# Data Sheet

## Coaxial Cable
## SUCOFLEX_106

## Description

SUCOFLEX 100, the flexible, high performance microwave cable

## Technical Data

### Construction

| | Material | Detail | Diameter |
|---|---|---|---|
| Centre conductor | Copper, Silver plated | Wire | |
| Dielectric | PTFE (Polytetrafluoroethylene) | | mm |
| Outer conductor | Copper, Silver plated | wrapped Foil, 100% | |
| Outer conductor | Copper, Silver plated | Braid | |
| Jacket | FEP (Fluorinated ethylene propylene) | RAL 5000 - bl | 7.9 mm +/- |

### Electrical Data

| | |
|---|---|
| Impedance | 50 Ω +/- 1 |
| Operating Frequency | 18 GHz |
| Capacitance | 87 pF/m |
| Velocity of signal propagation | 77 % |
| Signal delay | 4.3 ns/m |
| Insulation resistance | ≥ 1 x $10^8$ MΩm |
| Min. screening effectiveness | ≥ 90 dB (up to 18 GHz) |
| Max. operating voltage | ≤ 3.8 $kV_{rms}$ (at sea level) |

### Mechanical Data

| | | |
|---|---|---|
| Weight | | 15.7 kg/100 m |
| Min. bending radius | static | 24 mm |
| | dynamic | 40 mm |

### Environmental Data

| | |
|---|---|
| Temperature range | -55 °C... +165 °C |
| Flammability | MIL-T-87104 § 4.6.4.8, , |
| 2011/65/EU (RoHS) | compliant |

## Additional Information

### Ordering Information

| | |
|---|---|
| Order as | SUCOFLEX_106 (available only as assembly) |

### Remarks

(For details refer to the HUBER+SUHNER MICROWAVE CABLES AND ASSEMBLIES GENERAL CATALOGUE or contact your nearest HUBER+SUHNER partner)

### Suitable Connectors

# Data Sheet

## Coaxial Cable
## SUCOFLEX_106

**Matrix** typical Attenuation [ formula: (a*f^0.5 + b*f) ] and maximum Power CW [ formula: (p/f^0.5) ]
Coefficients:

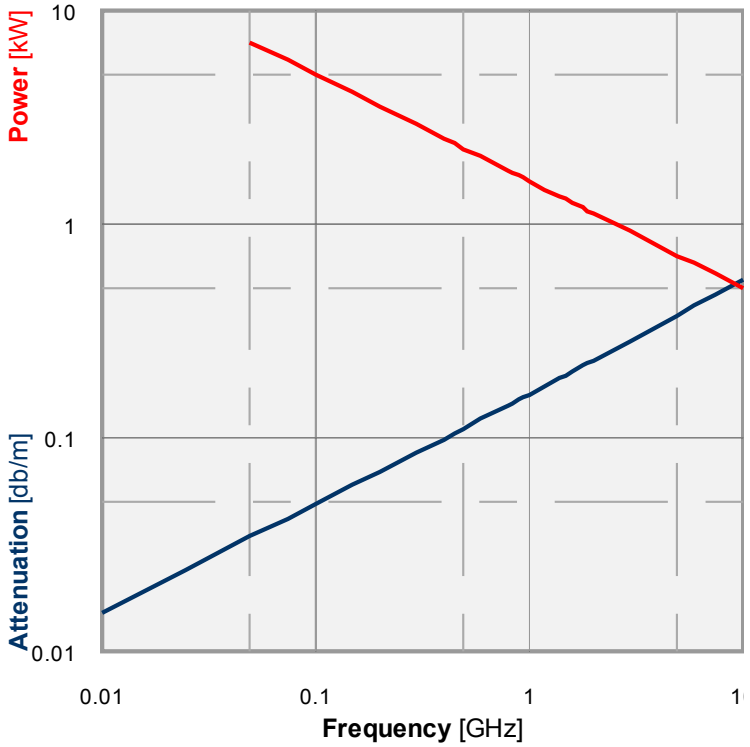
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| a = | 0.15 | b = | 0.0071 | $f_{max}$ = | 18 | P at 1GHz = | 1582 |

