PRODUCT CATALOG

HIROSE ELECTRIC CO.,LTD.

2.4mm Series

2.4mm Coaxial Connectors MIL Standard Compliant

Milimeter Wave

COAX 2.4mm

MIL Standard

May 2022

Features

1. 2.4mm coaxial connector conforming to MIL-STD-348B Standard

2. Supports up to 50GHz frequency

3. Board Receptacle is Screw-mounted

・Provides excellent high frequency performance and consistent mounting quality
・Reusable
・Reduces mounting complexity (No Soldering is required)
・Compatible with various PCB thicknesses

4. 0.085 inch flexible cable applicable

5. Attenuators and terminators are also available.

6. RoHS2 compliant

Applications

Data transmission measurement, radio communication equipment, measuring instruments, RF module, radio frequency power amplifier, high speed router, high speed switch, broadcasting equipment, etc.

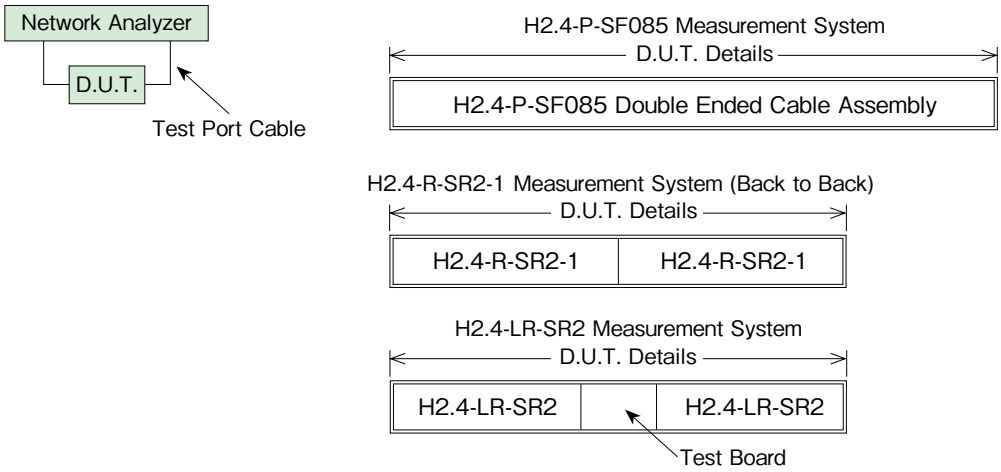
Product Specifications

Nominal Characteristic Impedance	50Ω	Operating Temperature	-55 to +105℃ (95% RH Max.)
Rated Frequency	0 to 50GHz	Storage Temperature Range	-55 to +50℃ (95% RH Max.)

Items	Specifications	Conditions
Contact Resistance	Center : 4mΩ Max. External : 2mΩ Max.	Measured at 100mA Max.
Insulation Resistance	1000MΩ Min.	Measured at 100V DC
Withstanding Voltage	No breakdown	200V AC for 1 min.
V.S.W.R.*	● H2.4-P-SF085 V.S.W.R. 1.35 Max. (0 to 40GHz) V.S.W.R. 1.45 Max. (40 to 50GHz)	
	● H2.4-LR-SR2 V.S.W.R. 1.3 Max. (0 to 40GHz) V.S.W.R. 1.4 Max. (40 GHz to 50GHz)	
	● H2.4-R-SR2-1 V.S.W.R. 1.35 Max. (0 to 26.5GHz) V.S.W.R. 1.4 Max. (26.5 GHz to 40GHz) V.S.W.R. 1.45 Max. (40 GHz to 50GHz)	
Mating Cycles	Contact resistance Center : 6mΩ Max. External : 4mΩ Max. No broken, cracked, or loose parts	500 cycles
Vibration Resistance	No electrical discontinuity greater than 1μs. No broken, cracked, or loose parts	Frequency : 10 to 500Hz, half amplitude : 0.75mm, Acceleration : 196m/s^2, 10 cycles in each of the 3 axis
Shock Resistance	No electrical discontinuity greater than 1μs. No broken, cracked, or loose parts	Acceleration : 980m/s^2, duration : 6ms, Wave form : half-sine wave, 3 times in each of the 3 axis
Moisture Resistance of Temperature/ Humidity Cycle	Insulation resistance : 100MΩ Min. (in a high humidity environment) Insulation resistance : 1000MΩ Min. (in a dry environment) No broken, cracked, or loose parts	Left for 10 cycles (240 hours) in an environment with the temperature ranging from -10 to 65℃ and the humidity ranging from 90 to 98%.
Temperature Cycle	No broken, cracked, or loose parts	5 cycles of the following test series condition : Temperature : -55℃ → - → +105℃ → - Time : 30 min. → 3 min. → 30 min. → 3 min.
Salt Spray	No considerable corrosion	Continuous 48 hour cycle in 5% salt water solution

