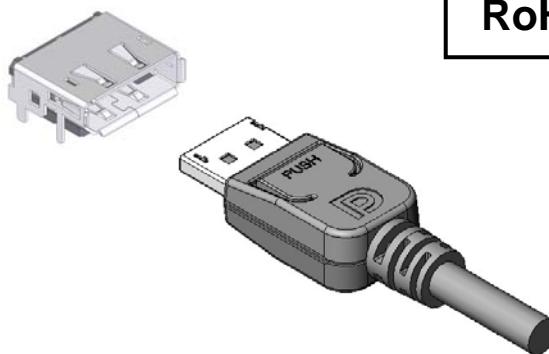




DisplayPort™ Standard Digital Interface Connector

CONNECTOR
MB-0192-1
October 2008**DP1 Series****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:
 - Contact area --- 50m ohm max.
 - Shell area --- 30m ohm max.
- Insulation Resistance: 100M ohm min. (after test)
- Dielectric Withstanding Voltage :
 - AC 500V rms per minute
- Mating Cycles: 10,000 times
- Operating Temperature:
 - 20 Deg. C to +85 Deg. C

SJ Drawing No.

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.

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

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

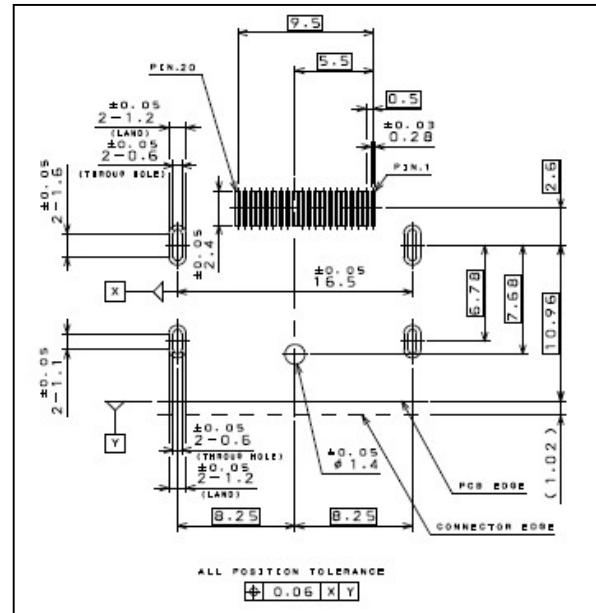
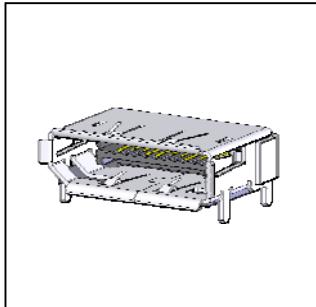
Board-side Receptacle

Angle SMT

Unit: mm

Standard Type

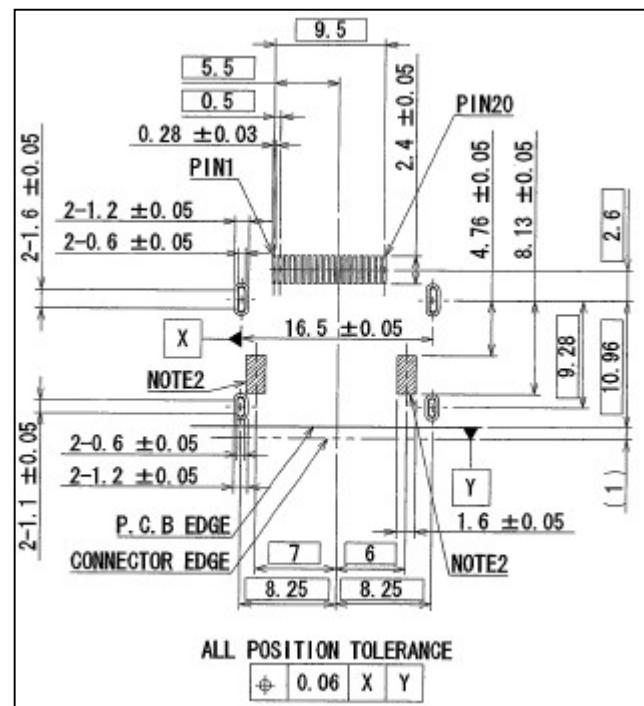
DP1RD20JQ1(R400) (SJ108326)