| Frequency (GHz) | Nom. attenuation (dB / m) sea level 25° C ambient temperature | Nom. attenuation (dB / ft) sea level 25° C ambient temperature | Max. CW power (watt) sea level 40° C ambient temperature |
|---|---|---|---|
| 0.9 | 0.15 | 0.045 | 1668 |
| 1.8 | 0.21 | 0.065 | 1179 |
| 2.7 | 0.27 | 0.081 | 963 |
| 3.6 | 0.31 | 0.095 | 834 |
| 4.5 | 0.35 | 0.107 | 746 |
| 5.4 | 0.39 | 0.118 | 681 |
| 6.3 | 0.42 | 0.128 | 630 |
| 7.2 | 0.45 | 0.138 | 590 |
| 8.1 | 0.48 | 0.148 | 556 |
| 9.0 | 0.51 | 0.157 | 527 |
| 9.9 | 0.54 | 0.165 | 503 |
| 10.8 | 0.57 | 0.174 | 481 |
| 11.7 | 0.6 | 0.182 | 463 |
| 12.6 | 0.62 | 0.190 | 446 |
| 13.5 | 0.65 | 0.197 | 431 |
| 14.4 | 0.67 | 0.205 | 417 |
| 15.3 | 0.7 | 0.212 | 404 |
| 16.2 | 0.72 | 0.219 | 393 |
| 17.1 | 0.74 | 0.226 | 383 |
| 18.0 | 0.76 | 0.233 | 373 |

## Nominal attenuation and power

| [GHz] | [dB/m] | [dB/ft] | [W] |
|---|---|---|---|
| **0.01** | 0.02 | 0.01 | 15820 |
| **0.05** | 0.03 | 0.01 | 7075 |
| **0.1** | 0.05 | 0.02 | 5003 |
| **0.15** | 0.06 | 0.02 | 4085 |
| **0.2** | 0.07 | 0.02 | 3537 |
| **0.3** | 0.08 | 0.02 | 2888 |
| **0.4** | 0.1 | 0.03 | 2501 |
| **0.45** | 0.1 | 0.03 | 2358 |
| **0.5** | 0.11 | 0.03 | 2237 |
| **0.6** | 0.12 | 0.04 | 2042 |
| **0.8** | 0.14 | 0.04 | 1769 |
| **0.85** | 0.14 | 0.04 | 1716 |
| **0.9** | 0.15 | 0.05 | 1668 |
| **0.95** | 0.15 | 0.05 | 1623 |
| **1** | 0.16 | 0.05 | 1582 |
| **1.8** | 0.21 | 0.06 | 1179 |
| **1.9** | 0.22 | 0.07 | 1148 |
| **2** | 0.23 | 0.07 | 1119 |
| **2.4** | 0.25 | 0.08 | 1021 |
| **3** | 0.28 | 0.09 | 913 |
| **4** | 0.33 | 0.1 | 791 |
| **5** | 0.37 | 0.11 | 707 |
| **6** | 0.41 | 0.12 | 646 |
| **7.5** | 0.46 | 0.14 | 578 |
| **8** | 0.48 | 0.15 | 559 |
| **9** | 0.51 | 0.16 | 527 |
| **10** | 0.55 | 0.17 | 500 |
| **12.5** | 0.62 | 0.19 | 447 |
| **15** | 0.69 | 0.21 | 408 |
| **18** | 0.76 | 0.23 | 373 |

Attenuation and power graph




☑ Logarithmic scale

Please note: Attenuation values at +25°C ambient temperature and sea level * Power values at +40°C ambient temperature and sea level **

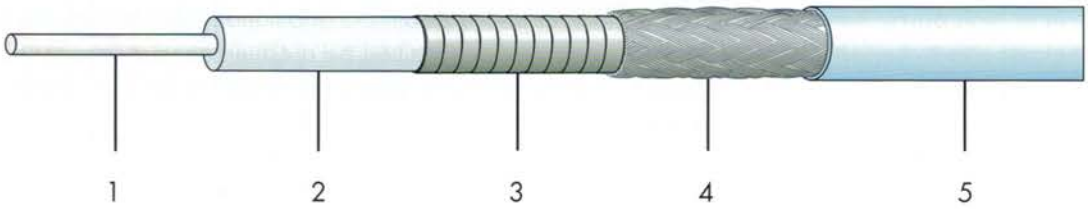
## Tests

**Following tests have been passed successfully. For any details please contact your nearest HUBER+SUHNER representative.**

| Test description | Specification / Paragraph / Method |
|---|---|
| **Fire Test a** | MIL-T-87104 § 4.6.4.8 |

# SUCOFLEX_106

## Cable design




| | Description | Diameter |
|---|---|---|
| 1. Centre conductor | Solid silver-plated copper wire | 2.10 mm |
| 2. Dielectric | Low density PTFE | 6.20 mm |
| 3. 1st outer conductor | Silver-plated copper tape, wrapped | 6.50 mm |
| 4. 2nd outer conductor | Silver-plated copper braid | 7.10 mm |
| 5. Jacket | Fluoroethylenepropylene, blue | 7.90 mm |