(Note) Information contained in this catalog represents general requirements for this Series. Contact us for the drawings and specifications for a specific part number shown.

*V.S.W.R. (Voltage Standing Wave Ratio) Measurement System
The above V.S.W.R. specification values were measured using the measurement system shown below.



Materials / Finish

Part	Materials	Finish
Shell	Stainless Steel / Brass	Passivated / Nickel Plated / Gold Plated
Insulator	PTFE Resin / PEI Resin	-
Contact	Beryllium Copper	Gold Plated

Product Number Structure

Refer to the chart below when determining the product specifications from the product number.
Please select from the product numbers listed in this catalog when placing orders.

Receptacle

H2.4 - LR - SR2 (##)
① ② ③ ④

① Series Name	H2.4	③ Board Mounting Method	PCB Screw Mounting
② Connector Type	LR : End Launch Receptacle R : Vertical Mount Receptacle	④ Attached Screw	(00) : - (11) : 0-80UNF 1/4 inch (12) : 0-80UNF 3/16 inch

Cable Assembly

H2.4 - 2P - SF085MC1 - A - 6IN
① ② ③ ④

① Series Name	H2.4	③ Cable Type	0.085 inch, Flexible Cable
② Assembly Type	Double-ended Straight Plug Cable Assembly	④ Total Length (inch)	6, 12, 24, 36, 48, 60 inch

Note : Plugs can be ordered only as terminated cable assemblies.

Functional Diagram

Plug Side

■Straight Plug
H2.4-P-SF085

Non-Reflective Terminator

■Plug
H2.4-TMP

Attenuator

■Plug-Jack
H2.4-AT(##)-PJ
: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20dB

Receptacle Side

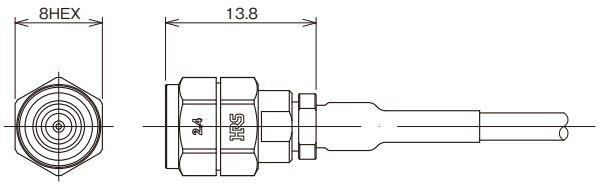
■PCB Vertical Launch Receptacle
(For High Speed Transmission Evaluation Board Ports)
H2.4-R-SR2-1

■PCB End Launch Receptacle
(For High Speed Transmission Evaluation Board Ports)
H2.4-LR-SR2