DP 1.1a Footprint (Page. 205)

Reverse Type

DP1RD20JQ2(R400) (SJ108341)



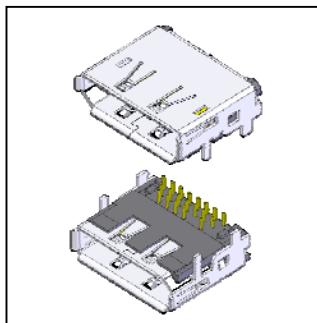
NOTE2: Pattern prohibited area

Board-side Receptacle

Angle T/H

Standard Type

DP1RD20NQ1(R350) (SJ108350)



Reverse Type

Under development

JAE Original

Excellent transmission with three-row footprint

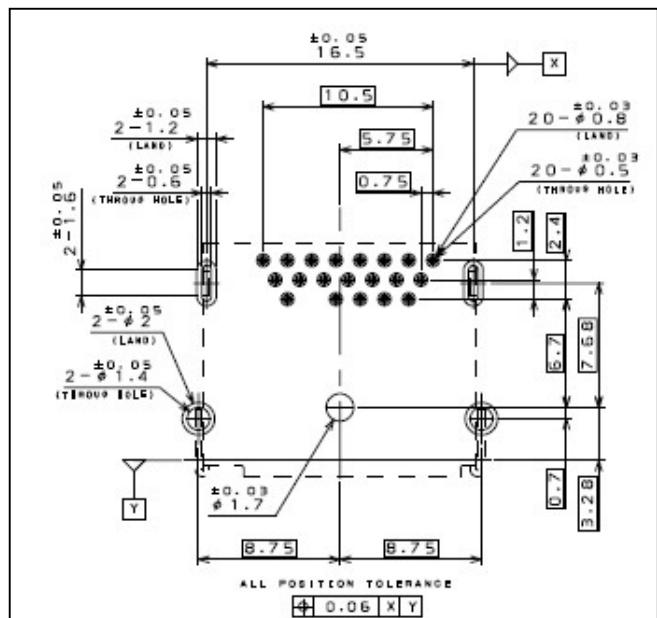
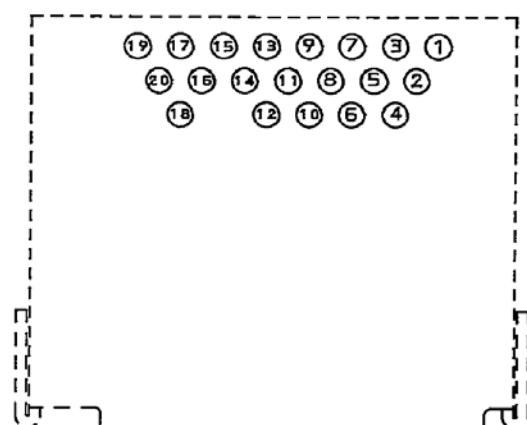


