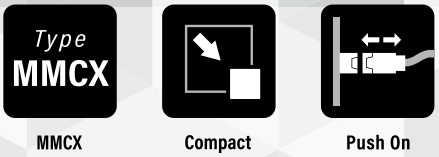
PRODUCT CATALOG

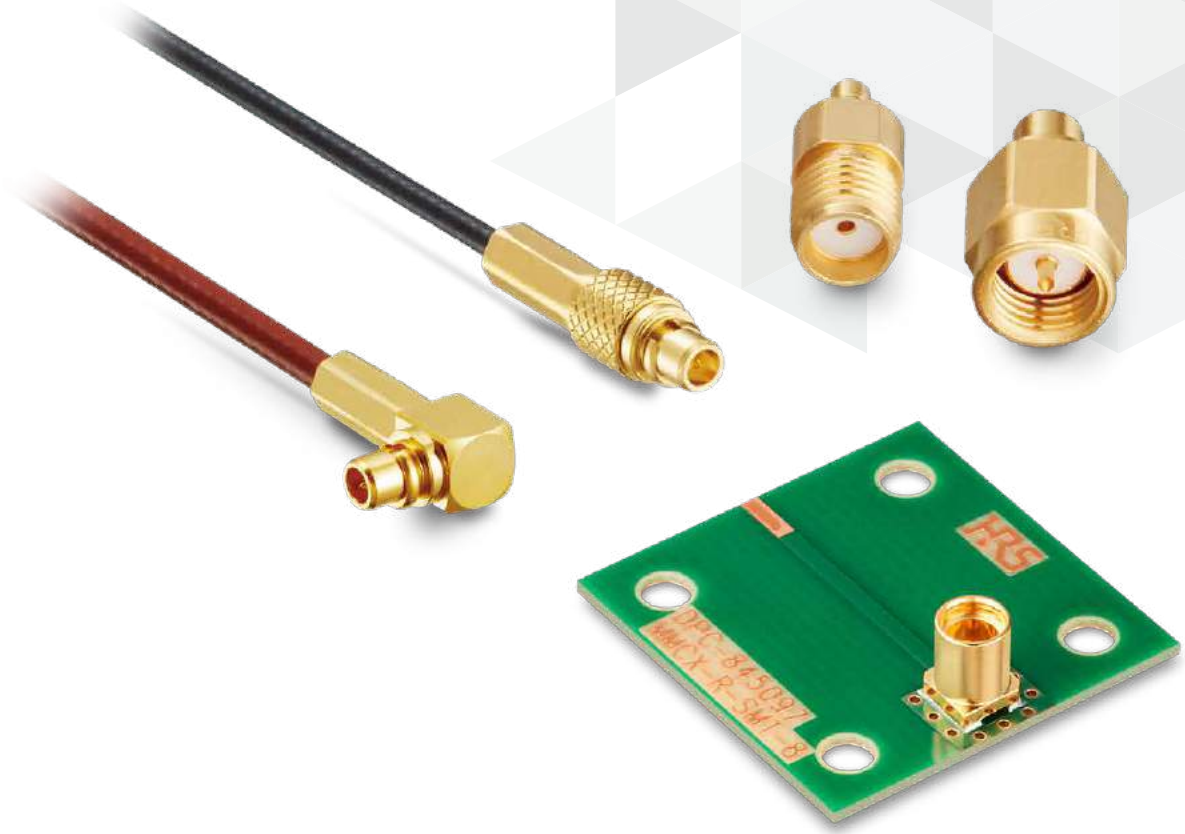
HIROSE ELECTRIC CO.,LTD.

MMCX Series

Ultra-small Push-on Coaxial Connector



MMCX Compact Push On



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Jan. 2022①

Features

1. Push-on System for Easy Attachment and Removal

2. Applicable Cable

RG Type High Frequency Coaxial Cable
・RG-178B/U (φ1.8)
・RG-316/U (φ2.59 Max.)

Extra-fine Fluororesin Cable
・Single Shielded Cable (φ1.13, φ1.37, φ1.48)
・Double Shielded Cable (φ1.32)

Semi-flexible Cable
・External conductor diameter equivalent to 0.085 inches
(With jacket finishing diameter is φ2.5)
・External conductor diameter equivalent to 0.047 inches
(With jacket finishing diameter is φ1.44)

3. Double-ended Cable Assembly with Other Hirose Series

Double-ended cable assembly available with H.FL, U.FL, SMA, and SMA(R).

4. High Frequency Characteristics

Guaranteed frequency : DC to 8GHz
(The guaranteed frequency of some parts is DC to 6GHz.)

5. Two Types of Plugs Available

In addition to the standard plug, a mating compatible outer conductor contact reinforced type is also available.

6. RoHS2 Compliant

Application Examples

Wireless LAN, GPS, POS, Measurement Instrument, Wiring Inside Transmission Equipment

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Product Specifications

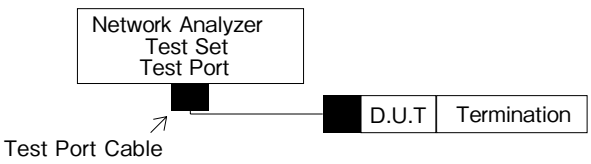
Characteristic Impedance	50Ω	Operating Temperature	-55 to +85℃
Rated Frequency	DC to 8GHz	Operating Humidity Range	90% Max.

Item	Specification	Condition
Insulation Resistance	500 MΩ Min.	Measured with 500V DC
Withstanding Voltage	No flashover or insulation breakdown	500V AC for 1 min.
Contact Resistance	Center : 10mΩ Max. Outer : 5mΩ Max.	Measured at a maximum of 100mA (DC or 1000Hz)
Retention Force of Female Contact	0.2 to 2N	Measured with ϕ0.37 pin gauge.
Total Insertion / Extraction Force (Plug)	Insertion Force : 15N Max., Extraction Force : 6 to 15N	Standard Type
	Extraction Force : 6N Min.	Outer Conductor Contact Reinforced Type [MMCX(AR)]
V.S.W.R.* (Note)	1.2 Max.	DC to 6GHz
	1.4 Max.	6 to 8GHz
Vibration Resistance	No electrical discontinuity for 1 μs or more. No damaged, cracks or loose parts.	Frequency of 10 to 500Hz, single amplitude of 0.75mm,acceleration of 98m/s^2 for 12 cycles in each of the 3 axes direction.
Thermal Shock	No electrical discontinuity for 1 μs or more. No damaged, cracks or loose parts.	Acceleration of 735m/s^2, for a duration of 6ms, sine half-wave waveform, 3 cycles in each of the 3 axes direction.
Humidity Resistance	No damaged, cracked or loose parts Insulation Resistance : 10MΩ Min. (High Humidity) Insulation Resistance : 500MΩ Min. (Dry)	96 hours at temperature of 40℃ and humidity of 95%.
Temperature Cycle	No damaged, cracked or loose parts.	Temperature : -55℃ → +20 to +35℃ → +85℃ → +20 to +35℃ Time : 30 min. → 5 min. → 30 min. → 5 min. 5 cycles
Mating Durability	Contact Resistance Center : 20mΩ Max. Outer : 10mΩ Max.	Mating/unmating : 500 mating cycles : Standard Type Mating/unmating : 100 mating cycles : Outer Conductor Contact Reinforced Type [MMCX(AR)]
Salt Spray	Satisfies the V.S.M.R.	5% salt water solution for 48 consecutive hours

