IEEE-std-287 Conformed

Precision Coaxial Connectors

Adapters Within Series

- 3.5mm/3.5mm
  DC - 26.5GHz
- 2.92mm/2.92mm
  DC - 40GHz
- 2.4mm/2.4mm
  DC - 50GHz
- 1.85mm/1.85mm
  DC - 65GHz
- 1mm/1mm
  DC - 110GHz

Adapters Between Series

- 3.5mm/2.4mm
  DC - 26.5GHz
- 2.92mm/2.4mm
  DC - 40GHz
- 2.92mm/1.85mm
  DC - 50GHz
- 2.4mm/1.85mm
  DC - 65GHz
- 1.85mm/1mm
  DC - 67GHz

Panel Adapters

- 1.85mm/1.85mm
  DC - 65GHz

Front Panel Adapter

- 2.92mm/2.92mm
  DC - 40GHz

Launchers & Glass Beads

- 2.92mm
  DC - 40GHz

Hermetic Adapter

- 1.85mm/1.85mm
  DC - 65GHz

Re-Formable Semirigid Cable Assemblies

1mm for DC - 110GHz, 1.85mm for DC - 60GHz and DC - 65GHz, 2.92mm for DC - 40GHz. Also available between assemblies.

Distributed From:

SHF Communication Technologies AG
URL http://www.shf.de/

Manufactured by: Kawashima Manufacturing Co., Ltd.
URL http://www.km.co.bz/
**DESCRIPTION**

These "KPC100MF, FF and MM" coaxial adapters that small size, low SWR and low loss, are designed for the ultra-broadband (up to sub-millimeter wave) measurement, instrument and system use.

**SPECIFICATIONS:**

**Electrical:**
- Frequency Range: DC - 110 GHz
- Return Loss: Better than 18dB(**), 15dB(***)
- Insertion Loss: <0.45dB
- Electrical Length: 11.6 mm [Nominal]
- Temperature Range: -55 to +125 • •

**Mechanical:**
- Body and Outer Conductors: -Gold Plated Stainless steel
- Inner Conductors: -Gold Plated Beryllium Copper and Brass
- Coupling Torque: 45 N-cm (Nominal)
- Connect/Disconnect Life: >500 Cycles [Predicted]

**Typical Performance**

**TYPE: KPC100MF**

1mm Male/1mm Female

**TYPE: KPC100FF**

1mm Female/1mm Female

**TYPE: KPC100MM**

1mm Male/1mm Male

**Note:**
- All dimensions are in Millimeters.
- (*) Calibration as Insertable-Device
- (**) Calibration as Non-Insertable-Device

Specifications Subject to Change Without Notice.

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**DC - 110GHz, Flange Launchers**

**DESCRIPTION**
“KPC100F311 and KPC100M311” flange launchers are designed for ultra-broadband devices and units with coaxial I/O interfaces.

**SPECIFICATIONS:**

**Electrical:**
- Frequency Range: DC - 110 GHz
- Return Loss: Better than 15 dB (*)
- Insertion Loss: <0.7dB (*)
- Electrical Length: 11.1 mm [Nominal]
- Temperature Range: -55 to +125 Deg.C (1)

**Mechanical:**
- Body and Outer Conductors: Gold Plated Stainless steel
- Inner Conductors: Gold Plated Beryllium Copper and Brass
- Coupling Torque: 45 N-cm(Nominal)
- Connect/Disconnect Life: >500 Cycles [Predicted]

**TYPE: KPC100F311**
1mm Female

**TYPE: KPC100M311**
1mm Male

---

**Typical Performance**

Note: (*) As Std Test Configuration

| Frequency GHz | Return Loss|S11|, dB (Incl. Test Fixture Loss) | Insertion Loss|S21|, dB |
|---------------|------------|----------------|----------------|----------------|
| 0             | -60.0       | +0.2/-0.2      | -0.3/-0.1      | -0.1            |
| 2             | -40.0       | +0.2/-0.2      | -0.3/-0.1      | -0.1            |
| 4             | -30.0       | +0.2/-0.2      | -0.3/-0.1      | -0.1            |
| 6             | -20.0       | +0.2/-0.2      | -0.3/-0.1      | -0.1            |
| 8             | -10.0       | +0.2/-0.2      | -0.3/-0.1      | -0.1            |
| 10            | 0.0         | 0.2            | -0.1            | -0.1            |
| 12            | 10.0        | 0.2            | -0.1            | -0.1            |
| 14            | 20.0        | 0.2            | -0.1            | -0.1            |
| 16            | 30.0        | 0.2            | -0.1            | -0.1            |
| 18            | 40.0        | 0.2            | -0.1            | -0.1            |
| 20            | 50.0        | 0.2            | -0.1            | -0.1            |

---

**Interface Mating Dimensions of KPC100**

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Pins</td>
<td>M4 x 0.7-6g</td>
</tr>
<tr>
<td>HEX</td>
<td></td>
</tr>
</tbody>
</table>

---

Note:
- All dimensions are in Millimeters.
- (1) Temperature Range, short period: 200 deg.C.
- (2) Tip of PIN to be touching “Pin Convex” in final assembly

Specifications subject to change without notice.

