## SMA Style Coaxial Connector

## DM Series

## Characteristic impedance

$50 \Omega$

## Lock Type

Screw


## OUTLINE

DM series is a SMA connector which conforms to MLLC-39012.
It is compact and tough $50 \Omega$ coaxial connector which designed for compact-sized and higher frequency communication device. Screw lock coupling enables reliable connection.
Compatible to other SMA style connectors. Crimp, soldering and clamp types are available.

## APPLICATIONS

Base Station, Telecom, Wireless LAN, GPS

CONFORMING STANDARD
MIL-C-39012

## SPECIFICATIONS

| Characteristic Impedance | $50 \Omega$ |
| :--- | :--- |
| Dielectric Withstanding Voltage | 1000 V AC(r.m.s.) for 1 minute |
| Insulation Resistance | $1000 \mathrm{M} \Omega$ Mim. at 500 V DC |
| Contact Resistance | $3 \mathrm{~m} \Omega \mathrm{Max}$. |
| V.S.W.R. | $1.05+0.01 \times \mathrm{f}(\mathrm{GHz})$ |

* The specifications are typical but may not apply to all connectors. Please check the specifications on each item with its drawing from us when you use.

MATERIAL/FINISH $\qquad$

| Item | Material / Finish |
| :--- | :--- |
| Shell (Body) | Copper Alloy or Stainless Steel / Au, Ag or Ni Plating |
| Coupling Ring | Copper Alloy or Stainless Steel / Au, Ag or Ni Plating |
| Contact | Copper Alloy / Au or Ag Plating |
| Insulator | PTFE |

※ We are providing the standard item on this catalogue. Other materal(Brass,
Stainless steel) are also available. Please contact our sale office.
※ Notice for mating connectors
When screwng up the coupling ring, please screw up by hand and tighten by toque wrench.

Crimp Type

| Crimp Type |  | Part Number | Applicable Cable Size | $\phi$ A | (L) | Finish |  |  | Assembly Instruction | Crimp Tool |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\stackrel{\pi}{\theta}$ |  |  |  |  |  | Outer Conductor | Center Conductor | Coupling |  |  |
|  |  | DM-P-1.5D2V-CR-BS-CF | 1.5D-2V | 5.5 | 17.5 | Ni | Au | Ni | 1 | CR-H-1100 |
|  | - | DM-SP-1.5DHQS-CR1-CF | 1.5D-HQ - SUPER | 4.8 | 19.3 | Ni | Au | Ni | 2 | CR-H-1156 |
|  | (L) | DM-P-1.5DQEW-D-CF | 1.5D-QEW | 4.8 | 19.0 | Ni | Au | Ni | 3 | CR-H-1156 |
|  |  | DM-P-58U-CR-BS-CF | RG-58A/U | 6.25 | 24.4 | Au | Au | Au | 4 | CR-H-1105 |



## for Semi-Rigid, Semi-Flexble Cable



| Part Number | Applicable Cable Size | $\phi$ A | (L) | Finish |  |  | Assembly Instruction |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Outer Conductor | Center Conductor | Coupling |  |
| DM-P-85-SO-BS-2-CF | UT-85 | 3.5 | 13.7 | Ni | Au | Ni |  |
|  | FCCAVG1 |  |  |  |  |  |  |



| Part Number | Applicable Cable Size | Finish |  |  | Assembly Instruction |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Outer Conductor | Center Conductor | Coupling |  |
| DM-SP-141-SO-2-D1-CF | UF141A | Ag | Utilize center conductor of the applicable cable |  |  |
|  | FCCAVGO |  |  | Ag |  |
| DM-SP-141-SO-2-D3-CF | UF-141A | Ag |  | Ni |  |
|  | FCCAVG0 |  |  |  |  |
|  | FCCAVGO-4.6 |  |  |  |  |



| Part Number | Applicable <br> Cable Size | (L) | Finish <br> Outer <br> Conductor |  |  | Center <br> Conductor |
| :---: | :--- | :---: | :---: | :---: | :---: | :---: |
|  | Coupling |  |  |  |  |  |
|  | UT-141A |  |  | Utilize center <br> conductor of <br> the applicable <br> cable | Ni |  |
|  | FCCAVG0 | 8.7 | Au |  |  |  |

