

F1-PNMSM-2M-HF

FSJ1-50A Jumper with interface types SMA Male and N Male, 2 m



Product Classification

| | |
|-----------------------|--------------------|
| Product Type | SureFlex® standard |
| Product Brand | HELIAX® |
| Product Series | FSJ1-50A |

General Specifications

| | |
|---|------------------|
| Attachment, Connector A | Field attachment |
| Attachment, Connector B | Field attachment |
| Body Style, Connector A | Straight |
| Body Style, Connector B | Straight |
| Interface, Connector A | SMA Male |
| Interface, Connector B | N Male |
| Specification Sheet Revision Level | B |

Dimensions

| | |
|---------------------|----------------|
| Length | 2 m 6.562 ft |
| Nominal Size | 1/4 in |

VSWR/Return Loss

| Frequency Band | VSWR | Return Loss (dB) |
|-----------------|-------|------------------|
| 0–3000 MHz | 1.222 | 20 |
| 3000–6000 MHz | 1.329 | 17 |
| 6000–13600 MHz | 1.925 | 10 |
| 13600–18000 MHz | 2.204 | 8.5 |

Jumper Assembly Sample Label

F1-PNMSM-2M-HF



Environmental Specifications

Immersion Test Method Meets IEC 60529:2001, IP68 in mated condition

Regulatory Compliance/Certifications

| Agency | Classification |
|---------------|--|
| ISO 9001:2015 | Designed, manufactured and/or distributed under this quality management system |

Included Products

- F1PNM-HF – Type N Male for 1/4 in FSJ1-50A cable
- F1TNM-HC – Type N Male for 1/4 in FSJ1-50A cable
- F1TSM-C – SMA Male for 1/4 in FSJ1-50A cable
- FSJ1-50A – FSJ1-50A, HELIAX® Superflexible Low Density Foam Coaxial Cable, corrugated copper, 1/4 in, black PE jacket

F1PNM-HF

Type N Male for 1/4 in FSJ1-50A cable



Product Classification

| | |
|-----------------------|----------------------------------|
| Product Type | Wireless and radiating connector |
| Product Brand | HELIAX® |
| Product Series | FSJ1-50A |

General Specifications

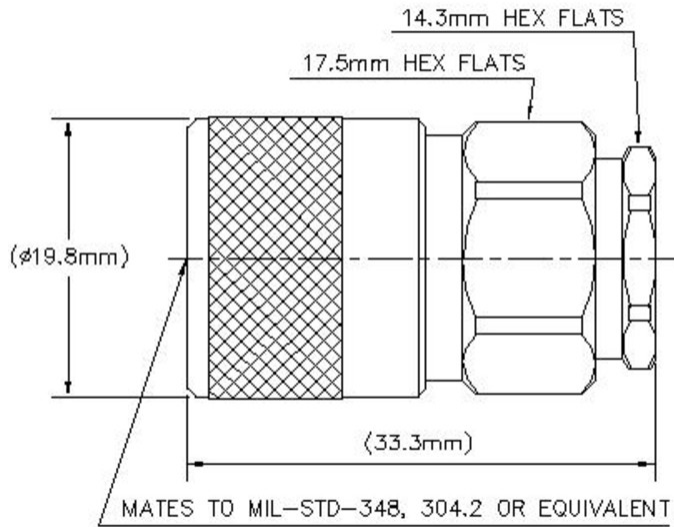
| | |
|--|-----------|
| Body Style | Straight |
| Cable Family | FSJ1-50A |
| Inner Contact Attachment Method | Solder |
| Inner Contact Plating | Gold |
| Interface | N Male |
| Mounting Angle | Straight |
| Outer Contact Attachment Method | Tab-flare |
| Outer Contact Plating | Silver |
| Pressurizable | No |

Dimensions

| | |
|---------------------|--------------------|
| Height | 20.32 mm 0.8 in |
| Width | 20.32 mm 0.8 in |
| Length | 33.27 mm 1.31 in |
| Diameter | 20.32 mm 0.8 in |
| Nominal Size | 1/4 in |