Note : Refer to section on V.S.W.R. for details.

* V.S.W.R. Measurement System

The above V.S.W.R. standard values were measured using the measurement system shown below.



Note 1 : The cable connector is measured attached to a double-ended cable assembly with an applicable 15cm cable.
Note 2 : The board connector is measured while mounted to a 50Ω board and attached to a dedicated adapter.

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● V.S.W.R.

V.S.W.R is 1.2 Max. (DC to 6GHz) or 1.4 Max. (6 to 8GHz) excluding the products listed below.

Item	Part No.	V.S.W.R.
Receptacle	MMCX-R-SMT-8	1.2 Max. (DC to 8GHz)
	MMCX-LR-SMT(40)	1.2 Max. (DC to 4GHz) 1.3 Max. (4 to 6GHz) 1.4 Max. (6 to 8GHz)
	MMCX-R-PC(40)	1.2 Max. (DC to 6GHz)
	MMCX-LR-PC-1(40)	1.3 Max. (DC to 3GHz) 1.5 Max. (3 to 6GHz)
Plug / Jack	MMCX(AR)-P-SF047 MMCX(AR)-P-SF085 MMCX(AR)-LP-SF047 MMCX-PJ-SF085	1.3 Max. (DC to 3GHz) 1.4 Max. (3 to 8GHz)
	MMCX(AR)-LP-SF085	1.3 Max. (DC to 3GHz) 1.4 Max. (3 to 4GHz) 1.5 Max. (4 to 5GHz) 1.6 Max. (5 to 6GHz)

Materials / Finish

Component	Material	Finish
Shell	Brass Stainless steel (Conversion Adapter)	Gold Plating
Male Center Contact	Phosphor Bronze	Gold Plating
Female Center Contact	Beryllium Copper	Gold Plating
In-line Contact (Male/Female)	Beryllium Copper (Conversion Adapter)	Gold Plating
Insulator	PTFE Resin	–
Securing Ring	Beryllium Copper (Plug)	Gold Plating
Crimp Sleeve	Bronze	Gold Plating
Cap	Brass (Plug)	Gold Plating

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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.

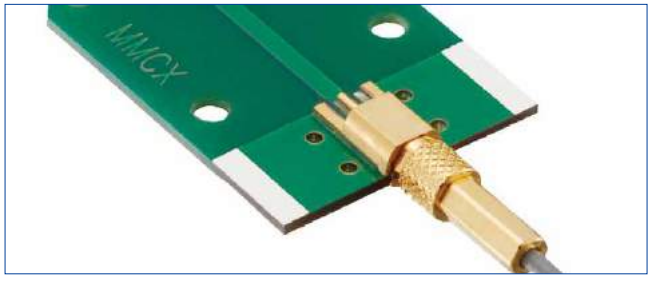
■ Standard Type

MMCX - LP - 066 (40)
① ② ③ ④

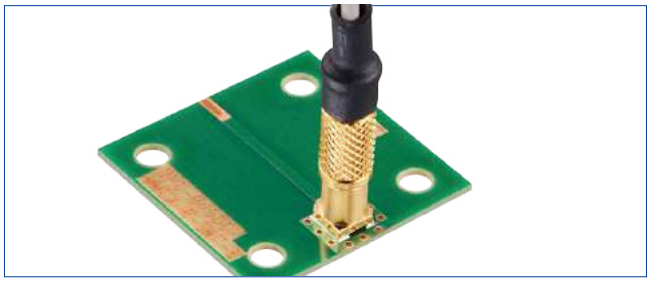
① Series Name	MMCX	③ Applicable Cable /PCB Mounting Style	178B/U : RG-178B/U (ϕ 1.8) 316/U : RG-316/U (ϕ 2.59 Max.) FHSB : ϕ 1.48 (Single Shielded Cable) Coaxial Fluororesin Cable 088 : ϕ 1.37 (Single Shielded Cable) Coaxial Fluororesin Cable 066 : ϕ 1.32 (Double Shielded Cable) Coaxial Fluororesin Cable : ϕ 1.13 (Single Shielded Cable) Coaxial Fluororesin Cable SF085 :External Conductor Diameter Equivalent to 0.085 Inches (With Jacket Finishing Diameter is ϕ 2.5) PC : PCB Through Hole Type SMT : PCB SMT Mounting Type
② Connector Type	P : Straight Plug LP : Right Angle Plug PJ, BPJ : Pannel Jack J : Straight Jack LR : Right Angle Receptacle R : Receptacle	④ Specifications	RoHS2 Compliant