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http://www.kmco.biz/ e-mail: sales@kmco.co.jp
1.85mm/1.85mm
DC - 65GHz, Coaxial Adapters, In-Series

DESCRIPTION
These "KPC185MF, FF and MM" coaxial adapters that small size, low SWR and low loss, are designed for broadband measurement, instrument and system use.

SPECIFICATIONS:
Electrical:
- Frequency Range: DC - 65 GHz
- SWR: <1.3
- Insertion Loss: <0.35 dB
- Electrical Length: 17.5 mm (Nominal)
- Temperature Range: -55 to +125 deg.C

Mechanical:
Body and Outer Conductors:
- Passivated Stainless Steel
Inner Conductors:
- Gold Plated Beryllium Copper and Brass
Coupling Torque: 90 N-cm (Nominal)
Connect/Disconnect Life: >1,000 Cycles

Production Status
Two weeks Lead-Time will be available for shipping.

TYPE: KPC185MF
1.85mm Male/1.85mm Female

TYPE: KPC185FF
1.85mm Female/1.85mm Female

TYPE: KPC185MM
1.85mm Male/1.85mm Male

Interface Mating Dimensions of KPC185 (1.85mm Connectors<=>)

Note: All dimensions are in Millimeters.

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**DESCRIPTION**
These "KPC185MFPA, FFPA and MMPA" coaxial panel adapters that 9.5mm "D" holed panel mountable, low SWR and low loss, are designed for broadband measurement, instrument and system use.

**SPECIFICATIONS:**

**Electrical:**
- Frequency Range: DC - 65 GHz
- SWR: <1.3
- Insertion Loss: <0.4 dB
- Electrical Length: Below (Nominal)
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Body and Outer Conductors: Passivated Stainless steel (*)
- Inner Conductors: Gold Plated Beryllium Copper and Brass
- Coupling Torque: 90 N-cm (Nominal)
- Connect/Disconnect Life: >1,000 Cycles

**Note:**
- (*) The toothed lockwasher is chromate converted zinc plated steel.

**Production Status**
Two weeks Lead-Time will be available for shipping.

---

**TYPE: KPC185MFPA**
1.85mm Male/1.85mm Female

**Typical Performance**

**Insertion Loss**

**SWR**

**Interface Mating Dimensions of KPC185 (1.85mm Connectors<*>)**

Note:
- All dimensions are in Millimeters.
- (*) Matable with 2.4mm Connectors

---

**TYPE: KPC185FFPA**
1.85mm Female/1.85mm Female

**Typical Performance**

**Insertion Loss**

**SWR**

---

**TYPE: KPC185MMPA**
1.85mm Male/1.85mm Male

**Typical Performance**

**Insertion Loss**

**SWR**

---

**Note:**
- All dimensions are in Millimeters.
DC - 65GHz, Coaxial Panel Adapters For Front Access Ports

DESCRIPTION
This "KPC185MF FPA" called coaxial front panel adapter that easy to mate, low SWR and low loss, are designed for frequently connect/disconnect accessed broadband measurement, instrument and system use.

SPECIFICATIONS:

Electrical:
- Frequency Range: DC - 65 GHz
- SWR: <1.3
- Insertion Loss: <0.5 dB
- Electrical Length: Below (Nominal)
- Temperature Range: -55 to +125 deg.C

Mechanical:
- Body: Passivated Stainless steel ("")
- Outer Conductors: Gold Plated Stainless steel
- Inner Conductors: Gold Plated Beryllium Copper
- Coupling Torque: 90 N-cm (Nominal)
- Connect/Disconnect Life: >1,000 Cycles

Interface Mating Dimensions of KPC185MF FPA (1.85mm Connectors<*>)

Typical Performance

Note:
- All dimensions are in Millimeters.
- (*) The toothed lockwasher is nickel plated steel.
1.85mm
DC - 65GHz, Sparkplug Launcher Connectors & Glass Bead

DESCRIPTION
“KPC185M301/KPC185M301H and KPC185F301/KPC185F301H” sparkplug launcher connectors and “GB185” glass bead are designed for broadband devices and units with coaxial I/O interfaces.

SPECIFICATIONS:
Connectors

**Electrical:**
- Frequency Range: DC - 65 GHz
- Return Loss: >15 dB(*)
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Body and Outer Conductors: Passivated Stainless steel
- Inner Conductors: Gold Plated Beryllium Copper and Brass
- Coupling Torque: 90 N-cm(Nominal)
- Connect/Disconnect Life: >1,000 Cycles

**Glass Bead**

**Electrical:**
- Frequency Range: DC - 65 GHz
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Outer and Inner Conductors: Gold Plated FeNiCo Alloy (KOVAR)
- Insulator: #7070 Glass(Corning)

**Others:**
- Soldering temperature: 330 deg.C(max)
- He leak rate: <1x10^-10 Pa m^3/sec

**Production Status**
Two weeks Lead-Time will be available for shipping.

Typical Performance

Test configuration

Std DUT:
Cascaded KPC185M301/301H, GB185 and KPC185F301/301H

CONNECTORS

**TYPE: KPC185M301**
1.85mm Male

**TYPE: KPC185F301**
1.85mm Female

**TYPE: KPC185M301H**
1.85mm Male

**TYPE: KPC185F301H**
1.85mm Female

**TYPE: GB185**
Glass Bead

Note:
- All dimensions are in Millimeters.
- (***) Thermo-Sonic wire bondable gold plating

Specifications Subject to Change Without Notice.
1.85mm
DC - 65GHz, Two-hole Flange Launchers & Glass Bead

DESCRIPTION
"KPC185M302 and KPC185F302" Two-hole Flange Launchers and "GB185" glass bead are designed for broadband devices and units with coaxial I/O interfaces.