Table 4-3: Source-Side Connector Pin Assignment

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

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	Yellow
2	GND	GND	Bottom	Dark Blue
3	In	ML_Lane 3(p)	Top	Yellow
4	In	ML_Lane 2(n)	Bottom	Dark Blue
5	GND	GND	Top	Dark Blue
6	In	ML_Lane 2(p)	Bottom	Dark Blue
7	In	ML_Lane 1(n)	Top	Yellow
8	GND	GND	Bottom	Dark Blue
9	In	ML_Lane 1(p)	Top	Yellow
10	In	ML_Lane 0(n)	Bottom	Dark Blue
11	GND	GND	Top	Dark Blue
12	In	ML_Lane 0(p)	Bottom	Dark Blue
13	CONFIG (see note 1)	CONFIG1	Top	Dark Blue
14	CONFIG (see note 1)	CONFIG2	Bottom	Dark Blue
15	I/O	AUX CH(p)	Top	Yellow
16	GND	GND	Bottom	Dark Blue
17	I/O	AUX CH(n)	Top	Yellow
18	Out	Hot Plug Detect	Bottom	Light Green
19	RTN	Return	Top	Blue
20	Power Out (see note 2)	DP_PWR	Bottom	Red

Ordering Information

Board-side Receptacle

DP1 R D 20 J Q 1 R400

Series

R: Receptacle

Shell Plating;
D: Ni, 0: Sn

No. of Contact: 20

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

R: Emboss reel: 400 pcs.

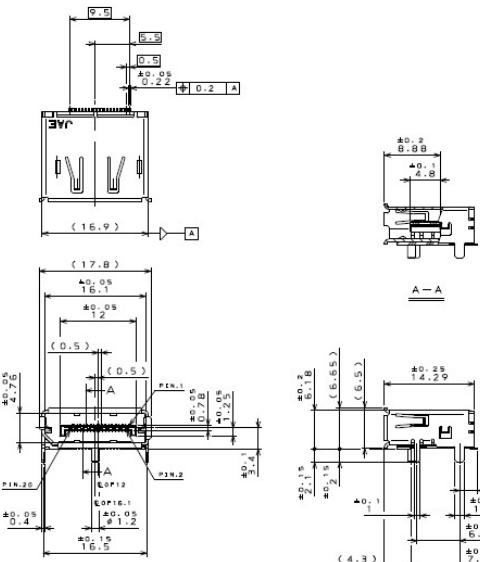
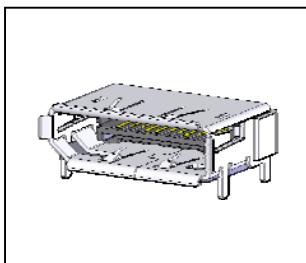
1: STD without flange, 2: REV without flange
3: STD with flange,
4: product with enhanced resistant to twistAu Plating Thickness of Contact;
Q: 0.3um, S: 0.76um

Unit: mm

Angle SMT

Standard Type

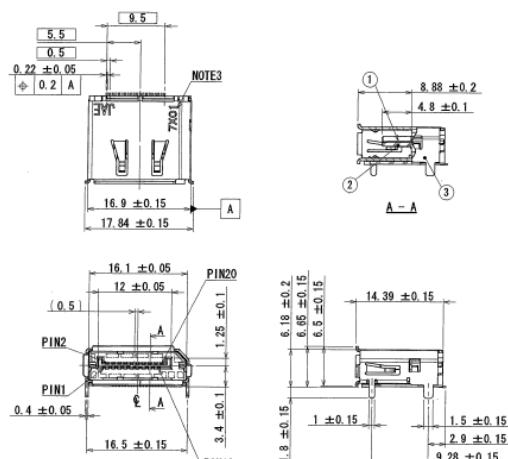
DP1RD20JQ1(R400)(SJ108326)