Outline Drawing

F1PNM-HF



Electrical Specifications

| | |
|---|------------------|
| Average Power at Frequency | 0.4 kW @ 900 MHz |
| Cable Impedance | 50 ohm |
| Connector Impedance | 50 ohm |
| dc Test Voltage | 1600 V |
| Inner Contact Resistance, maximum | 1 mOhm |
| Insulation Resistance, minimum | 5000 MOhm |
| Operating Frequency Band | 0 – 18000 MHz |
| Outer Contact Resistance, maximum | 0.25 mOhm |
| Peak Power, maximum | 6.4 kW |
| RF Operating Voltage, maximum (vrms) | 565 V |
| Shielding Effectiveness | -110 dB |

VSWR/Return Loss

| Frequency Band | VSWR | Return Loss (dB) |
|-----------------|-------|------------------|
| 45–4100 MHz | 1.046 | 32.96 |
| 4100–6200 MHz | 1.083 | 27.99 |
| 6200–11000 MHz | 1.173 | 21.98 |
| 11000–18000 MHz | 1.222 | 20.01 |

F1PNM-HF

Mechanical Specifications

| | |
|--|------------------------|
| Connector Retention Tensile Force | 449.27 N 101 lbf |
| Coupling Nut Proof Torque | 1.7 N-m 15.046 in lb |
| Coupling Nut Proof Torque Method | IEC 61169-16:9.3.11 |
| Coupling Nut Retention Force | 445 N 100.04 lbf |
| Coupling Nut Retention Force Method | IEC 61169-16:9.3.11 |
| Insertion Force | 124.55 N 28 lbf |
| Insertion Force Method | IEC 61169-16:9.3.5 |
| Interface Durability | 500 cycles |
| Interface Durability Method | IEC 61169-4:17 |
| Mechanical Shock Test Method | IEC 60068-2-27 |

Environmental Specifications

| | |
|---|---------------------------------------|
| Operating Temperature | -55 °C to +85 °C (-67 °F to +185 °F) |
| Storage Temperature | -65 °C to +125 °C (-85 °F to +257 °F) |
| Attenuation, Ambient Temperature | 20 °C 68 °F |
| Average Power, Ambient Temperature | 40 °C 104 °F |
| Average Power, Inner Conductor Temperature | 100 °C 212 °F |
| Corrosion Test Method | IEC 60068-2-11 |
| Immersion Depth | 1 m |
| Immersion Test Mating | Mated |
| Immersion Test Method | IEC 60529:2001, IP68 |
| Moisture Resistance Test Method | IEC 60068-2-3 |
| Thermal Shock Test Method | IEC 60068-2-14 |
| Vibration Test Method | IEC 60068-2-6 |

Packaging and Weights

| | |
|--------------------|--------------------|
| Weight, net | 49.18 g 0.108 lb |
|--------------------|--------------------|

Regulatory Compliance/Certifications

| Agency | Classification |
|---------------|--|
| CHINA-ROHS | Below maximum concentration value |
| ISO 9001:2015 | Designed, manufactured and/or distributed under this quality management system |

F1PNM-HF

| | |
|------------|--|
| REACH-SVHC | Compliant as per SVHC revision on www.commscope.com/ProductCompliance |
| ROHS | Compliant |
| UK-ROHS | Compliant |



* Footnotes

| | |
|------------------------|---|
| Immersion Depth | Immersion at specified depth for 24 hours |
|------------------------|---|

F1TNM-HC

Type N Male for 1/4 in FSJ1-50A cable



Product Classification

| | |
|-----------------------|----------------------------------|
| Product Type | Wireless and radiating connector |
| Product Brand | HELIAX® |
| Product Series | FSJ1-50A |