Examples of Mated Condition

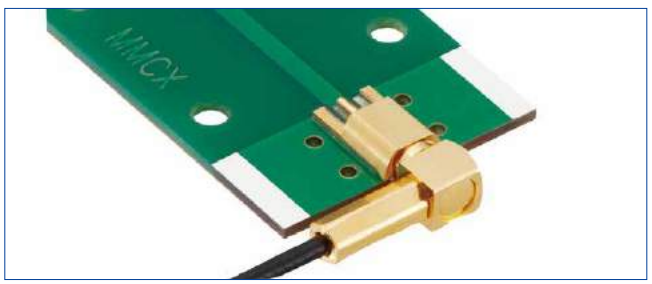
Right Angle Receptacle + Straight Plug



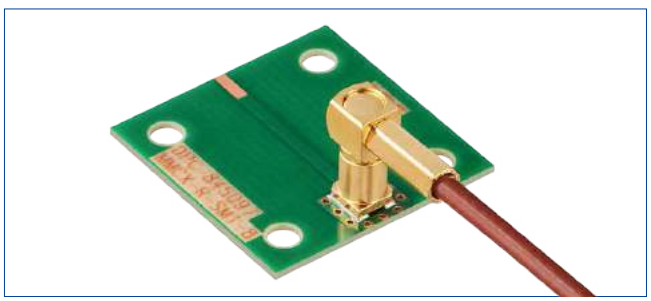
Straight Receptacle + Straight Plug



Right Angle Receptacle + Right Angle Plug



Straight Receptacle + Right Angle Plug



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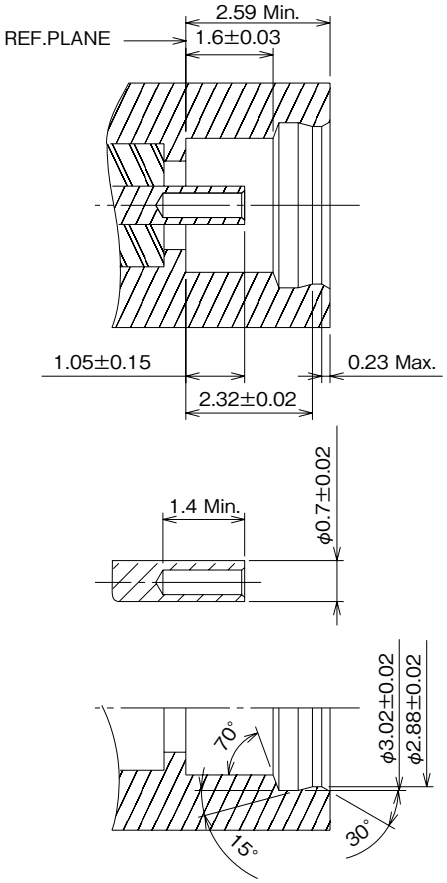
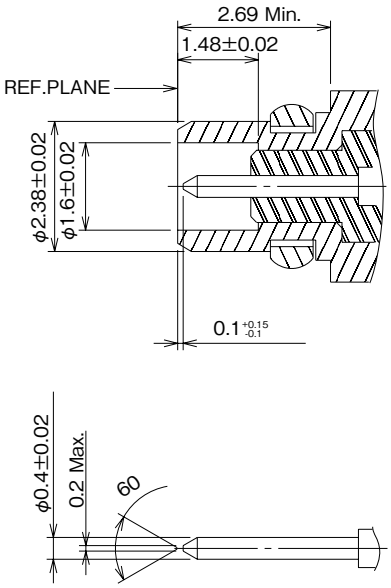
Interface Dimensions

[Jack]

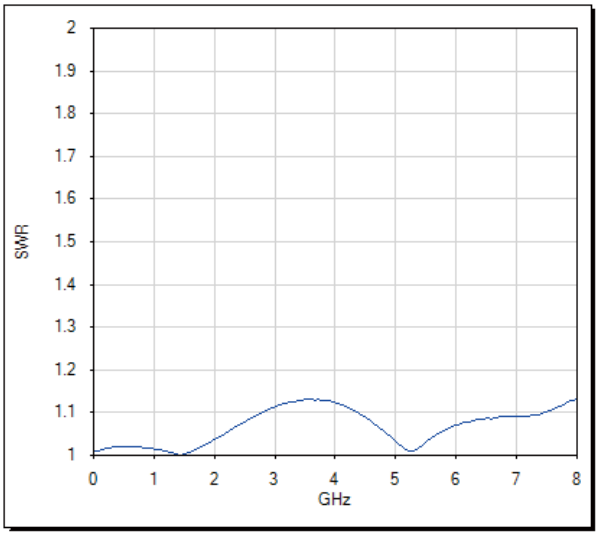


[Plug]

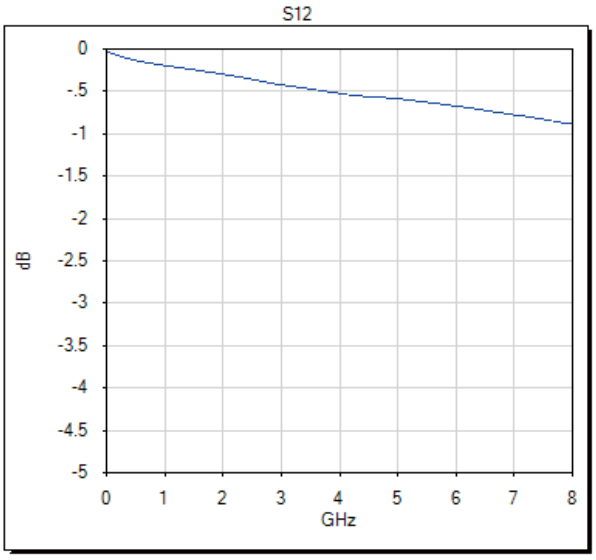


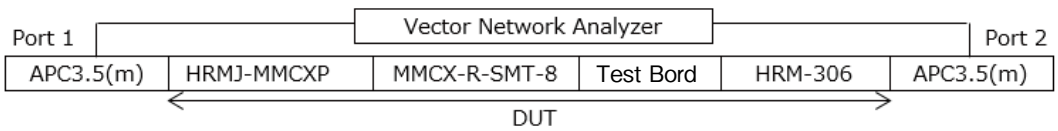
[Reference] MMCX-R-SMT-8 High Frequency Characteristics

■Insertion Loss



■V.S.W.R.





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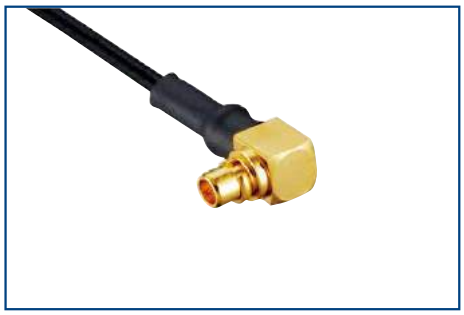
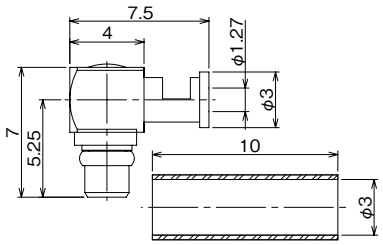
Right Angle Plug

● For ϕ1.32 Double Shielded Cable
For ϕ1.13 Single Shielded Cable

Connects with U.FL-LP-066HF(06).

