

# FSD | High Performance Low Loss Semi-Rigid Coax Cable



## Product features

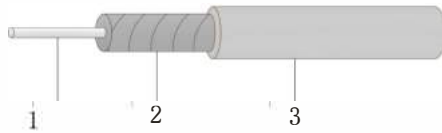
- Wide temperature operating range
- Less temperature-related phase change
- Lower loss
- Higher power handling
- Lighter weight
- Plenty connector options

FSD series is an upgrade of traditional semi-rigid cable. It adopts advanced low-density PTFE wrapped dielectric to replace traditional solid PTFE dielectric. Compared to traditional semi-rigid cable, FSD series can effectively reduce the attenuation by 30%, the temperature phase decrease by 100%, weight reduced by approximately 20%. The standardize cable structure can easily adapt to the standardize semi-rigid and conformable cable connectors. Typical FSD cable applications include test setups, inter connection , and instrumentation.

## Similar Cable Replacement Table

|               | TIMES    | MCC       |
|---------------|----------|-----------|
| FSD-086-TP/TM | CLL50086 | UT-085-LL |
| FSD-120-TP/TM |          | UT-120-LL |
| FSD-141-TP/TM | CLL50141 | UT-141-LL |

# FSD | Specification



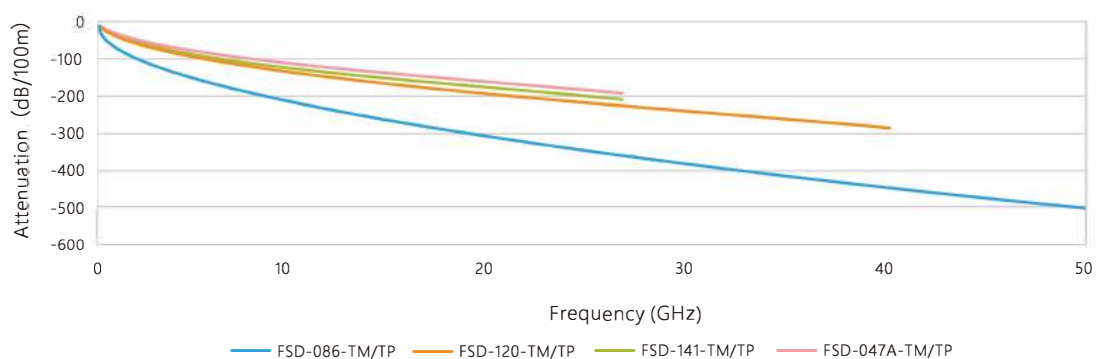
1 Center Conductor SPC  
2 Dielectric PTFE