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## Crimp Type



| Part Number | Applicable Cable Size | (L1) | (L2) | Finish |  |  | Assembly Instruction | Crimp Tool |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Outer Conductor | Center <br> Conductor | Coupling |  |  |
| DM-LP-1.5DW-CR1-CF | 1.5D-QEW | 17.5 | 16.1 | Ni | Au | Ni | 9 | CR-H-1156 |
| DM-LP-2.5DHQS-CRI-CF | 2.5D-HQ • SUPER | 17.8 | 17.0 | Ni | Au | Ni | 10 | CR-H-1163 |
| DM-LP-3D2W-CR1-CF | 3D-2W | 18.8 | 21.2 | Ni | Au | Ni | 11 | CR-H-18923 |

for Semi-Rigid, Semi-Flexible Cable


| Part Number | Applicable Cable Size | (L1) | (L2) | Finish |  |  | Assembly Instruction |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Outer Conductor | Center Conductor | Coupling |  |
| DM-LP-85-S0-4-CF | UT-85 | 18.0 | 11.0 | Ni | Au | Ni |  |
|  | FCCAVG1 |  |  |  |  |  |  |
| DM-LP-141-SO-4-D1-CF | UT-141A | 19.0 | 11.4 | Ni | Au | Ni |  |
|  | FCCAVGO |  |  |  |  |  |  |

## © Jack Connector

## for Semi-Rigid, Semi-Flexible Cable



## (1) Panel Jack Connector

for Semi-Rigid, Semi-Flexible Cable


| Part Number |  | Applicable Cable Size | $\phi$ A | L | Finish |  | Assembly Instruction |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Outer Conductor |  |  | Center Conductor |  |
| DM-PJ-141-SO-DI |  |  | UT-141A | 4.7 | 12.7 | Ni | Au |  |
|  |  | FCCAVGO |  |  |  |  |  |
|  | DM-PJ-141-S0-D3-CF | UT-141A | 4.7 | 12.7 | Ni | Au |  |
|  |  | FCCAVGO |  |  |  |  |  |
| DM-PJ-85-SO-D3 |  | UT-85 | 3.4 | 12.7 | Ni | Au |  |
|  |  | FCCAVG1 |  |  |  |  |  |

## PCB Mounting Dimensions

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| Part Number | A | L | Finish |  |
| :--- | :---: | :---: | :---: | :---: |
|  |  | Outer <br> Conductor | Center <br> Conductor |  |
| DM-SR-23-CF | 5,1 | 14.6 | Ag | Ag |
| DM-SR-28-CF | 6.0 | 15.5 | Ag | Ag |
| DM-SR-31-CF | 3.0 | 12.5 | Ag | Ag |



| Part Number | A | B | L | Finish |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Outer <br> Conductor | Center <br> Conductor |  |
| DM-SR-18-CF | 4.0 | 1.5 | 15.0 | Ag | Ag |
| DM-SR-20-CF | 7.0 | 1.0 | 16.5 | Ag | Ag |
| DM-SR-27-CF | 5.0 | 1.0 | 15.5 | Ag | Ag |



| Part Number | A | B | L | Finish |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Outer <br> Conductor |  |  |  |  |  |
| DM-SR-1 | 2.0 | 4.0 | 15.5 | Passivation | Au |
| DM-SR-15-CF | 4.0 | 8.7 | 22.2 | Ag | Ag |
| DM-SR-24-CF | 5.0 | 6.5 | 21.0 | Ag | Ag |
| DM-SR-30-CF | 4.0 | 6.5 | 20.0 | Ag | Ag |




| Part Number | Finish |  |
| :--- | :---: | :---: |
|  | Outer <br> Conductor | Center <br> Conductor |
| DM-SR-19-CF | Ag | Ag |



PCB Mounting Dimensions


| Part Number | Finish |  |
| :--- | :---: | :---: |
|  | Outer <br> Conductor | Center <br> Conductor |
| DM-SR2-18-CF | Ag | Ag |

## PCB Mounting Dimensions



| Part Number | A | L | Finish |  |
| :--- | :---: | :---: | :---: | :---: |
|  |  | Outer <br> Conductor | Center <br> Conductor |  |
| DM-SR2-1-CF | 5.1 | 14.6 | Ag | Ag |
| DM-SR2-1-D1-CF | 5.1 | 14.6 | Au | Au |
| DM-SR2-22-CF | 3.1 | 12.6 | Ag | Ag |