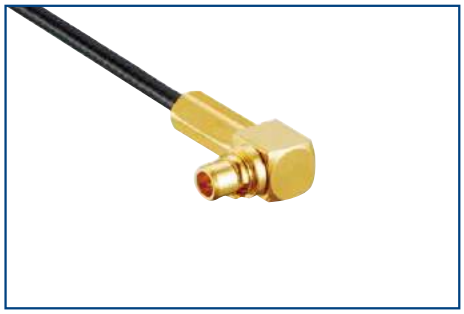


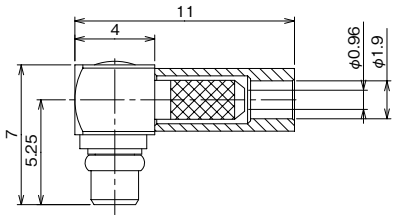


Part No.	HRS No.	Purchase Unit
MMCX-LP-066(40)	CL0339-0019-2-40	20pcs per bag

● For ϕ1.37 Single Shielded Cable

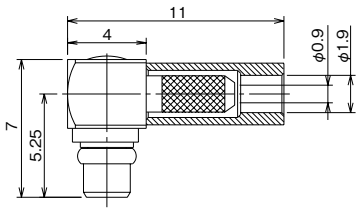
Connects with U.FL-LP-088HF(06).





Part No.	HRS No.	Purchase Unit
MMCX-LP-088(40)	CL0339-0020-1-40	20pcs per bag

● For ϕ1.48 Single Shielded Cable



Part No.	HRS No.	Purchase Unit
MMCX-LP-FHSB(40)	CL0339-0007-3-40	100pcs per bag

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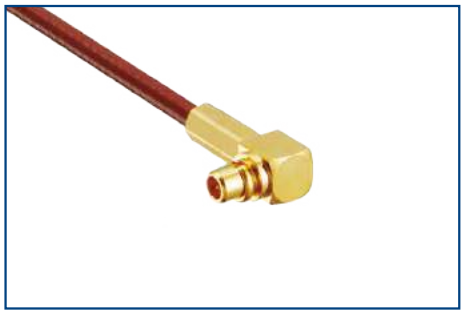
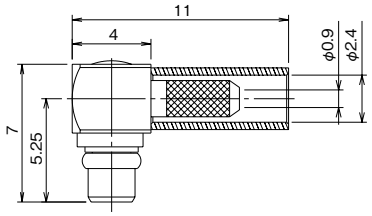
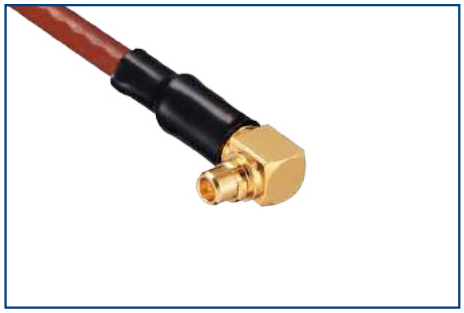
● For RG-178B/U Cable

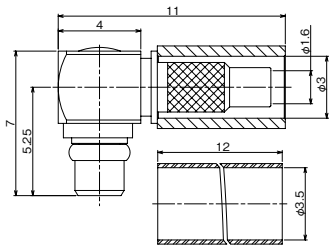




Part No.	HRS No.	Purchase Unit
MMCX-LP-178B/U(40)	CL0339-0001-7-40	20pcs per bag

● For RG-316/U Cable





Part No.	HRS No.	Remarks
MMCX-LP-316/U(40)	CL0339-0006-0-40	We accept cable assembly specifications. Please contact a Hirose sales representative.

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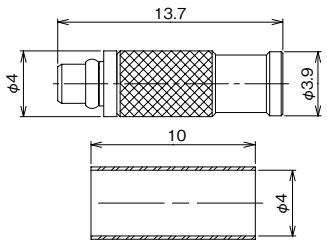
Straight Plug

● For ϕ1.32 Double Shielded Cable
For ϕ1.13 Single Shielded Cable

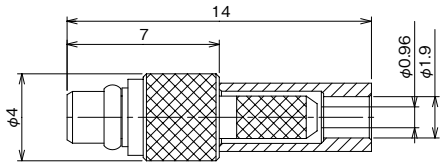
Connects with U.FL-LP-066HF(06).



Part No.	HRS No.	Purchase Unit
MMCX-P-066(40)	CL0339-0023-0-40	100pcs per bag

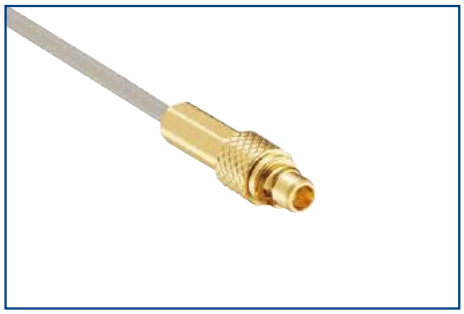
● For ϕ1.37 Single Shielded Cable

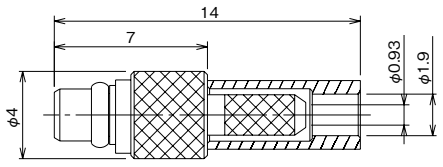
Connects with U.FL-LP-088HF(06).



Part No.	HRS No.	Purchase Unit
MMCX-P-088(40)	CL0339-0021-4-40	20pcs per bag

● For ϕ1.48 Single Shielded Cable





Part No.	HRS No.	Purchase Unit
MMCX-P-FHSB(40)	CL0339-0008-6-40	100pcs per bag

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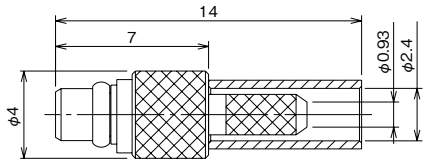
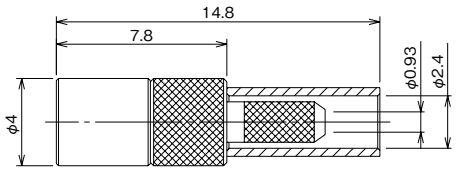
● For RG-178B/U Cable



Part No.	HRS No.	Purchase Unit
MMCX-P-178B/U(40)	CL0339-0010-8-40	20pcs per bag

Straight Jack

● For RG-178B/U Cable



Part No.	HRS No.	Purchase Unit
MMCX-J-178B/U(40)	CL0339-0011-0-40	100pcs per bag

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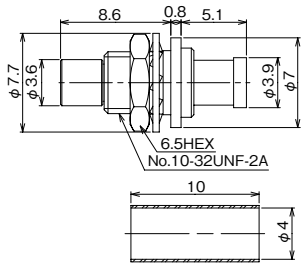
Panel Jack

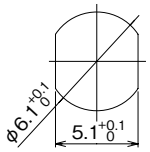
● For φ1.32 Double Shielded Cable
For φ1.13 Single Shielded Cable

Connects with U.FL-LP-066HF(06).