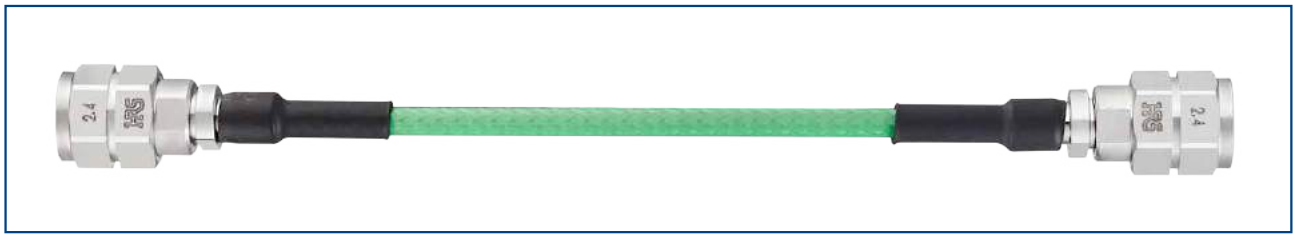
Plug

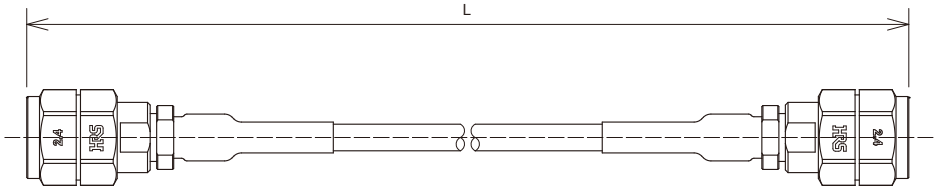
Plugs can be ordered only as terminated cable assemblies.

● H2.4-P-SF085



Cable Assembly (H2.4 Straight Plug - H2.4 Straight Plug)

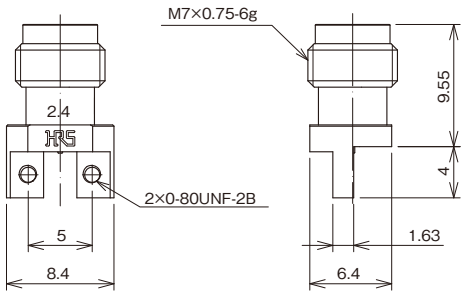




Part No.	HRS No.	Cable Assembly Length L		Purchase Unit
		Unit : inch	Unit : mm	
H2.4-2P-SF085MC1-A-6IN	CL0321-5132-0-01	6 ± 0.16	152.4 ± 4	20pcs per bag
H2.4-2P-SF085MC1-A-12IN	CL0321-5132-0-02	12 ± 0.32	304.8 ± 8	
H2.4-2P-SF085MC1-A-24IN	CL0321-5132-0-03	24 ± 0.48	609.6 ± 12	
H2.4-2P-SF085MC1-A-36IN	CL0321-5132-0-04	36 ± 0.48	914.4 ± 12	
H2.4-2P-SF085MC1-A-48IN	CL0321-5132-0-05	48 ± 0.71	1219.2 ± 18	
H2.4-2P-SF085MC1-A-60IN	CL0321-5132-0-06	60 ± 0.87	1524.0 ± 22	

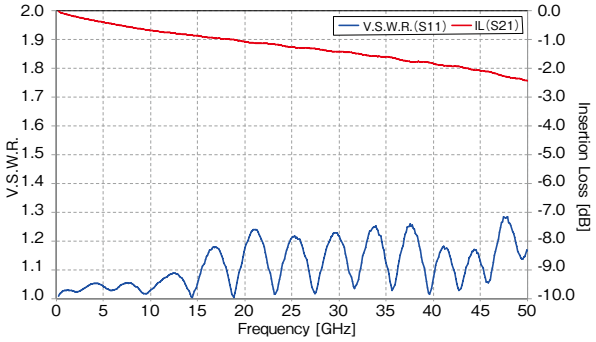
PCB End Launch Receptacle (For High Speed Transmission Evaluation Board Ports)

This product is a solderless mounted connector for prototype evaluation of high speed transmission boards.
It is not recommended for use in actual commercial equipment.



Part No.	HRS No.	Attached Screw	Purchase Unit
H2.4-LR-SR2	CL0338-0603-0-00	-	20pcs per bag
H2.4-LR-SR2(11)	CL0338-0603-0-11	0-80UNF 1/4 inch	
H2.4-LR-SR2(12)	CL0338-0603-0-12	0-80UNF 3/16 inch	

◆Frequency Characteristics (TYPICAL)

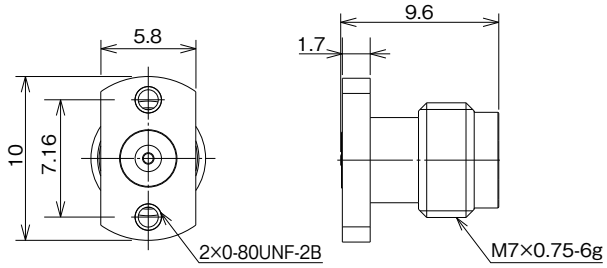


*Coplaner line length between both connector ends : 20mm

PCB Vertical Mount Receptacle

This product is a solderless mounted connector for prototype evaluation of high speed transmission boards.
It is not recommended for use in actual commercial equipment.