SPECIFICATIONS:

Connectors

**Electrical:**
- Frequency Range: DC - 65 GHz
- Return Loss: >15 dB(*)
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Body and outer conductors: -Passivated Stainless steel
- Inner Conductors: -Gold Plated Beryllium Copper and Brass
- Coupling Torque: 90 N-cm (Nominal)
- Connect/Disconnect Life: >1,000 Cycles

**Glass Bead**

**Electrical:**
- Frequency Range: DC - 65 GHz
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Outer and inner conductors: -Gold Plated (***) Fe/Ni/Co Alloy (KOVAR)
- Insulator: #7070 Glass (Corning)

**Others:**
- Soldering temperature: 330 deg.C (max)
- He leak rate: <1x10^-10 Pa m^3/sec

**Production Status**
Two weeks Lead-Time will be available for shipping.

**Typical Performance**
Note: (*) As std DUT configuration

**Test configuration**

**GB185**
Glass Bead

**KPC185M302**
1.85mm Male

**KPC185F302**
1.85mm Female

**Interface Mating Dimensions of KPC185M302 & KPC185F302 Launchers**

Note:
- All dimensions are in Millimeters.
- (***) Thermo-Sonic wire bondable gold plating

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ISO9001:2000 Certified
**2.4mm/2.4mm**

**DC - 50GHz, Coaxial Adapters, In-Series**

**DESCRIPTION**
These “KPC240MF, FF and MM” coaxial adapters that small size, low SWR and low loss, are designed for broadband measurement, instrument and system use.

**SPECIFICATIONS:**

**Electrical:**
- Frequency Range: DC - 50 GHz
- SWR: <1.25
- Insertion Loss: <0.3 dB
- Electrical Length: 17.5 mm (Nominal)
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Body and Outer Conductors: Passivated Stainless Steel
- Inner Conductors: Gold Plated Beryllium Copper and Brass
- Coupling Torque: 90 N-cm (Nominal)
- Connect/Disconnect Life: >1,000 Cycles

**Production Status**
Two weeks Lead-Time will be available for shipping.

**TYPE: KPC240MF**
2.4mm Male/2.4mm Female

**TYPE: KPC240FF**
2.4mm Female/2.4mm Female

**TYPE: KPC240MM**
2.4mm Male/2.4mm Male

**Interface Mating Dimensions of KPC240 (2.4mm Connectors**)>

Note: All dimensions are in Millimeters.

Specifications Subject to Change Without Notice.

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http://www.kmco.biz/ e-mail: sales@kmco.co.jp
2.92mm/2.92mm
DC - 40GHz, Coaxial Adapters, In-Series

DESCRIPTION
These “KPC292MF, FF and MM” coaxial adapters that small size, low SWR and low loss, are designed for broadband measurement, instrument and system use.

SPECIFICATIONS:

**Electrical:**
- Frequency Range: DC - 40 GHz
- SWR: <1.15 (MF & MM)
- Insertion Loss: <0.2 dB
- Electrical Length: 17.5 mm (Nominal)
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Body and Outer Conductors: Passivated Stainless steel
- Inner Conductors: Gold Plated Beryllium Copper and Brass
- Coupling Torque: 90 N-cm (Nominal)
- Connect/Disconnect Life: >1,000 Cycles

Typical Performance

Note: This SWR is combined with a Through-Line adapter for the calibration.

**Specifications Subject to Change Without Notice.**

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http://www.kmco.biz/ e-mail: sales@kmco.co.jp
**2.92mm/2.92mm**

**DC - 40GHz, Coaxial Panel Adapters**

**DESCRIPTION**
These "KPC292MFPA, FFPA and MMPA" coaxial panel adapters that 9.5mm "D" holed panel mountable, low SWR and low loss, are designed for broadband measurement, instrument and system use.

<table>
<thead>
<tr>
<th>TYPE: KPC292MFPA</th>
<th>TYPE: KPC292FFPA</th>
<th>TYPE: KPC292MMPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.92mm Male/2.92mm Female</td>
<td>2.92mm Female/2.92mm Female</td>
<td>2.92mm Male/2.92mm Male</td>
</tr>
</tbody>
</table>

**SPECIFICATIONS:**

**Electrical:**
- Frequency Range: DC - 40 GHz
- SWR: <1.15
- Insertion Loss: <0.25 dB
- Electrical Length: Below (Nominal)
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Body: Passivated Stainless steel (*)
- Outer Conductors: Gold Plated Stainless steel
- Inner Conductors: Gold Plated Beryllium Copper
- Coupling Torque: 90 N-cm (Nominal)
- Connect/Disconnect Life: >1,000 Cycles

**Production Status**
Two weeks Lead-Time will be available for shipping.

Note: All dimensions are in Millimeters.