Part No.	HRS No.	Remarks
MMCX-BPJ-066(40)	CL0339-0016-4-40	We accept cable assembly specifications. Please contact a Hirose sales representative.

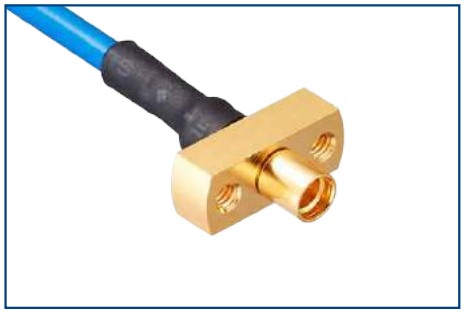
■ Panel Cut-Out Dimensions

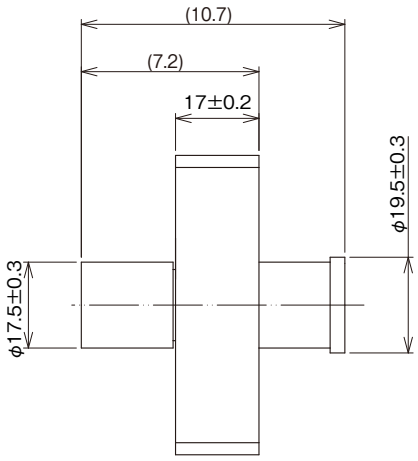


Recommended Panel Thickness : 1.3 to 2.5mm

● For Semi-flexible Cable (Low Loss Type)

External conductor diameter equivalent to 0.085 Inches. (With jacket finishing diameter is φ2.5.)





Part No.	HRS No.	Remarks
MMCX-PJ-SF085	CL0339-0045-0-00	We accept cable assembly specifications. Please contact a Hirose sales representative.

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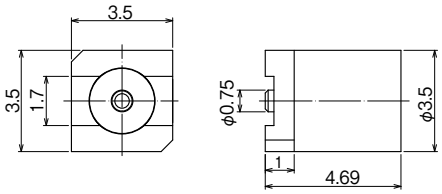
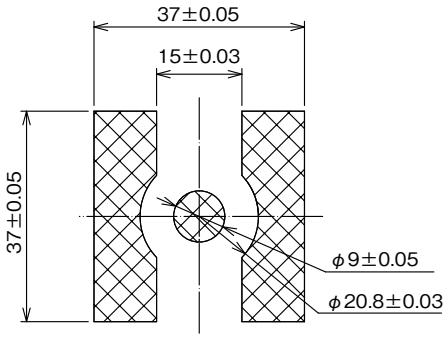
Receptacle

● For Straight SMT

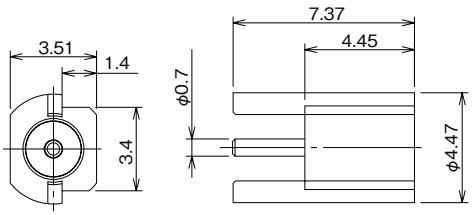


Part No.	HRS No.	Purchase Unit
MMCX-R-SMT-8	CL0339-0046-0-00	500pcs per reel

■ Recommended PCB Layout

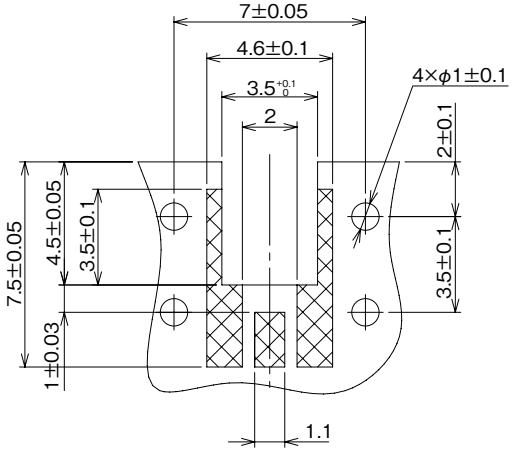


● For Right Angle SMT



Part No.	HRS No.	Purchase Unit
MMCX-LR-SMT(40)	CL0339-0003-2-40	50pcs per tray

■ Recommended PCB Layout



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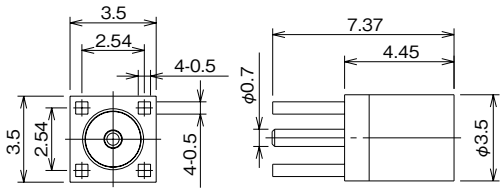
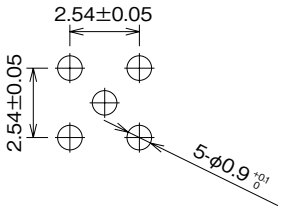
● For Straight Through-Hole

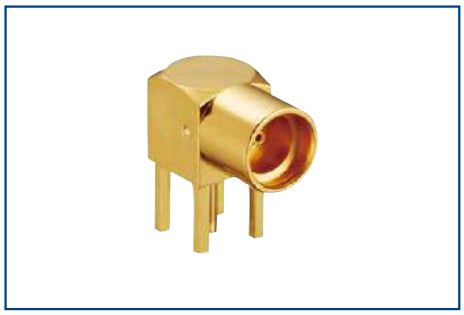


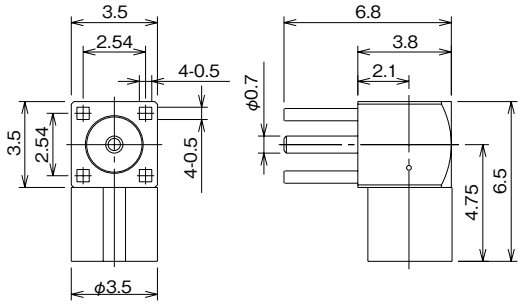
Part No.	HRS No.	Purchase Unit
MMCX-R-PC(40)	CL0339-0005-8-40	100pcs per bag