General Specifications

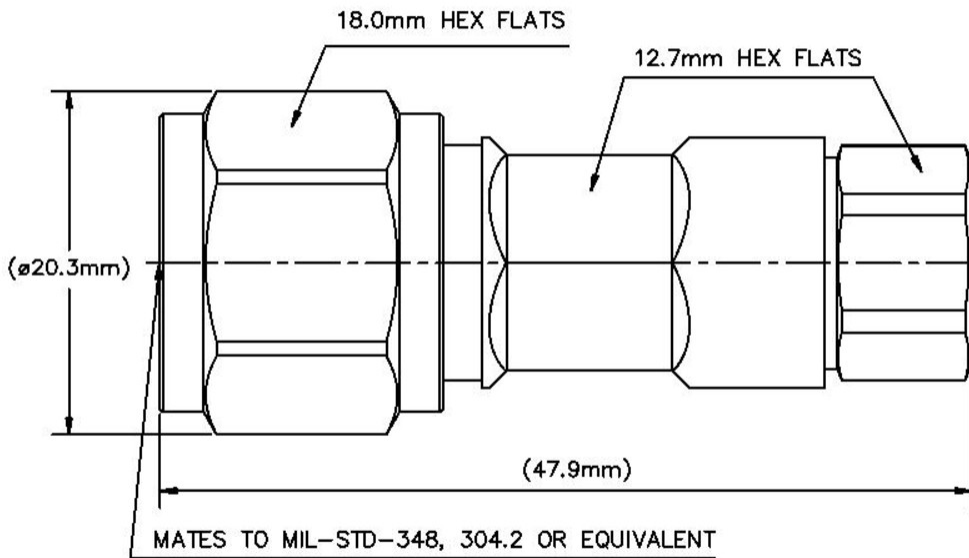
| | |
|--|---------------|
| Body Style | Straight |
| Cable Family | FSJ1-50A |
| Inner Contact Attachment Method | Captivated |
| Inner Contact Plating | Silver |
| Interface | N Male |
| Mounting Angle | Straight |
| Outer Contact Attachment Method | Self-clamping |
| Outer Contact Plating | Trimetal |
| Pressurizable | No |

Dimensions

| | |
|---------------------|--------------------|
| Length | 48.01 mm 1.89 in |
| Diameter | 20.32 mm 0.8 in |
| Nominal Size | 1/4 in |

Outline Drawing

F1TNM-HC



Electrical Specifications

| | |
|---|----------------------|
| 3rd Order IMD at Frequency | -116 dBm @ 910 MHz |
| 3rd Order IMD Test Method | Two +43 dBm carriers |
| Average Power at Frequency | 0.4 kW @ 900 MHz |
| Cable Impedance | 50 ohm |
| Connector Impedance | 50 ohm |
| dc Test Voltage | 1600 V |
| Inner Contact Resistance, maximum | 1 mOhm |
| Insulation Resistance, minimum | 5000 MOhm |
| Operating Frequency Band | 0 – 6000 MHz |
| Outer Contact Resistance, maximum | 0.25 mOhm |
| Peak Power, maximum | 6.4 kW |
| RF Operating Voltage, maximum (vrms) | 565 V |
| Shielding Effectiveness | -110 dB |

VSWR/Return Loss

| Frequency Band | VSWR | Return Loss (dB) |
|----------------|------|------------------|
|----------------|------|------------------|

F1TNM-HC

| | | |
|----------------------|-------|-------|
| 450–2200 MHz | 1.065 | 30.04 |
| 2200–3000 MHz | 1.065 | 30.04 |
| 3000–6000 MHz | 1.18 | 21.67 |

Mechanical Specifications

| | |
|--|------------------------|
| Connector Retention Tensile Force | 449.27 N 101 lbf |
| Coupling Nut Proof Torque | 1.7 N-m 15.046 in lb |
| Coupling Nut Proof Torque Method | IEC 61169-16:9.3.11 |
| Coupling Nut Retention Force | 449.98 N 101.16 lbf |
| Coupling Nut Retention Force Method | IEC 61169-16:9.3.11 |
| Insertion Force | 124.55 N 28 lbf |
| Insertion Force Method | IEC 61169-16:9.3.5 |
| Interface Durability | 500 cycles |
| Interface Durability Method | IEC 61169-4:17 |
| Mechanical Shock Test Method | IEC 60068-2-27 |