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

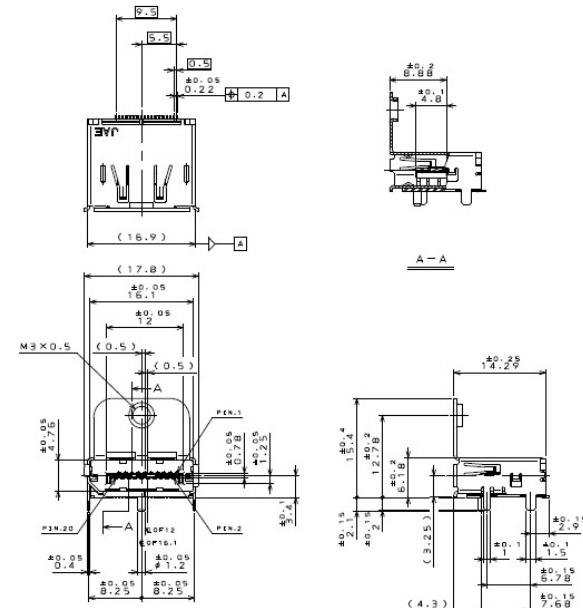
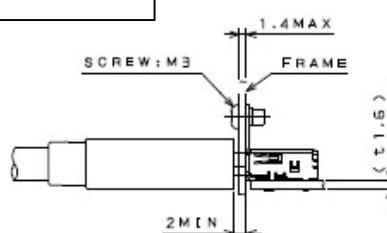
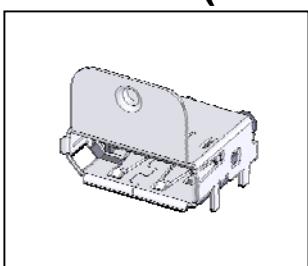
Au Plating Thickness of Contact;
Q: 0.3um, S: 0.76um

Unit: mm

Angle SMT

With Flange Type

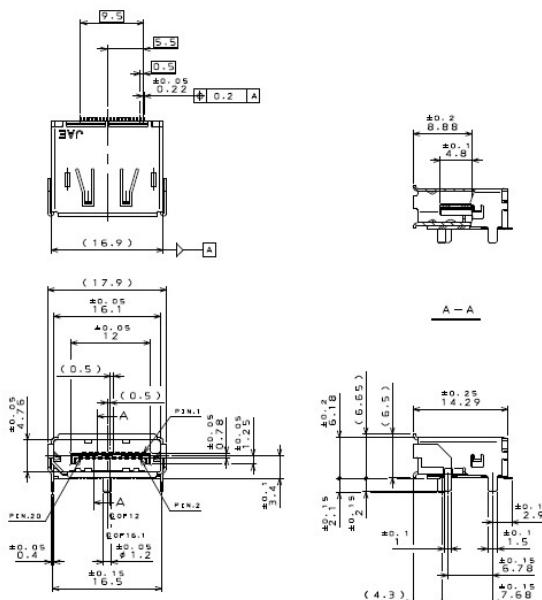
DP1R020JQ3 (SJ108218)



Angle SMT

Strong Shell Type

DP1RD20JQ4 (R400) (SJ108564)



Ordering Information

Board-side Receptacle

DP1 R D 20 J Q 1 R400

Series
R: Receptacle

Shell Plating;
D: Ni, 0: 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

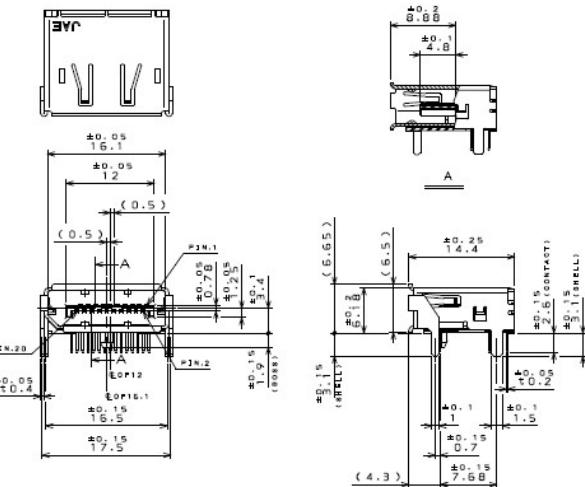
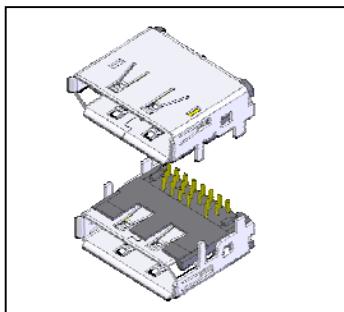
Au Plating Thickness of Contact;
Q: 0.3um, S: 0.76um