■ Recommended PCB Dimensions



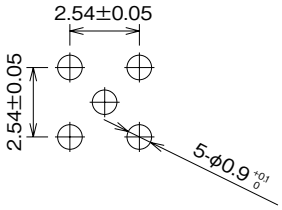
● For Right Angle Through-Hole





Part No.	HRS No.	Purchase Unit
MMCX-LR-PC-1(40)	CL0339-0013-6-40	10pcs per bag

■ Recommended PCB Dimensions



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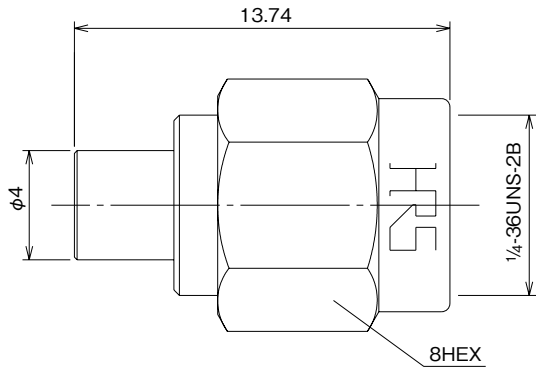
Conversion Adapter

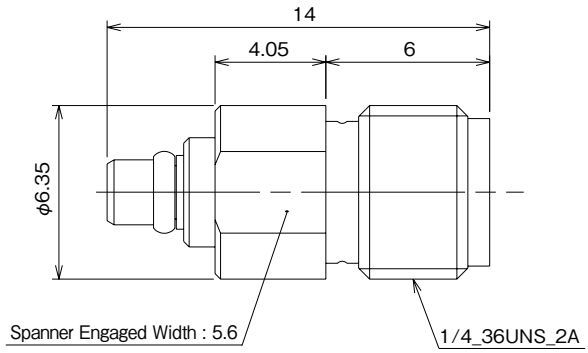
● SMA Conversion Adapter (Mated Portion : SMA Plug - MMCX Jack)



Part No.	HRS No.	Purchase Unit
HRMP-MMCXJ	CL0311-0312-1-00	20pcs per bag

Note : Can be used with standard type and outer conductor contact reinforced type (MMCX[AR]) MMCX plugs.

● SMA Conversion Adapter (Mated Portion : SMA Jack - MMCX Plug)



Part No.	HRS No.	Purchase Unit
HRMJ-MMCXP	CL0311-0313-4-00	20pcs per bag

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Plug/Jack Termination Tools

Item	Part No.	Tool	HRS No.	Usage
Right Angle Plug	MMCX-LP-066(40)	MMCX-LP/PR-MP	CL0902-3064-6-00	Cap Press Fitting
	MMCX-LP-088(40)	HT103/MRF01-J-178	CL0350-0128-5-00	Outer Conductor Tightening
		MMCX-LP/PR-MP	CL0902-3064-6-00	Cap Press Fitting
	MMCX-LP-FHSB(40)	HT103/MRF01-J-178	CL0350-0128-5-00	Outer Conductor Tightening
		MMCX-LP/PR-MP	CL0902-3064-6-00	Cap Press Fitting
	MMCX-LP-178B/U(40)	HT103/MRF01-J-178	CL0350-0128-5-00	Outer Conductor Tightening
		MMCX-LP/PR-MP	CL0902-3064-6-00	Cap Press Fitting
Straight Plug	MMCX-P-066(40)	MMCX-P-066/CV-MD	CL0902-3272-0-00	Clamp Press Fitting
	MMCX-P-088(40)	HT103/MRF01-J-178	CL0350-0128-5-00	Outer Conductor Tightening
	MMCX-P-FHSB(40)	HT103/MRF01-J-178	CL0350-0128-5-00	Outer Conductor Tightening
	MMCX-P-178B/U(40)	HT103/MRF01-J-178	CL0350-0128-5-00	Outer Conductor Tightening
Straight Jack	MMCX-J-178B/U(40)	HT103/MRF01-J-178	CL0350-0128-5-00	Outer Conductor Tightening

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Outer Conductor Contact Reinforced Plug Connector [MMCX(AR)]

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.

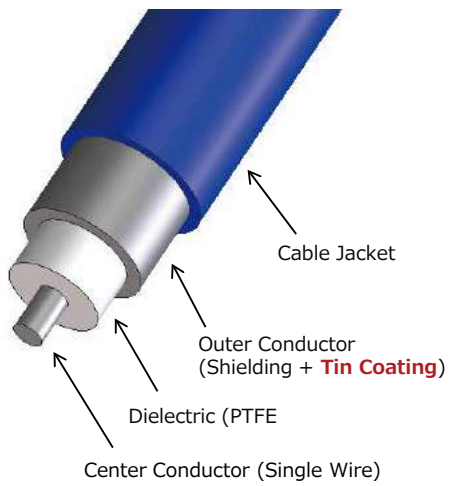
MMCX (AR) - LP - 066
❶ ❷ ❸ ❹

❶ Series Name	MMCX	❹ Applicable Cable or Board Mounting Style	178B/U : RG-178B/U (ϕ 1.8) FHSB : ϕ 1.48 (Single Shielded Cable) Coaxial Fluororesin Cable 088 : ϕ 1.37 (Single Shielded Cable) Coaxial Fluororesin Cable 066 : ϕ 1.32 (Double Shielded Cable) Coaxial Fluororesin Cable : ϕ 1.13 (Single Shielded Cable) Coaxial Fluororesin Cable SF085 : External Conductor Diameter Equivalent to 0.085 Inches (With Jacket Finishing Diameter is ϕ 2.5) SF047 : External Conductor Diameter Equivalent to 0.047 Inches (With Jacket Finishing Diameter is ϕ 1.44)
❷ Outer Conductor Contact Reinforced Type	(AR)		
❸ Connector Type	P : Straight Plug LP : Right Angle Plug TMP : Termination Plug		

[Reference] Semi-flexible Cable Configuration and Cable Loss Comparison

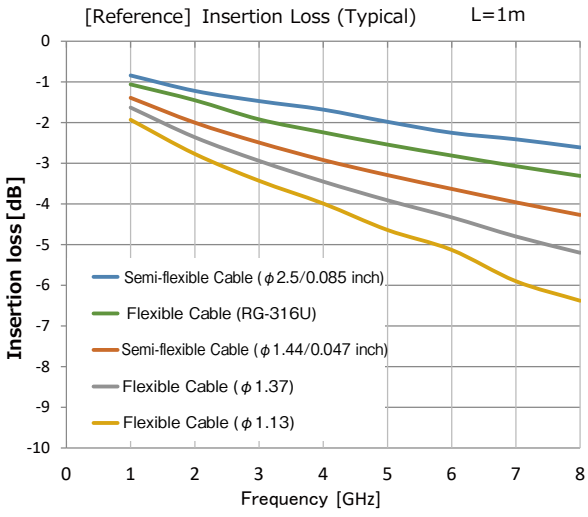
Semi-flexible Cable Configuration

Excellent Electrical Performance Due to Tin-Coated Braided Shielding



Insertion Loss Comparison

(Semi-flexible Cable & Flexible Cable)