●Inner Layer, Back Surface Trace Type



Part No.	HRS No.	Attached Screw	Purchase Unit
H2.4-R-SR2-1	CL0338-0607-0-00	-	20pcs per bag
H2.4-R-SR2-1(11)	CL0338-0607-0-11	0-80UNF 1/4 inch	
H2.4-R-SR2-1(12)	CL0338-0607-0-12	0-80UNF 3/16 inch	

Precautions

1. The diameter of the center contact pin is only 0.511mm.
   Please handle with care. When mating the component with the corresponding connector, rotate the hex part only.
2. If any dust is found on the shell interface when mating the components, please wipe with alcohol.

While Taking into Consideration

Specifications mentioned in this catalog are reference values.
When considering to order or use this product, please confirm the Drawing and Product Specifications sheets.
Use an appropriate cable when using the connector in combination with cables.
If considering usage of a non-specified cable, please contact your sales representative.
If assembly process is done by jigs & tools which are not identified by Hirose, assurance will not be given.
If considering usage for below mentioned applications, please contact your sales representative.
In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/ defense etc. Hirose must review before assurance of reliability can be given.

PRODUCT CATALOG

HIROSE ELECTRIC CO.,LTD.

2.4mm-TM Series

2.4mm Coaxial Connectors
MIL Standard Compliant/Non-Reflective Terminator

Milimeter Wave

COAX 2.4mm

Terminator

May 2022

Features

1. Non-reflective Terminator Supporting 0 to 50GHz

2. Small Size, Light Weight

3. Low V.S.W.R. & High Reliability

4. MIL Compliant (MIL-STD-348B) 2.4mm Coaxial Terminator

Applications

Optical transmission devices, data transmission measurement, radio communication equipment, measuring instruments, other high frequency devices, etc.

Product Specifications

Nominal Characteristic Impedance	50 Ω	Operating Temperature	-40 to +85℃
Rated Frequency	0 to 50GHz	Operating Relative Humidity	95% RH Max.
Power	0.5W CW (+65℃)		

Materials / Finish

Part	Materials	Finish
Shell	Stainless Steel / Brass	Passivated / Gold Plated / Nickel Plated
Insulator	PTFE Resin	–
Male Contact	Brass	Gold Plated
Coupling	Stainless Steel	Passivated
Resistive Element	Metal Film	–

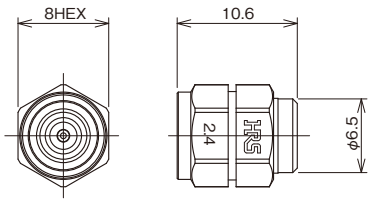
Product Number Structure

H2.4 - TM P

❶ ❷ ❸

❶ Series Name	H2.4	❸ Connector Type	P : Plug Type
❷ TM	Non-reflective Terminator		

Terminator

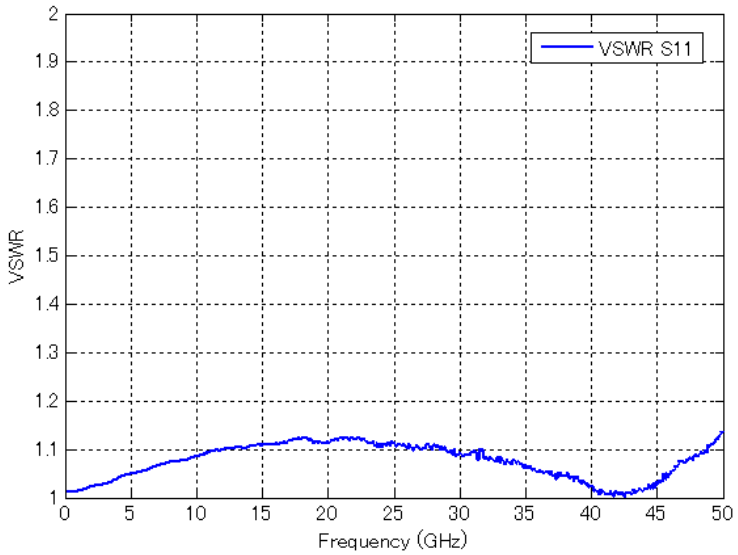


Part No.	HRS No.	Purchase Unit
H2.4-TMP	CL0353-0174-0-00	1pc per bag

V.S.W.R. (Max.)