3 Outer Conductor Tri-alloy Plating  
TP-Tin Plating

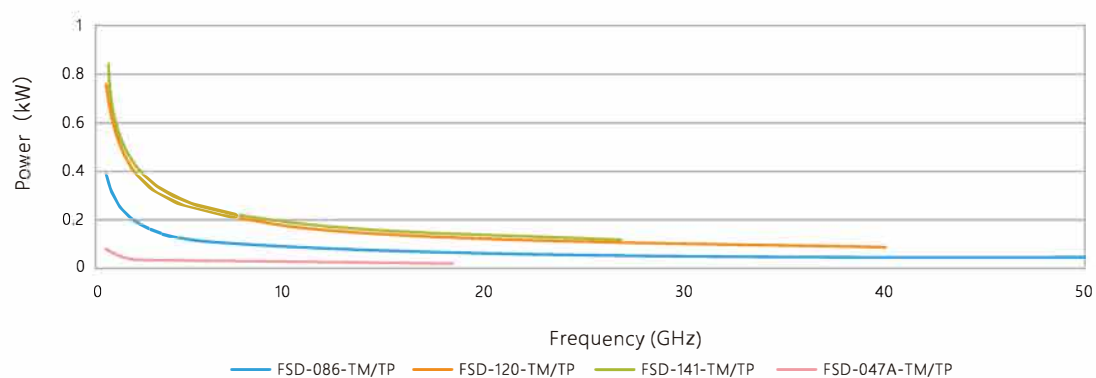
|                                      | FSD-047A-TM/TP                                                                 |              |       | FSD-086-TM/TP          |              |       | FSD-120-TM/TP |              |       | FSD-141-TM/TP |              |       |
|--------------------------------------|--------------------------------------------------------------------------------|--------------|-------|------------------------|--------------|-------|---------------|--------------|-------|---------------|--------------|-------|
| Physical & Mechanical Specifications |                                                                                |              |       |                        |              |       |               |              |       |               |              |       |
| Dimensions                           | mm                                                                             | Inch         |       | mm                     | Inch         |       | mm            | Inch         |       | mm            | Inch         |       |
| Jacket                               | 1.19                                                                           | 0.047        |       | 2.18                   | 0.086        |       | 3.05          | 0.120        |       | 3.58          | 0.141        |       |
| Bend Radius: Installation            | 5                                                                              | 0.197        |       | 7                      | 0.276        |       | 10.5          | 0.413        |       | 12.5          | 0.492        |       |
| Weight                               | 6 g/m                                                                          | 0.004 lbs/ft |       | 19 g/m                 | 0.013 lbs/ft |       | 35 g/m        | 0.024 lbs/ft |       | 43 g/m        | 0.029 lbs/ft |       |
| Temperature Range                    | -60~+150°C (-76~302°F)                                                         |              |       | -60~+250°C (-76~482°F) |              |       |               |              |       |               |              |       |
| Electrical Specifications            |                                                                                |              |       |                        |              |       |               |              |       |               |              |       |
| Operating Frequency                  | 20 GHz                                                                         |              |       | 50 GHz                 |              |       | 40 GHz        |              |       | 26.5 GHz      |              |       |
| Impedance                            | 50Ω                                                                            |              |       |                        |              |       |               |              |       |               |              |       |
| Shielding Effectiveness              | > 165dB                                                                        |              |       |                        |              |       |               |              |       |               |              |       |
| Velocity of Propagation              | 70%                                                                            |              |       | 76%                    |              |       | 76%           |              |       | 76%           |              |       |
| Attenuation & Power Handling         | Attenuation (+25°C Ambient) & Power Handing(+40°C Ambient; Sea Level; VSWR1:1) |              |       |                        |              |       |               |              |       |               |              |       |
| Frequency (MHZ)                      | dB/ m                                                                          | dB/ Ft       | kW    | dB/ m                  | dB/ Ft       | kW    | dB/ m         | dB/ Ft       | kW    | dB/ m         | dB/ Ft       | kW    |
| 1000                                 | 1.204                                                                          | 0.367        | 0.047 | 0.550                  | 0.168        | 0.259 | 0.340         | 0.104        | 0.528 | 0.310         | 0.094        | 0.590 |
| 2000                                 | 1.728                                                                          | 0.527        | 0.033 | 0.782                  | 0.238        | 0.183 | 0.484         | 0.147        | 0.371 | 0.442         | 0.135        | 0.414 |
| 4000                                 | 2.494                                                                          | 0.760        | 0.023 | 1.113                  | 0.339        | 0.128 | 0.691         | 0.211        | 0.259 | 0.631         | 0.193        | 0.289 |
| 8000                                 | 3.628                                                                          | 1.106        | 0.016 | 1.587                  | 0.484        | 0.090 | 0.991         | 0.302        | 0.181 | 0.907         | 0.276        | 0.201 |
| 10000                                | 4.102                                                                          | 1.250        | 0.014 | 1.781                  | 0.543        | 0.080 | 1.114         | 0.340        | 0.161 | 1.020         | 0.311        | 0.179 |
| 18000                                | 5.700                                                                          | 1.738        | 0.010 | 2.417                  | 0.737        | 0.059 | 1.522         | 0.464        | 0.118 | 1.396         | 0.426        | 0.131 |
| 26500                                |                                                                                |              |       | 2.960                  | 0.902        | 0.048 | 1.874         | 0.571        | 0.096 | 1.721         | 0.525        | 0.106 |
| 35000                                |                                                                                |              |       | 3.428                  | 1.045        | 0.042 | 2.180         | 0.665        | 0.082 |               |              |       |
| 40000                                |                                                                                |              |       | 3.680                  | 1.122        | 0.039 | 2.346         | 0.715        | 0.076 |               |              |       |
| 50000                                |                                                                                |              |       | 4.146                  | 1.264        | 0.034 |               |              |       |               |              |       |
| Attenuation at Frequency             | dB/m= $\frac{K1*\sqrt{FMHz}+K2*FMHz}{100}$                                     |              |       |                        |              |       |               |              |       |               |              |       |
| K1                                   | 3.6716383                                                                      |              |       | 1.7220000              |              |       | 1.0550000     |              |       | 0.9610400     |              |       |
| K2                                   | 0.0043000                                                                      |              |       | 0.0005900              |              |       | 0.0005904     |              |       | 0.0005904     |              |       |