Unit: mm

Angle T/H

Standard Type

DP1RD20NQ1(R350) (SJ108350)



Angle T/H

Reverse Type

Under
development

Ordering Information

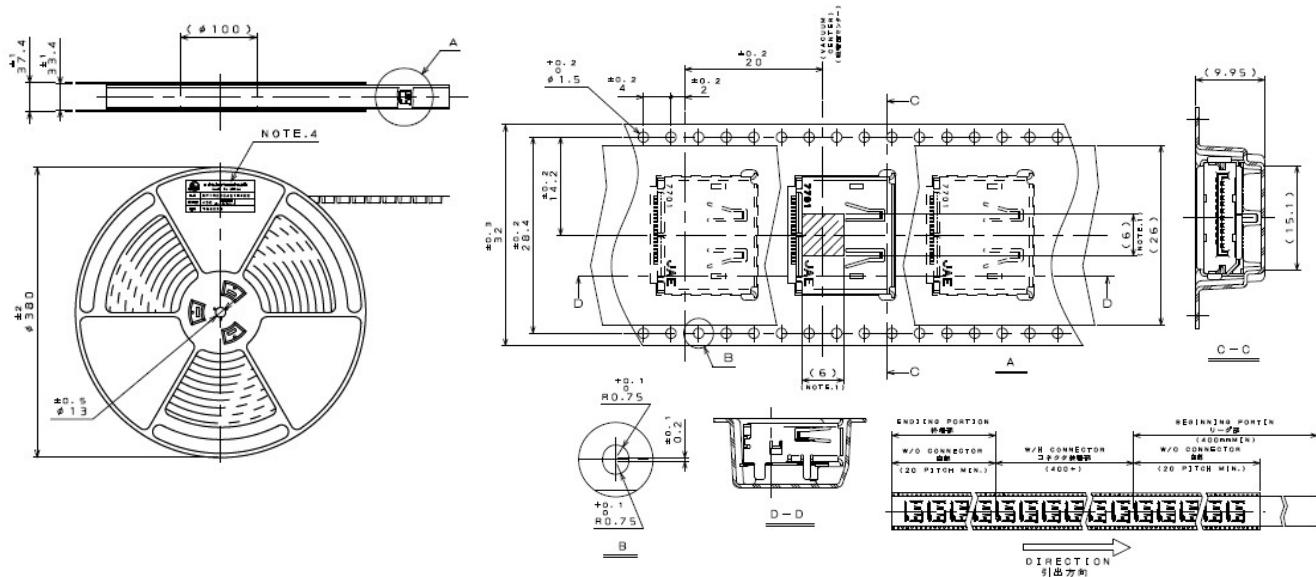
Board-side Receptacle, Embossed