PCB Mounting Dimensions


| Part Number | A | B | L | Finish |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Outer <br> Conductor | Center <br> Conductor |
| DM-SR2-4-CF | 2.5 | 5.0 | 17.0 | Ni | Au |
| DM-SR2-8-CF | 4.0 | 5.5 | 19.0 | Ni | Au |
| DM-SR2-8-D1-CF | 4.0 | 5.5 | 19.0 | Au | Au |
| DM-SR2-9-CF | 1.5 | 4.0 | 15.0 | Ag | Ag |
| DM-SR2-15-CF | 1.5 | 3.2 | 14.2 | Ni | Au |

## PCB Mounting Dimensions




| Part Number | A | B | L | Finish |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Center <br> Conductor |  |  |
| DM-SR2-10-CF | 6.9 | 2.9 | 16.4 | Ag | Ag |
| DM-SR2-11-CF | 4.4 | 2.9 | 13.9 | Ag | Ag |

PCB Mounting Dimensions


| Part Number | Finish |  |
| :--- | :---: | :---: |
|  | Outer <br> Conductor | Center <br> Conductor |
| DM-SR2-16-CF | Ni | Au |

## PCB Mounting Dimensions

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(1) Right Angle Receptacle Connector


| Part Number | A | B | L | Finish |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Outer <br> Conductor | Center <br> Conductor |  |
| DM-LR-7-CF | 6.0 | 2.0 | 20.5 | Ag | Ag |
| DM-LR-8-CF | 4.0 | 6.5 | 23.0 | Ag | Ag |



PCB Mounting Dimensions


| Part Number | Finish |  |
| :--- | :---: | :---: |
|  | Outer <br> Conductor | Center <br> Conductor |
| DM-LR2-CF | Ag | Ag |



| Part Number | Finish |  |
| :--- | :---: | :---: |
|  | Outer <br> Conductor | Center <br> Conductor |
| DM-LR2-2-CF | Ag | Ag |



| Part Number | Finish |  |
| :--- | :---: | :---: |
|  | Outer <br> Conductor | Center <br> Conductor |
|  | Ag | Ag |



PCB Mounting Dimensions


| Part Number | Finish |  |
| :--- | :---: | :---: |
|  | Outer <br> Conductor | Center <br> Conductor |
| DM-LR-PC-CF | Ni | Au |

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(1) Dust Cap


| Part Number | Contact Plating |
| :---: | :---: |
| DM-RC-1-CF | Ni |



| Part Number | Contact Plating |
| :---: | :---: |
| DM-RC-2-CF | Ni |

## ©Assembly Insutruction (1)

## Parts Configuration



1

1.The cable length require for cable assembly
$1=L^{1}+26 \mathrm{~mm}$
$2=L^{2}-9 m m$
2. Strip the outer jacket at $8.0 \pm 0.3 \mathrm{~mm}$ from edge of cable.
When strip the outer jacket, please be carefule to not damage the outer conductor.
3. Insert the ferule into the cable as figure 3.

4

5. Pre-solder the inside of the contact. and solder the center conductor. When the solder swelled bigger than diameter of the contact, shave the exceeding solder by razor. Wipe the flux by alcohol.

6. Insert the contact into the body and push in until the key inside the insulator meet the key way on the contact,
And crimp the ferule as figure 6 by crimp tool (Dies A).
(Note 1) Please crimp the body at $1-2 \mathrm{~mm}$ from the end of the body.
(Note 2) Length of sticking out from the ferule must be within 0.5 mm .
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## © Assembly Insutruction (2)

## Parts Configulation



Ferule


Contact


Body

1. The cable length require for cable assembly. $L=L 1-7.7=L 2+11.6$

1-1. Insert the cable into the ferule.
(Note) Please confirm the direction of ferule

2-1. Cut the end of cable as fig.2.
(Note) Aluminum foil tape can be cut in 5.4 mm .
(Note) Please be careful to not damage the center conductor and outer conductor of cable.
2-2. Pre-solder up the center conductor of the cable.
$3-1$. Pick the outer conductor of the cable and turn down to the sheath.
3-2. Cut the aluminum foil tape at the foot of outer conductor turn down.
$3-3$. Put back and spread the outer conductor as fig. 3 .