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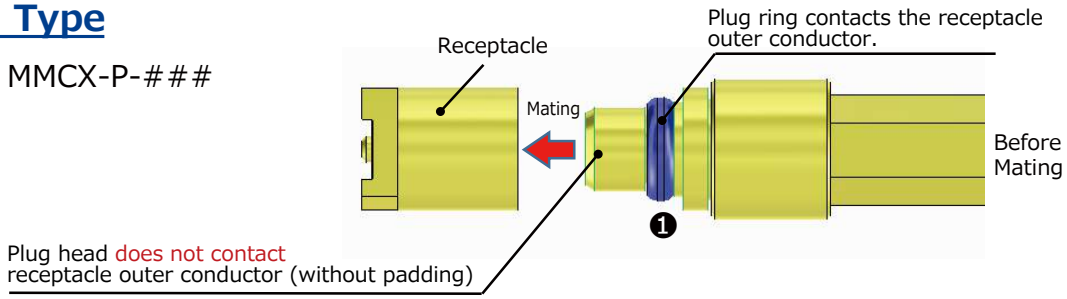
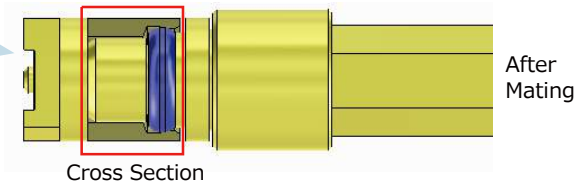
Standard Type and Outer Conductor Contact Reinforced Type [MMCX(AR)]

Standard Type

Product : MMCX-P-###



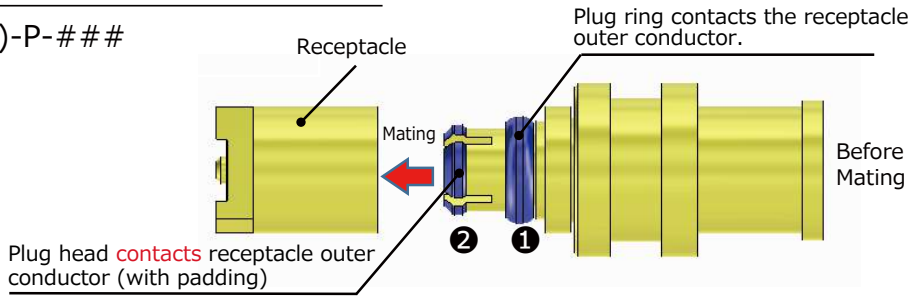
Only a single point makes contact with the outer conductor.



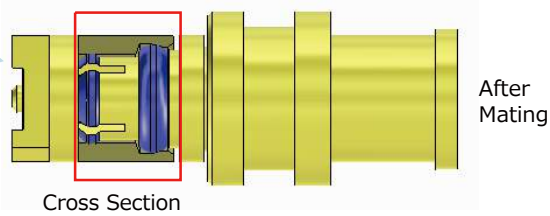
Outer Conductor Contact Reinforced Type [MMCX(AR)]

Since the contact is strengthened compared to the standard type, mating feels tighter.

Product : MMCX(AR)-P-###



Contact with the receptacle outer conductor at two points enhances prying force and ensures high contact reliability even in difficult wiring conditions.



Mating and Extraction Forces Comparison (Reference Value)

(Reference Value)	Mating Force	Extraction Force
Standard Type	15N	15N
Outer Conductor Contact Reinforced Type [MMCX(AR)]	35N	25N

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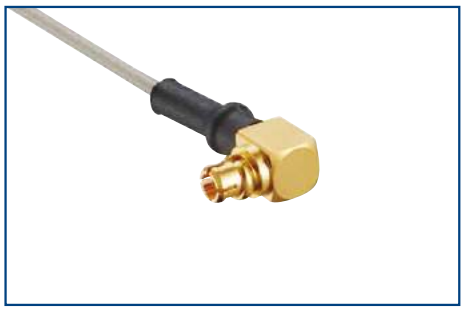
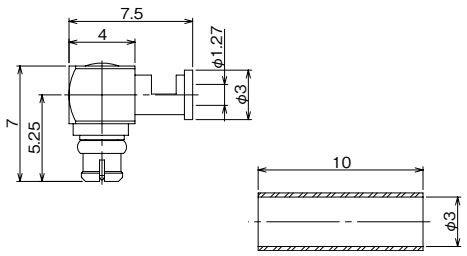
Right Angle Plug

● For ϕ1.32 Double Shielded Cable
For ϕ1.13 Single Shielded Cable

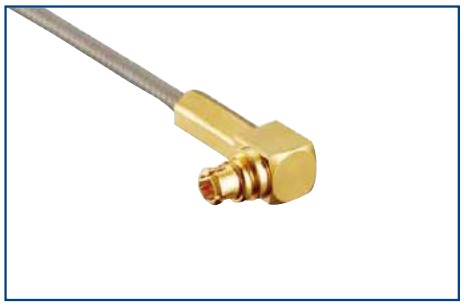
Connects with U.FL-LP-066HF(06).