- (*) The toothed lockwasher is chromate converted zinc plated steel.

Specifications Subject to Change Without Notice.
**2.92mm**

DC - 40GHz, Sparkplug Launcher Connectors & Glass Bead

**DESCRIPTION**

"KPC292M301 and KPC292F301" sparkplug launcher connectors and "GB292" glass bead are designed for broadband devices and units with coaxial I/O interfaces.

**SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Connectors</th>
<th>Glass Bead</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical:</strong></td>
<td><strong>Electrical:</strong></td>
</tr>
<tr>
<td>Frequency Range</td>
<td>DC - 40 GHz</td>
</tr>
<tr>
<td>Return Loss</td>
<td>&gt;15 dB(*)</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-55 to +125 deg.C</td>
</tr>
<tr>
<td><strong>Mechanical:</strong></td>
<td><strong>Mechanical:</strong></td>
</tr>
<tr>
<td>Body and Outer Conductors:</td>
<td>Outer and Inner Conductors:</td>
</tr>
<tr>
<td>-Passivated Stainless steel</td>
<td>-Gold Plated(**) Fe/Ni/Co Alloy (KOVAR)</td>
</tr>
<tr>
<td>Inner Conductors:</td>
<td>Insulator: #7070 Glass(Corning)</td>
</tr>
<tr>
<td>-Gold Plated Beryllium Copper and Brass</td>
<td></td>
</tr>
<tr>
<td>Coupling Torque</td>
<td>90 N-cm(Nominal)</td>
</tr>
<tr>
<td>Connect/Disconnect Life</td>
<td>&gt;1,000 Cycles</td>
</tr>
<tr>
<td><strong>Others:</strong></td>
<td></td>
</tr>
<tr>
<td>He leak rate</td>
<td>&lt;1x10^-10 Pm^3/sec</td>
</tr>
</tbody>
</table>

**Production Status**

Two weeks Lead-Time will be available for shipping.

**Typical Performance**

Return Loss(dB) vs Frequency (GHz)

Insertion Loss(dB) vs Frequency (GHz)

**Test configuration**

VNA

KPC292M301

KPC292F301

GB292

**Std DUT:**

Cascaded KPC292M301, GB292 and KPC292F301

**Interface Mating Dimensions of KPC292 (2.92mm Connectors)**

<table>
<thead>
<tr>
<th>Reference Plane</th>
<th>Reference Plane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female 1/4-36UNS-2A</td>
<td>Male 1/4-36UNS-2A</td>
</tr>
</tbody>
</table>

**Note:**

- All dimensions are in Millimeters.
- (***) Thermo-Sonic wire bondable gold plating

Specifications Subject to Change Without Notice.

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http://www.kmco.biz/ e-mail: sales@kmco.co.jp
DESCRIPTION
"KPC292M302 and KPC292F302" Two-hole Flange launcher connectors and "GB292" glass bead are designed for broadband devices and units with coaxial I/O interfaces.

SPECIFICATIONS:

Connectors
Electrical:
- Frequency Range: DC - 40 GHz
- Return Loss: >15 dB(*)
- Temperature Range: -55 to +125 deg.C

Mechanical:
- Body and Outer Conductors: -Passivated Stainless steel
- Inner Conductors: -Gold Plated Beryllium Copper and Brass

Glass Bead
Electrical:
- Frequency Range: DC - 40 GHz
- Temperature Range: -55 to +125 deg.C

Mechanical:
- Outer and Inner Conductors: -Gold Plated(**) Fe/Ni/Co Alloy (KOVAR)
- Insulator: #7070 Glass (Corning)

Others:
- Soldering temperature: 330 deg.C (max)
- He leak rate: <1x10^-10 Pa m^3/sec

Typical Performance
Note: (*) As std DUT configuration

Test configuration

KPC292M302
Test housing
GB292

Std DUT:
Cascaded KPC292M302, GB292 and KPC292F302

TYPE: GB292
Glass Bead

Interface Mating Dimensions of KPC292 (2.92mm Connectors)

Note:
- All dimensions are in Millimeters.
- One (*) Thermo-Sonic wire bondable gold plating

Specifications Subject to Change Without Notice.

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ISO9001:2000 Certified

292/302GB Rev.01 Dec.2005
DC - 26.5GHz, Coaxial Adapters, In-Series

DESCRIPTION
These "KPC350MF, FF and MM" coaxial adapters that small size, low SWR and low loss, are designed for broadband measurement, instrument and system use.

SPECIFICATIONS:
Electrical:
- Frequency Range: DC - 26.5 GHz (Moding: 34GHz)
- SWR: < 1.15
- Insertion Loss: < 0.2 dB
- Electrical Length: 17.5 mm (Nominal)
- Temperature Range: -55 to +125 deg.C

Mechanical:
- Body and Outer Conductors: Passivated Stainless steel
- Inner Conductors: Gold Plated Beryllium Copper and Brass
- Coupling Torque: 90 N-cm (Nominal)
- Connect/Disconnect Life: > 1,000 Cycles

Production Status
Two weeks Lead-Time will be available for shipping.

Note: All dimensions are in Millimeters.