0 to 50GHz
1.2

◆Frequency Characteristics (TYPICAL)



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PRODUCT CATALOG

HIROSE ELECTRIC CO.,LTD.

2.4mm-AT Series

2.4mm Coaxial Connectors
MIL Standard Compliant/Fixed Attenuators

Milimeter Wave

COAX 2.4mm

Attenuator

May 2022

Features

1. Fixed Attenuators Supporting 0 to 50GHz (0,1,2,3,4,5,6,7,8,9,10,20dB)

2. Small Size, Light Weight

3. Unique internal spring connection for robustness and excellence impedance matching even with temperature change.

4. Low V.S.W.R. & High Reliability

5. MIL Compliant (MIL-STD-348B)2.4mm Coaxial Attenuator

Applications

Optical transmission devices, data transmission measurement, radio communication equipment, measuring instruments, other high frequency devices, etc.

Product Specifications

Nominal Characteristic Impedance	50 Ω	Operating Temperature	-10 to +65℃
Rated Frequency	0 to 50GHz	Operating Relative Humidity	90% RH Max.
Power	1W CW (+65℃)		

Materials / Finish

Part	Materials	Finish
Shell	Stainless Steel	Passivated
Insulator	PTFE Resin	–
Male Contact	Brass	Gold Plated
Female Contact	Beryllium Copper	Gold Plated
Coupling	Stainless Steel	Passivated
Resistive Element	Metal Film	–

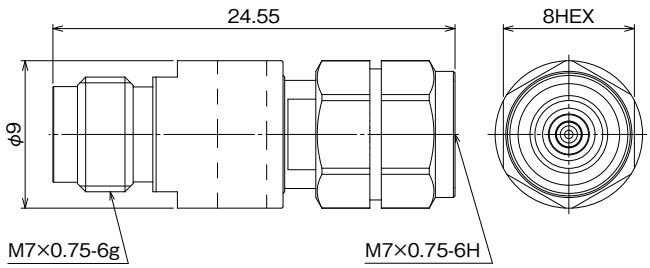
Product Number Structure

H2.4 - AT (##) - PJ

❶ ❷ ❸ ❹

❶ Series Name	H2.4	❸ Attenuation	(Ex.) (0) : 0dB (Through) (3) : 3dB (10) : 10dB
❷ AT	Fixed Attenuator	❹ Connector Type	PJ : Plug Jack