4-1. Solder the center conductor and contact.
(Note) Please be careful to not deform the insulator by heat.
(Note) When the solder is stick out, please shave the extra solder.

5-1. Insert above cable into the connector body. Cover the naked outer conductor with the ferule and crimp the ferule.
Crimp Dies: A-R1
(Note) Please be careful to not deform the insulator.

## © Assembly Insuruction (3)



1


1. The cable length require for the cable assembly L=L1-5.7

2


3

2. Cut the cable as fig.1.
(Note) Please be careful to not damage outer conductor, insulator and center conductor.

## 2-1.Pre-solder the center conductor.

(Note) Please be careful to not deform the insulator by heat.
3. Cut the center conductor as fig.3.

4


5

4. Solder up the contact to the center conductor of the cable
(Note) Please be careful to not deform the insulator by heat.
(Note) No gap between contact and insulator.
(Note) When the solder is stick out, please shave the extra solder.

5 Insert the boot and ferule into the cable.
(Note) The boot is required DM-P-1.5DQEW only.
$5-1$. Spread the outer conductor and pick equally.

6

6. Insert the above cable into the connector body until strike the top of the cable.
6-1. Covert the ferule on the outer conductor.
6-2. Crimp the ferule. (Crimp Dies: A-R1)
(Note) The gap between connector body and ferule is within 0.5 mm .
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## © Assembly Insutruction (4)

Parts Configuration


1


2


3. Cut the cable as fig.3.
(Note) Please be carefule to not damage the outer conductor, insulator and center conductor. 3-1. Pre-solder the center conductor. (Note) Please be careful to not deform the insulator by heat
4. Solder up the contact and center conductor.
(Note) Please be careful to not deform the insulator by heat.
(Note) No gap between contact and insulator.
(Note) When the solder is stick out, please shave the extra solder.
5. Spread the top of the outer conductor.

5-1. Insert the root of connector body between outer conductor and insulator.
(Note) Please do not pick the outer conductor.
6. Insert the connector body until the gap between body and contact is within $0.1 \pm 0.1$.
$6-1$. Cover the ferule on the outer conductor and insert the cable until strike the top of the cable.
$6-2$. While the cable is touch the connector body, crimp the ferule two points. Crimping Dies : F (Note) Crimp point is nearest to the body first.
(Note) The gap between body and ferule is within 0.5 .
(Note) Crimp height is $5.38 \sim 5.56$.
(Note) The gap between body and contact is within $0.1 \pm 0.1$.
7.Cover the boot on the ferule.

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## © Assembly Instruction (5)

## Parts Configuration



Heat-shrinkable tube


Ferule
$\square \square$

Contact


Body


1


3


4

3. Solder up the contact with center conductor.
(Note) When the solder is stick out, please shave the extra solder.
(Note) No gap between contact and insulator.
4. Spread the top of the outer conductor. Insert the root of connector body between outer conductor and insulator.
5. Cover the ferule on the naked outer conductor and crimp. Crimping Dies: RFD-1
6. Cover the heat-shrinkable tube on the ferule and heat up the tube.

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## © Assembly Instruction (6)

Parts Configuration


Ferule


Contact


1


2


3


4


5


1. The cable length require for the cable assembly. L=L1 - 8
2. Insert the ferule into the cable.
3. Cut the cable as fig.2.
(Note) Please be carefule to not damage the center conductor and outer conductor.
3-1. Pre-solder the center conductor.
(Note) Please be careful to not deform the insulator by heat
4. Solder up the contact with center conductor.
(Note) Please be careful to not deform the insulator by heat.
(Note) No gap between contact and insulator.
(Note) When the solder is stick out, please shave the extra solder.
5. Spread the top of the outer conductor.
$5-1$. Insert the root of connector body between outer conductor and aluminum foil tape.
(Note) Aluminum foil tape is inserted into the connector body.
5-2. Cover the ferule on the naked outer conductor and crimp the connector body.
(Note) The gap between body and ferule is within 0.5.