TYPE: KPC350MF
3.5mm Male/3.5mm Female

TYPE: KPC350FF
3.5mm Female/3.5mm Female

TYPE: KPC350MM
3.5mm Male/3.5mm Male

Interface Mating Dimensions of KPC350 (3.5mm Connectors<*>)

Specifications Subject to Change Without Notice.
3.5mm/3.5mm
DC - 26.5GHz, Push-On Coaxial Adapter For Quick Test

DESCRIPTION
The "KPC350MFPO" push-on coaxial adapter that
- Easy and quick connection/disconnection
- To reduce test time
are designed for broadband component test and system test use.

Push-on port mates onto 3.5mm, 2.92mm and SMA female connectors.

(*) The electrical length is same as KMCO KPC350MF and KPC292MF adapters.

SPECIFICATIONS:
Electrical:
Frequency Range: DC - 26.5 GHz(Moding:34GHz)
Return Loss: Better than 22 dB
Insertion Loss: <0.6dB
Electrical Length: 17.5 mm(Nominal)(*)
Temperature Range: -55 to +125 deg.C

Mechanical:
Body and Outer Conductors:
- Passivated Stainless Steel
Blind Outer Conductor:
- Hard Nickel Plated Beryllium Copper
Inner Conductors:
- Gold Plated Beryllium Copper and Brass
Push/Pull Force: 20 N (Typical)
Connect/Disconnect Life: >1,000 Cycles

Production Status
Two weeks Lead-Time will be available for shipping.

DESIGN TYPE: KPC350MFPO

3.5mm Female
3.5mm Male (Slotted-blind mate)

5.5 ACROSS FLATS
22.51

17.04 (Reference Plane)

3.5mm/3.5mm Connectors<->

Note: All dimensions are in Millimeters.

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ISO9001:2000 Certified
1.85mm/1mm
DC - 67GHz, Coaxial Adapters, Between-Series

DESCRIPTION
The coaxial adapters between 1.85mm and 1.00mm that small size, low SWR and low loss, are designed for broadband measurement, instrument and system use.

SPECIFICATIONS:

Electrical:
- Frequency Range: DC - 67 GHz
- Return Loss: Better than 16dB (1)
- Insertion Loss: <0.6 dB (1)
- Electrical Length: 14.6 mm (Nominal)
- Temperature Range: -55 to +125 • •

Mechanical:
- Body and Outer Conductors: Gold Plated Stainless steel
- Inner Conductors: Gold Plated Beryllium Copper and Brass
- Coupling Torque: 90 N-cm for KPC185 (Nominal)
- 45 N-cm for KPC100 (Nominal)
- Connect/Disconnect Life: >500 Cycles [Predicted]

Note:
All dimensions are in Millimeters.
(1) As for the return loss and insertion loss of the adapters, 1.8mm ports are mated and 1mm ports are measured as an interface.

Performance test configuration
VNA with millimeter wave modules
Port 1
Port 2
1mm 1.85/1.85mm (Adapter pair : Insertable-device)

Typical Performance
(Number of Adapter-pair samples : 4 pcs)

Return Loss S11, dB
Frequency GHz

Insertion Loss S21, dB
Frequency GHz

Note:
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http://www.kmco.biz/ e-mail: sales@kmco.co.jp

ISO9001:2000 Certified
**2.4mm/1.85mm**

**DC - 50GHz, Coaxial Adapters, Between-Serise**

**DESCRIPTION**
The coaxial adapters between 2.4mm and 1.85mm that small size, low SWR and low loss, are designed for broadband measurement, instrument and system use.

**SPECIFICATIONS:**

**Electrical:**
- Frequency Range: DC - 50 GHz
- SWR: <1.25 (*)
- Insertion Loss: <0.4 dB (**) 
- Electrical Length: 17.5 mm (Nominal)
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Body and Outer Conductors: Passivated Stainless steel
- Inner Conductors: Gold Plated Beryllium Copper and Brass
- Coupling Torque: 90 N-cm (Nominal)
- Connect/Disconnect Life: >1,000 Cycles

**Production Status**
Two weeks Lead-Time will be available for shipping.

**Typical Performance**

**TYPE: KPC240F185F**
2.4mm Female/1.85mm Female

**TYPE: KPC240M185F**
2.4mm Male/1.85mm Female

**TYPE: KPC240M185M**
2.4mm Male/1.85mm Male

**Interface Mating Dimensions**
KPC240 and 185 Connectors

Note: All dimensions are in Millimeters.
**2.92mm/1.85mm**

**DC - 40GHz, Coaxial Adapters, Between-Serise**

**DESCRIPTION**
The coaxial adapters between 2.92mm and 1.85mm that small size, low SWR and low loss, are designed for broadband measurement, instrument and system use.

**SPECIFICATIONS:**

**Electrical:**
- Frequency Range: DC - 40 GHz
- SWR: <1.3
- Insertion Loss: <0.35 dB
- Electrical Length: 17.5 mm (Nominal)
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Body and Outer Conductors: -Passivated Stainless steel
- Inner Conductors: -Gold Plated Beryllium Copper and Brass
- Coupling Torque: 90 N-cm (Nominal)
- Connect/Disconnect Life: >1,000 Cycles

**Typical Performance**

**Production Status**
Two weeks Lead-Time will be available for shipping.

**Interface Mating Dimensions**

Note: All dimensions are in Millimeters.