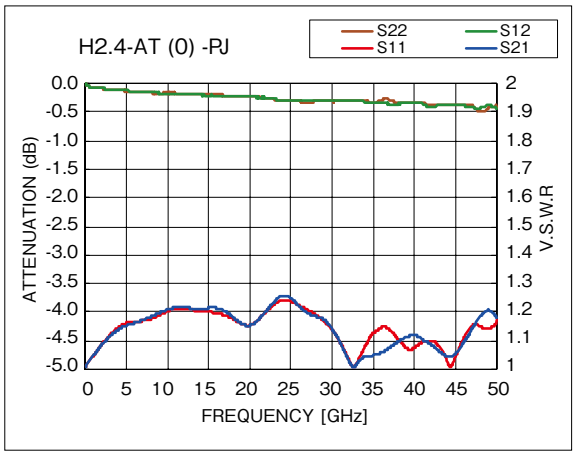
Attenuator

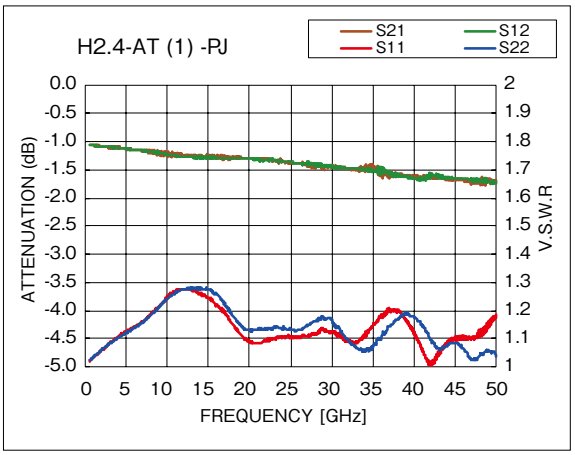


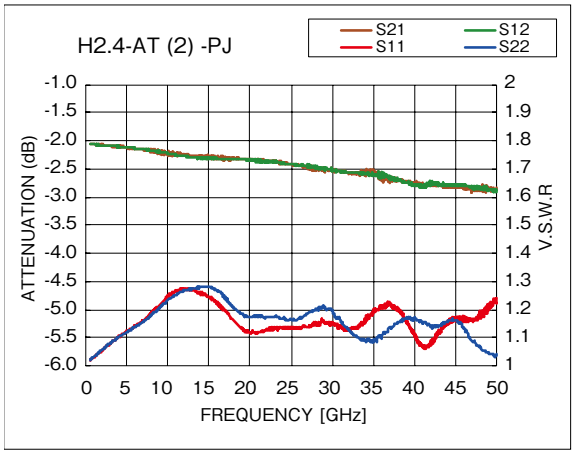
Part No.	HRS No.	Attenuation (dB)			Voltage Standing Wave Ratio (V.S.W.R.)(Max.)	
		0 to 18GHz	18 to 26.5GHz	26.5 to 50GHz	0 to 12GHz	12 to 50GHz
H2.4-AT(0)-PJ	CL0354-0290-0-00	$0^{+0.5}_{0}$	$0^{+0.8}_{0}$	$0^{+1.0}_{0}$	1.35	1.4
H2.4-AT(1)-PJ	CL0354-0309-0-00	$1^{+0.8}_{-0.3}$	$1^{+1.0}_{-0.3}$	$1^{+1.6}_{-0.3}$		
H2.4-AT(2)-PJ	CL0354-0310-0-00	$2^{+0.8}_{-0.3}$	$2^{+1.0}_{-0.3}$	$2^{+1.6}_{-0.3}$		
H2.4-AT(3)-PJ	CL0354-0291-0-00	$3^{+0.7}_{-0.3}$	$3^{+0.8}_{-0.3}$	$3^{+1.5}_{-0.3}$	1.3	
H2.4-AT(4)-PJ	CL0354-0311-0-00	$4^{+0.7}_{-0.4}$	$4^{+0.9}_{-0.4}$	$4^{+1.6}_{-0.4}$		
H2.4-AT(5)-PJ	CL0354-0312-0-00	$5^{+0.8}_{-0.4}$	$5^{+1.0}_{-0.4}$	$5^{+1.8}_{-0.4}$		
H2.4-AT(6)-PJ	CL0354-0292-0-00	$6^{+0.8}_{-0.2}$	$6^{+0.9}_{-0.2}$	$6^{+1.5}_{-0.2}$	1.35	1.45
H2.4-AT(7)-PJ	CL0354-0313-0-00	$7^{+1.0}_{-0.4}$	$7^{+1.2}_{-0.4}$	$7^{+2.0}_{-0.4}$		
H2.4-AT(8)-PJ	CL0354-0314-0-00	$8^{+1.0}_{-0.5}$	$8^{+1.2}_{-0.5}$	$8^{+1.8}_{-0.5}$		
H2.4-AT(9)-PJ	CL0354-0315-0-00	$9^{+1.0}_{-0.5}$	$9^{+1.2}_{-0.5}$	$9^{+1.8}_{-0.5}$		
H2.4-AT(10)-PJ	CL0354-0293-0-00	$10^{+0.9}_{-0.5}$	$10^{+1.0}_{-0.5}$	$10^{+1.6}_{-0.5}$		1.4
H2.4-AT(20)-PJ	CL0354-0294-0-00	20 ± 1.0	$20^{+1.2}_{-1.0}$	$20^{+1.4}_{-1.0}$		