## (1) Assembly Insutruction (7)

## Parts Configuration



1



3


4

tube


5


1. The cable length require for the cable assembly. $\mathrm{L}=\mathrm{L} 1-7.0$
2. Cut the cable as fig.2.
(Note) Please be careful to not damage the outer conductor, insulator and center conductor.
2-1. Pre-soldering the center conductor.
(Note) Please be careful to not deform the insulator by heat

3-1. Solder up the contact with center conductor. (Note) Please be careful to not deform the insulator by heat.
(Note) No gap between contact and insulator.
(Note) When the solder is stick out, please shave the extra solder.
4. Insert the heat-shrinkable tube and ferule into the cable.
4-1. Spread the top of outer conductor.
4-2. Insert the root of connector body between outer conductor and insulator.
4-3. Cover the ferule on the naked outer conductor.
4-4. Crimp the ferule. (Crimping Dies : RFD-1)
(Note) The gap between connector body and ferule is within 0.5.
5. Cover the heat-shrinkable tube on the root of the connector body and heat up the tube.

## (1) Assembly Instruction (8)

Parts Configuration


1


L1


3


4

3. Cut the outer conductor, insulator and center conductor as fig.3.
And pre-solder the center conductor.
4. Solder up the contact with the center conductor. (Note) No gap between contact and insulator.
(Note) When the solder is stick out, please shave the extra solder.
5. Spread the outer conductor and insert into the connector body.

1. The cable length require for the cable assembly. $\mathrm{L}=\mathrm{Ll}-7.2 \mathrm{~mm}$
2. Insert the boot and ferule into the cable and strip the sheath as fig.2.
3. Cover the ferule on the naked outer conductor and crimp. (Crimping Dies: D-P)
4. Cover the boot on the root of the connector body.

## © Assembly Instruction (9)

Parts Configuration


Boot


Ferule


3

3. Cut the outer conductor, insulator and center conductor as fig. 3 .
And pre-solder the contact.
4. Pick the outer conductor and insert the connector body into the cabe between outer conductor and insulator.
5. Cover the ferule on the naked outer conductor and crimp. (Crimping Dies :A-R1)
6. Solder up the contact and center conductor.
(Note) Please be careful to not deform the insulator.
7. Cover the boot on the ferule.
8. Insert the plate on the top of connector and press-in.

## © Assembly Instruction (10)

## Parts Configuration



1

2. Cut the cable as fig.2.
(Note) Please be careful to not damage the
outer conductor and center conductor.

2-1. Pre-solder the center conductor.

3

3. Insert the ferule into the cable.


6

7

4. Spread the top of the outer conductor. $4-2$. Insert the body into the cable between outer conductor and aluminum foil tape.
(Note) Center conductor is caught in the contact slit enough.
(Note) Aluminum foil tape is inserted in the body.
5. Cover the ferule on the naked outer conductor.
5-1. Crimp the ferule. (Crimping Dies : RFD-1)
(Note) The gap between body and ferule is within 0.5 .
6. Solder the contact with center conductor.
7. Screw up the nut on the body.

Screw torque $9.8 \mathrm{~N} \cdot \mathrm{~cm}(1 \mathrm{Kgf} \cdot \mathrm{cm})$
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## (1) Assembly Instruction (11)



1


1. The cable length require for the cable assembly. $\begin{aligned} \mathrm{L} & =\mathrm{L} 1+0.6 \\ & =\mathrm{L} 2-3.4\end{aligned}$
1-1. Insert the ferule into the cable.
2. Cut the cable as fig.2.
(Note) Please be careful to not damage the center conductor and outer conductor.
2-1. Pre-solder the center conductor.
3. Spread the top of the outer conductor.
$3-1$. Insert the body into the cable between outer conductor and insulator.
(Note) The center conductor is caught in the contact slit enough.
4. Cover the ferule on the naked outer conductor.

4-1. Crimp the ferule. (Crimping Dies: D-P)
(Note) The gap between body and ferule is within 0.5 .
5. Solder up the contact with center conductor.
6. Insert the gasket, washer and nut.

And screw up the blind screw.
Screw toque • • • 9.8~19.6N •cm

$$
(1 \sim 2 \mathrm{Kgf} \cdot \mathrm{~cm})
$$