Specifications Subject to Change Without Notice.

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**2.92mm/2.4mm**

**DC - 40GHz, Coaxial Adapters, Between-Serise**

**DESCRIPTION**
The coaxial adapters between 2.92mm and 2.4mm that small size, low SWR and low loss, are designed for broadband measurement, instrument and system use.

**SPECIFICATIONS:**

**Electrical:**
- Frequency Range: DC - 40 GHz
- SWR: <1.22
- Insertion Loss: <0.25dB
- Electrical Length: 17.5 mm(Nominal)
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Body and Outer Conductors: -Passivated Stainless steel
- Inner Conductors: -Gold Plated Beryllium Copper and Brass
- Coupling Torque: 90 N-cm(Nominal)
- Connect/Disconnect Life: >1,000 Cycles

**Production Status**
Two weeks Lead-Time will be available for shipping.

**Interface Mating Dimensions**

**Typical Performance**

**Note:** All dimensions are in Millimeters.

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http://www.kmco.biz/ e-mail: sales@kmco.co.jp
3.5mm/2.4mm
DC - 26.5GHz, Coaxial Adapters, Between-Series

DESCRIPTION
The coaxial adapters between 3.5mm and 2.4mm that small size, low SWR and low loss, are designed for broadband measurement, instrument and system use.

SPECIFICATIONS:

Electrical:
- Frequency Range: DC - 26.5 GHz (Mording: 34GHz)
- SWR: <1.2
- Insertion Loss: <0.3 dB
- Electrical Length: 17.5 mm (Nominal)
- Temperature Range: -55 to +125 deg. C

Mechanical:
- Body and Outer Conductors: Passivated Stainless steel
- Inner Conductors: Gold Plated Beryllium Copper and Brass
- Coupling Torque: 90 N-cm (Nominal)
- Connect/Disconnect Life: >1,000 Cycles

Production Status
Two weeks Lead-Time will be available for shipping.

Typical Performance

TYPE: KPC350F240F
3.5mm Female/2.4mm Female

TYPE: KPC350M240F
3.5mm Male/2.4mm Female

Interface Mating Dimensions

Note: All dimensions are in Millimeters.

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**Connector Interface 1 mm for DC - 110GHz**

**DESCRIPTION**  The Re-Formable Semirigid Cable Assemblies, up to 110 GHz, easy to install with bending by hand on your Labs./Sites, are designed for broadband measurement, instrument and system use. All materials are "lead free".

**SPECIFICATIONS:**
- **Insertion Loss**: See Fig.1
- **Return Loss**: Better than 17dB
- **Temperature Range**: -55 to 100 deg.C
- **Length (L)**: 30 to 300mm +/-1mm [*]

 [*] Please specify length(L: see following table), when you order this item. For example: CA100MM0035 (Length:35mm)

**Cable Properties:**
- Outer Conductor: 1.19 mm Dia.Copper with Cu/Sn/Zn plated
- Center Conductor: Silver plated copper
- Insulator: PTFE
- Moding Freq.: 112GHz(Approx.)
- Delay Time: 0.476ns/100mm
- Inside Bending Radius: 3 mm(min)
- Non-Magnetic

**Production Status**
Two weeks Lead-Time will be available for shipping.
Re-Formable Semirigid Cable Assemblies:
Connector Interface 1.85mm for DC - 65GHz and DC - 60GHz, 2.4mm for DC - 50GHz, 2.92mm for DC - 40GHz

DESCRIPTION  The Re-Formable Semirigid Cable Assemblies, up to 40, 50, 60 and 65 GHz, easy to install with bending on your Labs./Sites, are designed for broadband measurement, instrument and system use. All materials are "lead free".

SPECIFICATIONS:

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Frequency Range</th>
<th>Connector Interface</th>
<th>Insertion Loss</th>
<th>Cable Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA185FF *LD</td>
<td>DC-65GHz</td>
<td>Better than 17 dB</td>
<td>See Curve“A&quot; in Fig.1</td>
<td></td>
</tr>
<tr>
<td>CA185MF *LD</td>
<td>DC-60GHz</td>
<td>Better than 18 dB</td>
<td>See Curve “B&quot; in Fig.1</td>
<td></td>
</tr>
<tr>
<td>CA185MM *LD</td>
<td>DC-60GHz</td>
<td>Better than 18 dB</td>
<td>See Curve “B&quot; in Fig.1</td>
<td></td>
</tr>
<tr>
<td>CA185FF</td>
<td>DC-50GHz</td>
<td>Better than 20 dB</td>
<td>See Curve “B&quot; in Fig.1</td>
<td></td>
</tr>
<tr>
<td>CA185MF</td>
<td>DC-40GHz</td>
<td>Better than 20 dB</td>
<td>See Curve “B&quot; in Fig.1</td>
<td></td>
</tr>
<tr>
<td>CA185MM</td>
<td>DC-40GHz</td>
<td>Better than 20 dB</td>
<td>See Curve “B&quot; in Fig.1</td>
<td></td>
</tr>
<tr>
<td>CA240FF</td>
<td>DC-50GHz</td>
<td>Better than 18 dB</td>
<td>See Curve “B&quot; in Fig.1</td>
<td></td>
</tr>
<tr>
<td>CA240MF</td>
<td>DC-50GHz</td>
<td>Better than 18 dB</td>
<td>See Curve “B&quot; in Fig.1</td>
<td></td>
</tr>
<tr>
<td>CA240MM</td>
<td>DC-50GHz</td>
<td>Better than 18 dB</td>
<td>See Curve “B&quot; in Fig.1</td>
<td></td>
</tr>
<tr>
<td>CA292FF</td>
<td>DC-40GHz</td>
<td>Better than 20 dB</td>
<td>See Curve “B&quot; in Fig.1</td>
<td></td>
</tr>
<tr>
<td>CA292MF</td>
<td>DC-40GHz</td>
<td>Better than 20 dB</td>
<td>See Curve “B&quot; in Fig.1</td>
<td></td>
</tr>
<tr>
<td>CA292MM</td>
<td>DC-40GHz</td>
<td>Better than 20 dB</td>
<td>See Curve “B&quot; in Fig.1</td>
<td></td>
</tr>
</tbody>
</table>