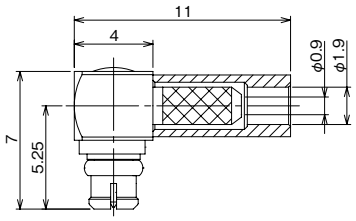




Part No.	HRS No.	Purchase Unit
MMCX(AR)-LP-066	CL0339-0031-8-00	20pcs per bag

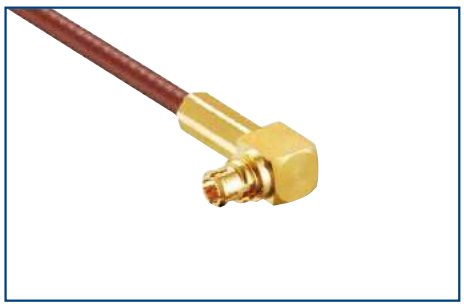
● For ϕ1.48 Single Shielded Cable

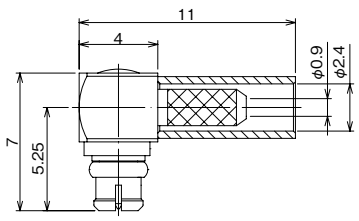




Part No.	HRS No.	Purchase Unit
MMCX(AR)-LP-FHSB	CL0339-0035-9-00	100pcs per bag

● For RG-178B/U Cable





Part No.	HRS No.	Purchase Unit
MMCX(AR)-LP-178B/U	CL0339-0033-3-00	100pcs per bag

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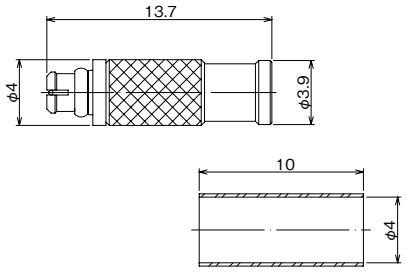
Straight Plug

● For ϕ1.32 Double Shielded Cable
For ϕ1.13 Single Shielded Cable

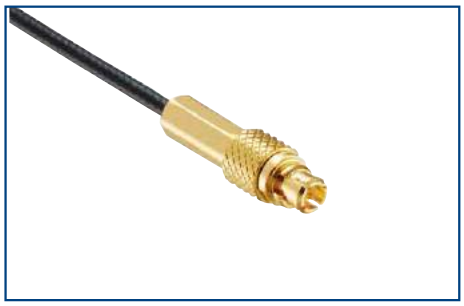
Connects with U.FL-LP-066HF(06).

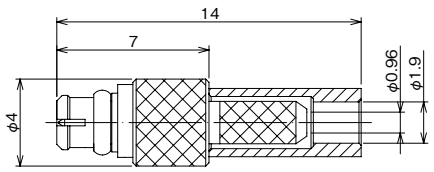


Part No.	HRS No.	Purchase Unit
MMCX(AR)-P-066	CL0339-0030-5-00	100pcs per bag

● For ϕ1.37 Single Shielded Cable

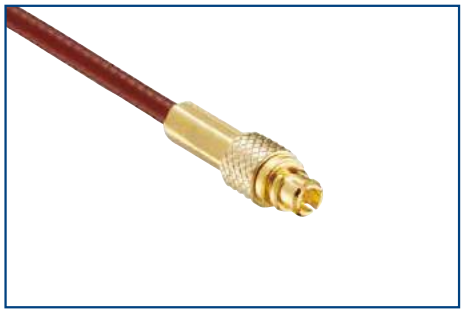
Connects with U.FL-LP-088HF(06).

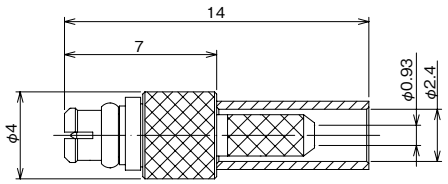




Part No.	HRS No.	Purchase Unit
MMCX(AR)-P-088	CL0339-0037-4-00	20pcs per bag

● For RG-178B/U Cable





Part No.	HRS No.	Purchase Unit
MMCX(AR)-P-178B/U	CL0339-0038-7-00	100pcs per bag

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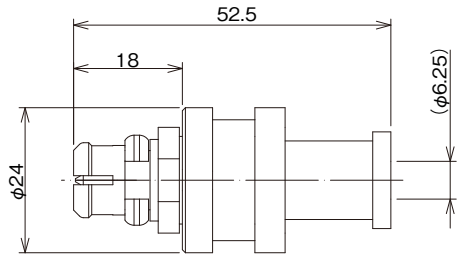
● For Semi-flexible Cable (Low Loss Type)

External conductor diameter equivalent to 0.047 Inches. (With jacket finishing diameter is φ1.44.)



Part No.	HRS No.	Remarks
MMCX(AR)-P-SF047	CL0339-0032-0-00	We accept cable assembly specifications. Please contact a Hirose sales representative.

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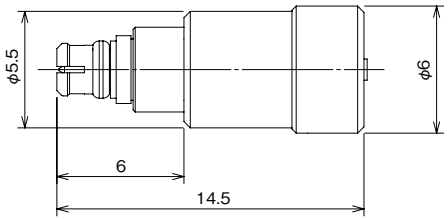
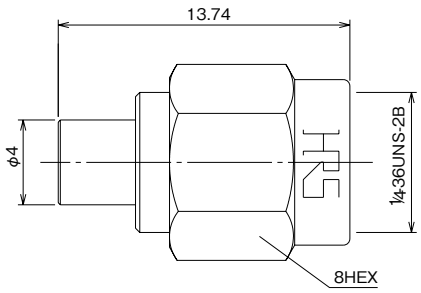
Non-reflective Terminator



Part No.	HRS No.	Electric Power (W)	Purchase Unit
MMCX(AR)-TMP	CL0353-0010-0-00	1/4	20pcs per bag

Conversion Adapter

● SMA Conversion Adapter (Mated Portion : SMA Plug - MMCX Jack)



Part No.	HRS No.	Purchase Unit
HRMP-MMCXJ	CL0311-0312-1-00	20pcs per bag

Note : Can be used with standard type and outer conductor contact reinforced type (MMCX[AR]) MMCX plugs.

Plug Termination Tools

Item	Part No.	Tool	HRS No.	Usage
Right Angle Plug	MMCX(AR)-LP-066	MMCX-LP/PR-MP	CL0902-3064-6-00	Cap Press Fitting
	MMCX(AR)-LP-FHSB	HT103/MRF01-J-178	CL0350-0128-5-00	Outer Conductor Tightening
		MMCX-LP/PR-MP	CL0902-3064-6-00	Cap Press Fitting
	MMCX(AR)-LP-178B/U	HT103/MRF01-J-178	CL0350-0128-5-00	Outer Conductor Tightening
		MMCX-LP/PR-MP	CL0902-3064-6-00	Cap Press Fitting
Straight Plug	MMCX(AR)-P-066	MMCX-P-066/CV-MD	CL0902-3272-0-00	Clamp Press Fitting
	MMCX(AR)-P-088	HT103/MRF01-J-178	CL0350-0128-5-00	Outer Conductor Tightening
	MMCX(AR)-P-178B/U	HT103/MRF01-J-178	CL0350-0128-5-00	Outer Conductor Tightening

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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.

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https://www.hirose.com

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