DP1R D20 J Q 1 R400

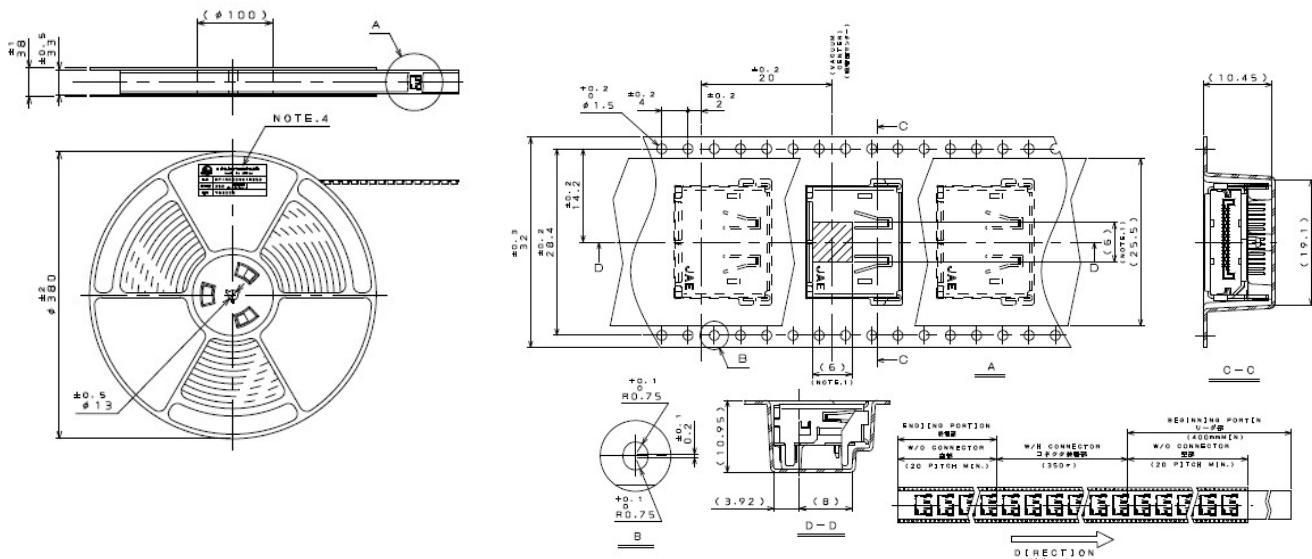
R: Embossed reel: 400 pcs.

Unit: mm

DP1RD20JQ1(R400) (SJ108327)

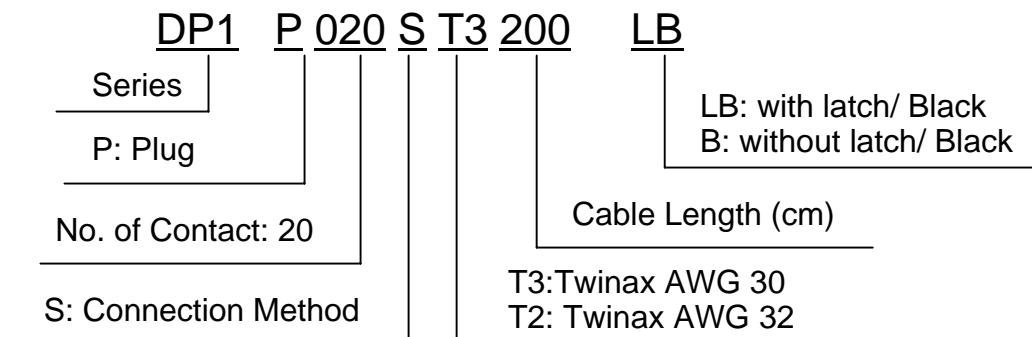


DP1RD20NQ1(R350) (SJ108194)