Reference for minimum cable installation space with rounded Re-Forming:

<table>
<thead>
<tr>
<th>Reference Plane</th>
<th>Female/Male</th>
<th>Reference Plane</th>
<th>Female/Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.85mm(KPC185)</td>
<td>M7x0.75-6H</td>
<td>2.4mm(KPC240)</td>
<td>M7x0.75-6H</td>
</tr>
<tr>
<td>2.92mm(KPC292)</td>
<td>M7x0.75-6H</td>
<td>2.92mm(KPC292)</td>
<td>M7x0.75-6H</td>
</tr>
</tbody>
</table>

Notice:
About the cable bending with hand bender 2200
To prevent the cable damage in the joint part of the cable and the connector. Please bend the cable in a place about 4mm away from the joint part.

When you install the cable assemblies, please support a cable near the connector and tighten the nut, because the cable that composed of a thin copper tube may be damaged easily by a held stress.

Connector Interface Mating Dimensions (IEEE-std-287 Conformed)

Production Status
Two weeks Lead-Time will be available for shipping.

Hand Bender 2200
For Re-Forming(R3.2/7mm)

Pre-Bend (10-20deg.)
Full-Bend (360deg.)

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http://www.kmco.biz/  e-mail: sales@kmco.co.jp
Re-Formable Semirigid Cable Assemblies, Between:
Connector Interface 2.4mm/1.85mm for DC - 50GHz and 2.92mm/1.85mm, 2.92mm/2.4mm for DC - 40GHz

DESCRIPTION  The Re-Formable Semirigid Cable Assemblies, Between, up to 40 and 50 GHz, easy to install with bending on your Labs./Sites, are designed for broadband measurement, instrument and system use. All materials are lead free”.

SPECIFICATIONS:

- Insertion Loss:  See Fig.1
- Return Loss:  Better than 18dB
- Temperature Range:  -55 to 100 deg.C
- Length (L):  35 to 300mm +/-2mm [*](5mm/step)-------Standard (Over 300mm to 1500mm, Considerable)

[*]  Please specify length(L: see following table), when you order this item.
For example:  CA240F185M0035  (Length:35mm)

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Connector Interfaces</th>
<th>Frequency Range</th>
<th>Cable Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA240F185F</td>
<td>2.92mm Female/1.85mm Female</td>
<td>DC-50GHz</td>
<td>Outer Conductor: 2.2mm Dia.Copper with Cu/Sn/Zn plated</td>
</tr>
<tr>
<td>CA240F185M</td>
<td>2.92mm Male/1.85mm Female</td>
<td>DC-50GHz</td>
<td>Center Conductor: Silver plated copper</td>
</tr>
<tr>
<td>CA240M185F</td>
<td>2.4mm Male/1.85mm Female</td>
<td>DC-40GHz</td>
<td>Insulator: Solid PTFE</td>
</tr>
<tr>
<td>CA292M185M</td>
<td>2.2mm Male/1.85mm Male</td>
<td>DC-40GHz</td>
<td>Moding Freq.: 61GHz(Approx.)</td>
</tr>
<tr>
<td>CA292M240F</td>
<td>2.2mm Male/2.4mm Female</td>
<td>DC-40GHz</td>
<td>Delay Time: 1.43ns/300mm</td>
</tr>
<tr>
<td>CA292F240M</td>
<td>2.2mm Female/2.4mm Male</td>
<td>DC-40GHz</td>
<td>Inside Bending Radius: 3.2mm(min)</td>
</tr>
<tr>
<td>CA292M240M</td>
<td>2.92mm Male/2.4mm Male</td>
<td>DC-40GHz</td>
<td>Non-Magnetic</td>
</tr>
</tbody>
</table>

Specifications Subject to Change Without Notice.

**Fig.1** Frequency vs Insertion Loss

**Fig.2** Tightening of Nut

Notice: About the cable bending with hand bender 2200

To prevent the cable damage in the joint part of the cable and the connector. Please bend the cable in a place about 4mm away from the joint part.