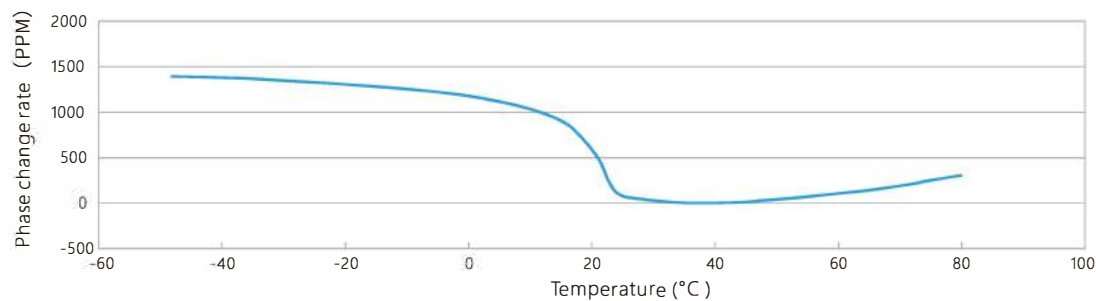
## Frequency & Attenuation



## Frequency & Power

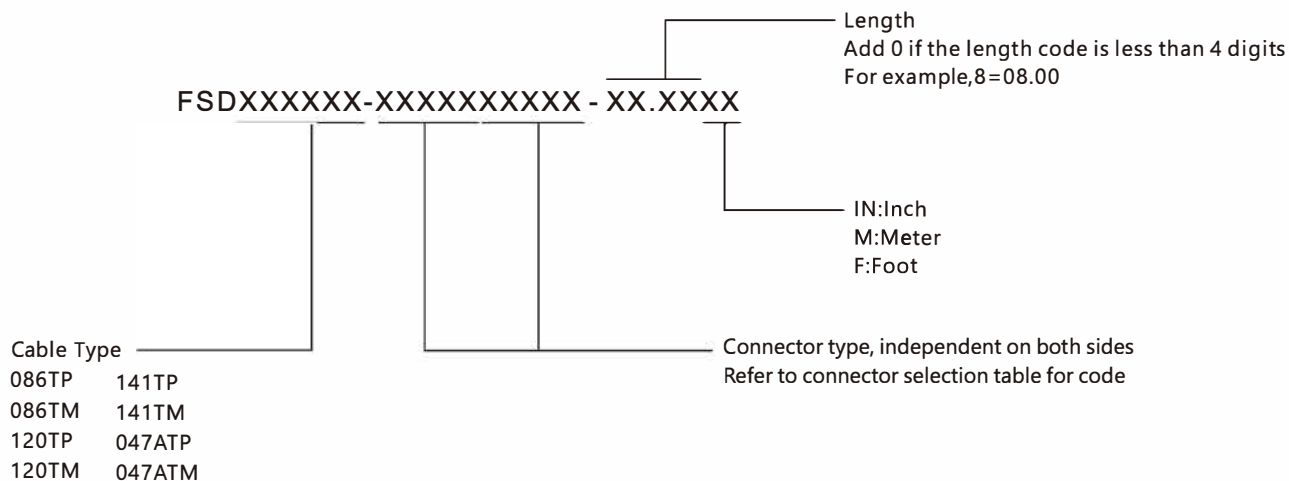


## Temperature Phase (PPM)





## Assembly Selection Information



For example: FSD086TM-SMSM-00.30M

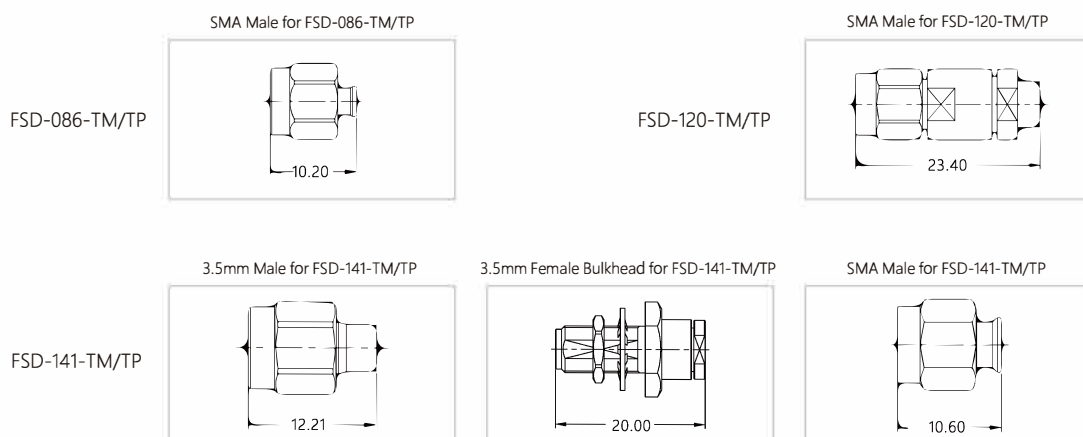
## Optional Connectors

| Connector Code | Connection Type        | Operating Frequency (GHz) | FSD-047A-TM/TP | FSD-086-TM/TP | FSD-120-TM/TP | FSD-141-TM/TP | Typical VSWR | Max VSWR |
|----------------|------------------------|---------------------------|----------------|---------------|---------------|---------------|--------------|----------|
| 18M            | 1.85mm Male            | 67GHz                     | ○              |               |               |               | 1.35         | 1.40     |
| 18FBH          | 1.85mm Female Bulkhead | 67GHz                     | ○              |               |               |               | 1.35         | 1.40     |
| 35M            | 3.5mm Male             | 26.5GHz                   |                |               |               | ●             | 1.25         | 1.30     |
| 35FBH          | 3.5mm Female Bulkhead  | 26.5GHz                   |                |               |               | ●             | 1.25         | 1.30     |
| SM             | SMA Male               | 26.5GHz                   |                | ●             |               | ●             | 1.25         | 1.30     |
|                |                        | 18GHz                     |                |               | ●             |               | 1.25         | 1.30     |

Note:

● = stocked and ○ = designed but not stocked.

## Connector drawing



Disclaimer: The product information provided in this manual is for reference only, and the details shall be subject to the actual situation of the product.