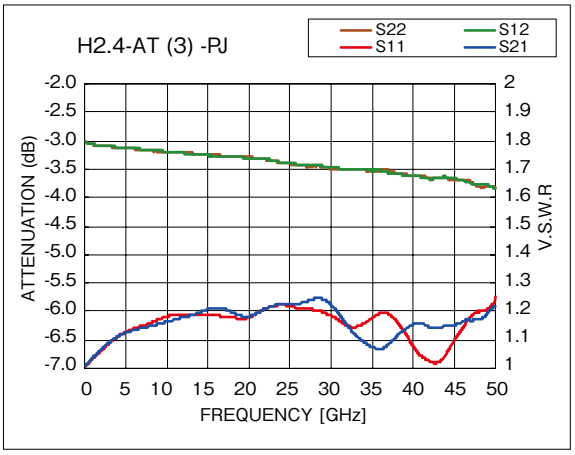
Purchase Unit : 1pc per box

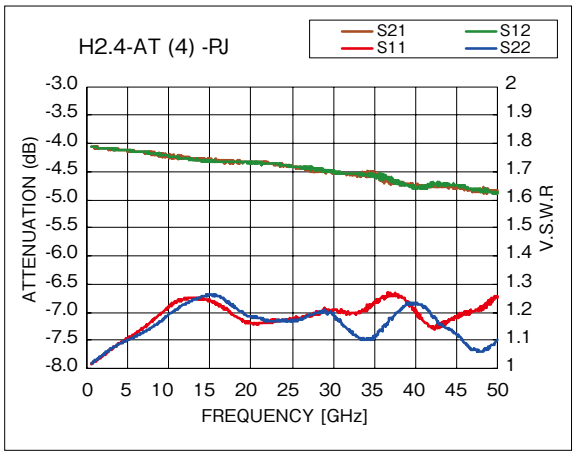
Frequency Characteristics (TYPICAL)