When you install the cable assemblies, please support a cable near the connector and tighten the nut, because the cable that composed of a thin copper tube may be damaged easily by a twist stress.

Hand Bender 2200

For Re-Forming(R3 2/7mm)

Production Status

Two weeks Lead-Time will be available for shipping.
1.85mm/1.85mm

DC - 65GHz, Hermetically Sealed, Coaxial Adapter

DESCRIPTION
This "KPC185FFHA" Hermetically Sealed 1.85mm to 1.85mm Coaxial Adapter that
- DC to 65GHz,
- Low SWR and loss,
- Hermetic RP interface between vacuum and atmosphere environment,
- Small mounting space,
is designed for broadband devices, instrument and component testing use.

SPECIFICATIONS:
Electrical:
- Frequency Range: DC - 65 GHz
- Return Loss: >15 dB
- Insertion Loss: <0.7 dB
- Electrical Length: Below (Nominal)
- Temperature Range: -55 to +125 deg.C

Mechanical:
- Body and Outer Conductors:
  - Gold Plated Stainless steel
- Inner Conductors:
  - Gold Plated Beryllium Copper
- Inner and Outer Conductors for seal:
  - Gold Plated Fe/Ni/Co Alloy (KOVAR)
- Insulator for seal: #7070 Glass (Corning)
- Gasket for flange seal: Fluoroelastomer "O" Ring
- Coupling Torque: 90 N-cm (Nominal)
- Connect/Disconnect Life: >1,000 Cycles
- He leak rate: <1 x 10^-10 Pm^3/Sec (<1 x 10^-9 atm cc/Sec)

Typical Performance

Recommended Mounting Hole and Installation

Note:
- All dimensions are in Millimeters.
- [1] Corners: Less than 0.05 x 0.05 mm
- [2] Required "Smooth Surface"
- (*) As Per MIL-STD-883E, METHOD1014.10, Test Condition A4

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**DESCRIPTION**

This "KPC292FFHA" Hermetically Sealed 2.92mm to 2.92mm Coaxial Adapter that:
- DC to 40GHz,
- Low SWR and loss,
- Hermetic RF interface between vacuum and atmosphere environment,
- Small mounting space,
is designed for broadband devices, instrument and component testing use.

**SPECIFICATIONS:**

**Electrical:**
- Frequency Range: DC - 40 GHz
- Return Loss: >15 dB
- Insertion Loss: <0.45 dB
- Electrical Length: Below (Nominal)
- Temperature Range: -55 to +125 deg.C

**Mechanical:**
- Body and Outer Conductors: Gold Plated Stainless steel and Brass
- Inner Conductors: Gold Plated Beryllium Copper
- Inner and Outer Conductors for seal: Gold Plated Fe/Ni/Co Alloy (KOVAR)
- Insulator for seal: #7070 Glass (Corning)
- Gasket for flange seal: Fluoroelastomer "O" Ring
- Coupling Torque: 90 N-cm (Nominal)
- He leak rate (*): <1x10^-10 Pa·m³/Sec (<1x10^-9 atm cc /Sec)

**Production Status**

4 weeks Lead-Time will be available for shipping.

**TYPE: KPC292FFHA**

2.92mm Female/2.92mm Female

**Recommended Mounting Hole and Installation**

Single or Separated Multi Port Installation

Spaced "13mm" Multi Port Installation

**Interface Mating Dimensions of KPC292**

(2.92mm Connectors<*)

<*> Matable with 3.5mm and SMA

Note:
- All dimensions are in Millimeters.
- [1] Chamfer: Less than 0.05 mm
- [2] Required "Smooth Surface"
- (*) As Per MIL-STD-883E, METHOD1014.10, Test Condition A4

Specifications Subject to Change Without Notice.

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e-mail: sales@kmco.co.jp
300-4.2K Cable Assembly
Length:1000-1400mm (approx.)
Refer to the loss data on the right and choose the cable type including magnetic property.
KMCO recommends:
TCR219CG/SUS or TCR119CG/PB

4.2-1K Cable Assembly
Length:150-200mm (approx.)

1K-300mK Dumper or pigtails cable assembly
Length:100-150mm (approx.)

Table 1 Reference of Thermal Conductivity at 300K

<table>
<thead>
<tr>
<th>Material</th>
<th>Thermal Conductivity (W/mK)</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niobium</td>
<td>0.66 mm (OD)</td>
<td>Ag Plated</td>
</tr>
<tr>
<td>Stainless Steel (SUS304)</td>
<td>0.89 mm (OD)</td>
<td>Ag Plated</td>
</tr>
<tr>
<td>Niobium</td>
<td>0.66 mm (OD)</td>
<td>Ag Plated</td>
</tr>
<tr>
<td>Cupronickel</td>
<td>0.89 mm (OD)</td>
<td>Ag Plated</td>
</tr>
</tbody>
</table>

Kawashima Manufacturing Co., Ltd.

Title: Installation example of Hermetic adaptor and cable assemblies for <300mK dilution refrigerated cryogenic systems
Sub title: [Typical Configuration]
Part: A4 Scale: Sheet: 1 of 1

At room temperature

Superconductivity: SC & Normal-conductivity: NC