## Electrical cable data

| | | | | | |
|---|---|---|---|---|---|
| Impedance | | | | | 50 Ohm |
| Operating frequency | | | | | 18 GHz |
| Capacitance | | | | | 87 pF/m |
| Velocity of propagation | | | | | 77 % |
| Time delay | | | | | 4.3 ns/m |
| Nom. attenuation* | coefficient a | **0.1500** | coefficient b | **0.0071** | |
| Max. attenuation* | coefficient a | **0.1650** | coefficient b | **0.0078** | |
| Max. operating voltage | | | | | 3.8 kVrms |
| Min. screening effectiveness up to 18 GHz | | | | | 90 dB |

**Attenuation calculation*

$$\alpha_{25} = a \cdot \sqrt{f(GHz)} + b \cdot f(GHz) \quad (dB/m)$$

## General cable data

| | |
|---|---|
| Temperature range | -55...+165 °C |
| Weight | 15.7 kg/100m |
| Min. bending radius static | 24 mm |
| Min. bending radius dynamic | 40 mm |

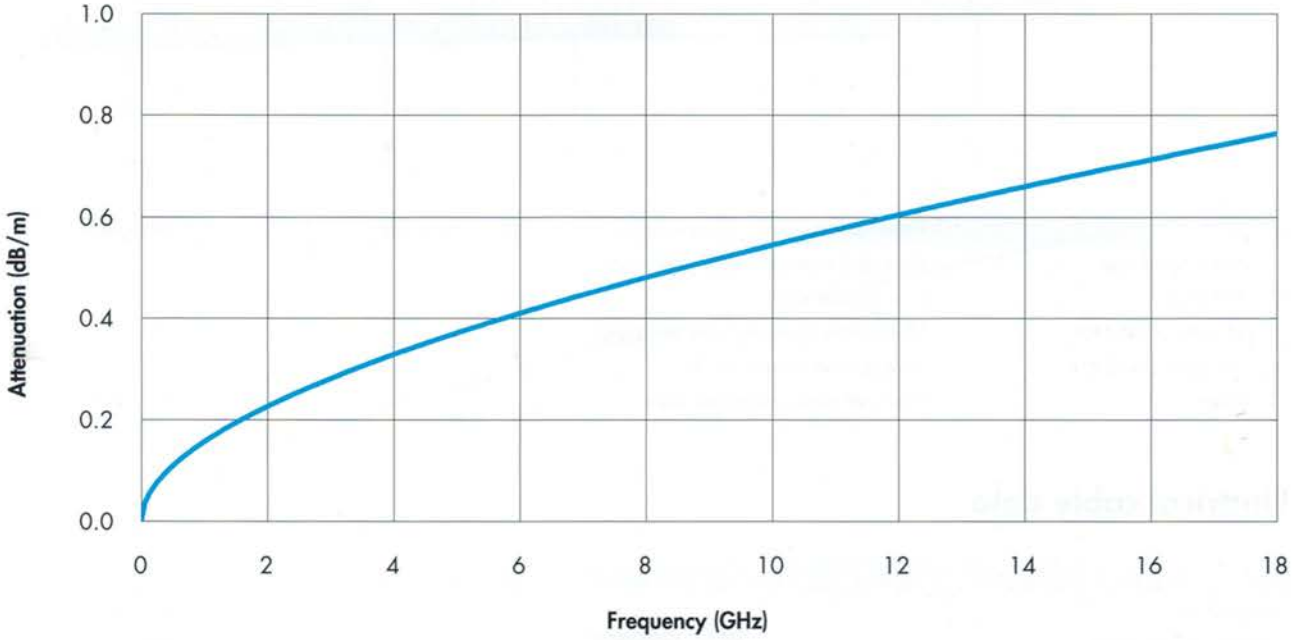
## Suitable connectors

Please refer to pages 124 ff

# SUCOFLEX_106

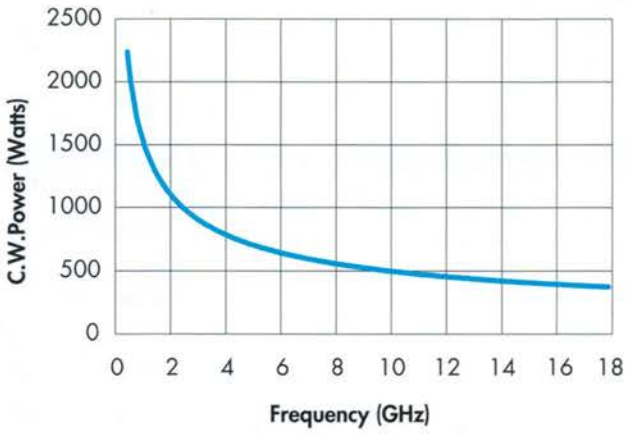
## Cable attenuation

Nominal values @ +25 °C ambient temperature




## Power handling

Maximum values @ +40 °C ambient temperature and sea level




## Phase change vs. temperature