under development	-



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Related Material
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- **Specification (JACS): JACS-30115, JACS-30115-1**
- **Handling Instruction (JAHL): None**

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Product Marketing Division

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**Notice:** Products shown in this leaflet are made for the applications listed below. However, if the above-mentioned products are to be used in aerospace devices, marine cable-connection devices, atomic power control systems, medical equipment for life-support systems, or any other specific application requiring extremely high reliability, please contact JAE for further information.

Recommended applications: computers, office machines, measuring devices, telecommunication devices (terminals, mobile devices), AV devices, household applications, FA devices, etc.