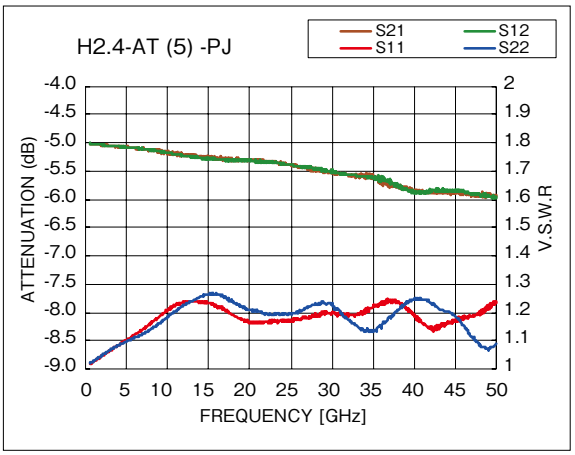


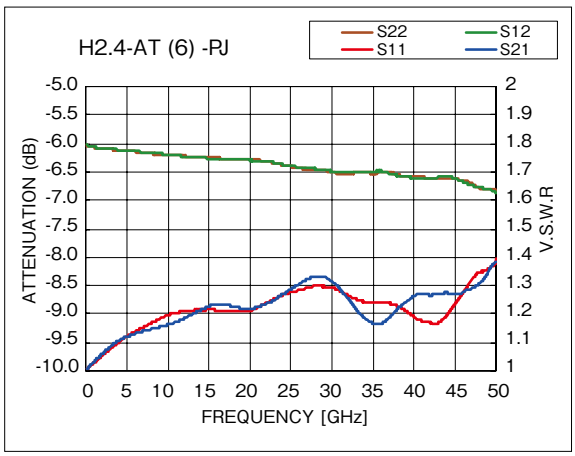


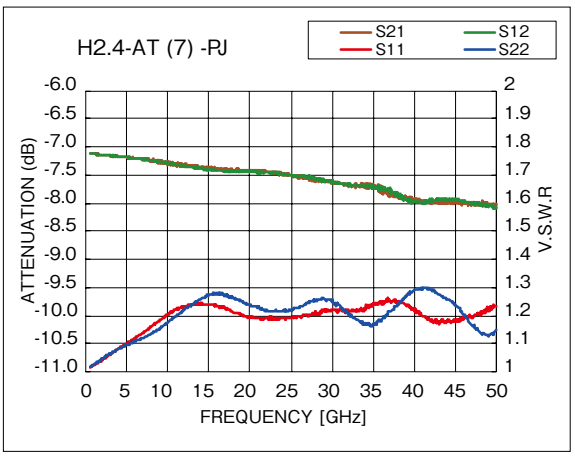


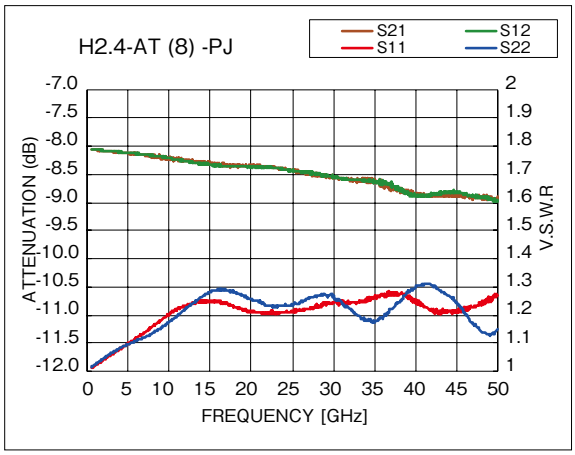


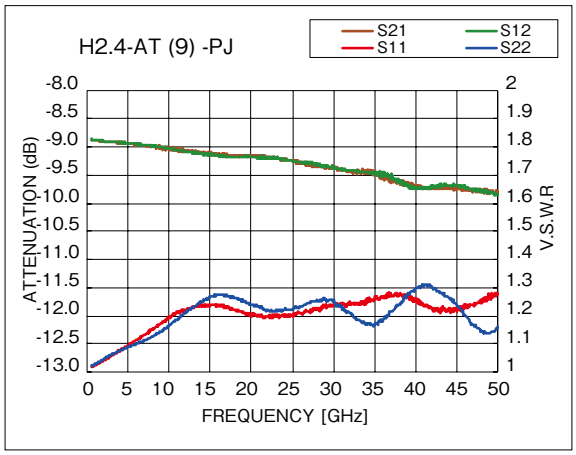


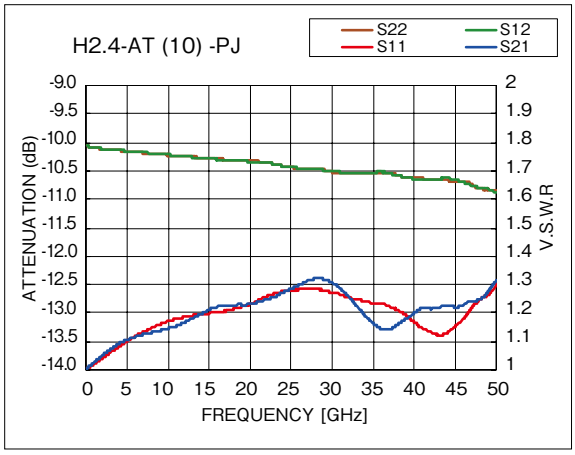


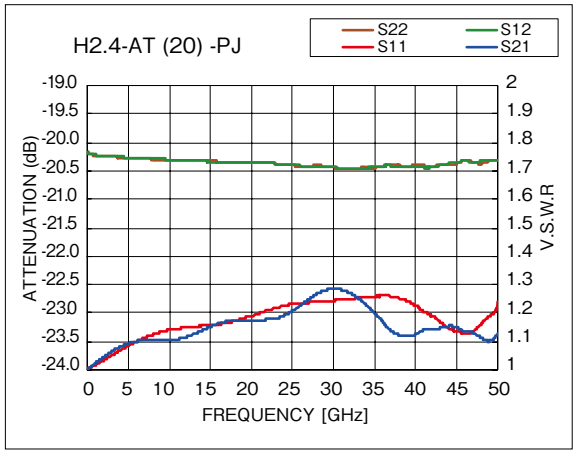












Precautions

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