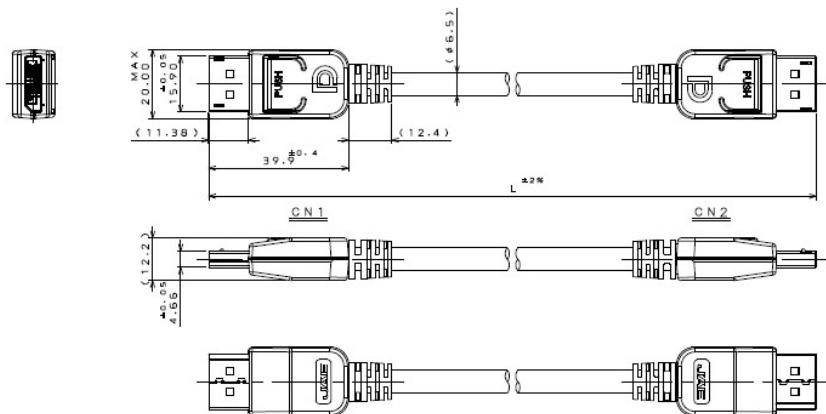
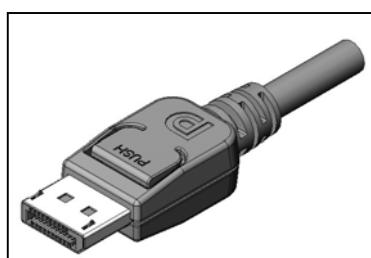
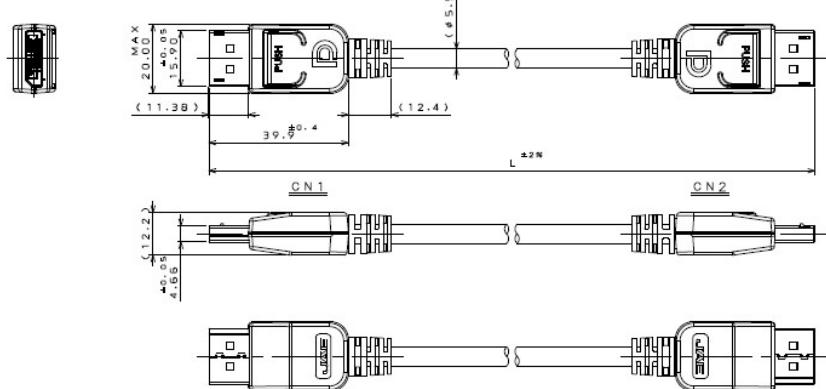
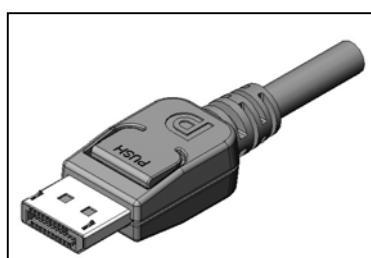


Ordering Information

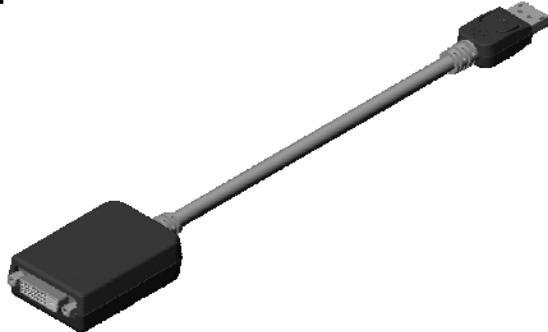
DisplayPort to DisplayPort Cable



Unit: mm

DP1P020ST3xxxLB (SJ108712)**DP1P020ST2xxxLB (SJ108713) (HBR: 2.7Gbps)**

DP Cable Adapters

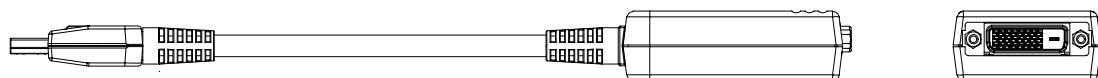
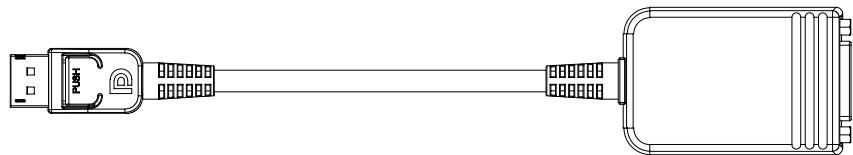


Features

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	-



Related Material

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

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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.

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[DP1RD20JS2](#) [DP1RT20JQ3](#) [DP1RD20JS5](#) [DP1R020NQ1](#) [DP1RD20NS1](#)