Environmental Specifications

| | |
|---|---------------------------------------|
| Operating Temperature | -55 °C to +85 °C (-67 °F to +185 °F) |
| Storage Temperature | -65 °C to +125 °C (-85 °F to +257 °F) |
| Attenuation, Ambient Temperature | 20 °C 68 °F |
| Average Power, Ambient Temperature | 40 °C 104 °F |
| Average Power, Inner Conductor Temperature | 100 °C 212 °F |
| Corrosion Test Method | IEC 60068-2-11 |
| Immersion Depth | 1 m |
| Immersion Test Mating | Mated |
| Immersion Test Method | IEC 60529:2001, IP68 |
| Moisture Resistance Test Method | IEC 60068-2-3 |
| Thermal Shock Test Method | IEC 60068-2-14 |
| Vibration Test Method | IEC 60068-2-6 |

Packaging and Weights

| | |
|--------------------|--------------------|
| Weight, net | 43.83 g 0.097 lb |
|--------------------|--------------------|

Regulatory Compliance/Certifications

F1TNM-HC

Agency

CHINA-ROHS

ISO 9001:2015

REACH-SVHC

ROHS

UK-ROHS



Classification

Below maximum concentration value

Designed, manufactured and/or distributed under this quality management system

Compliant as per SVHC revision on www.commscope.com/ProductCompliance

Compliant

Compliant/Exempted

* Footnotes

Immersion Depth

Immersion at specified depth for 24 hours

F1TSM-C

SMA Male for 1/4 in FSJ1-50A cable



Product Classification

| | |
|-----------------------|----------------------------------|
| Product Type | Wireless and radiating connector |
| Product Brand | HELIAX® |
| Product Series | FSJ1-50A |

General Specifications

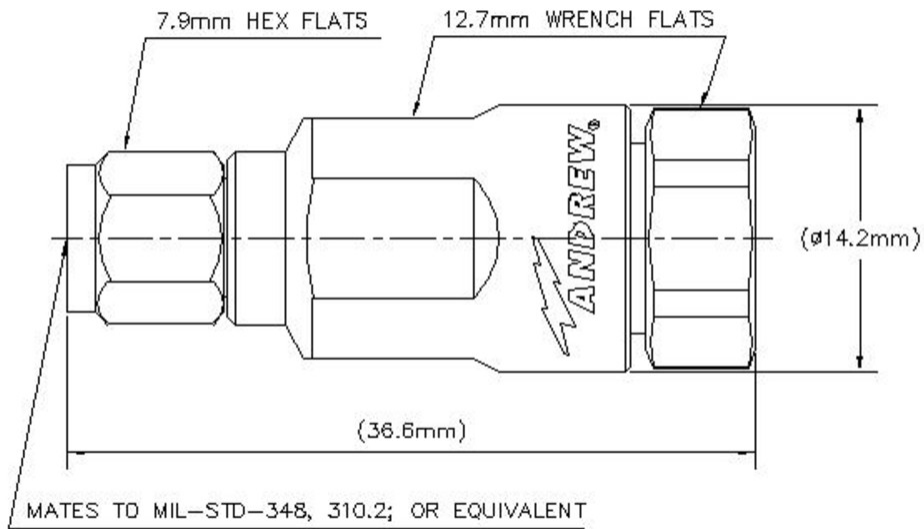
| | |
|--|---------------|
| Body Style | Straight |
| Cable Family | FSJ1-50A |
| Inner Contact Attachment Method | Captivated |
| Inner Contact Plating | Gold |
| Interface | SMA Male |
| Mounting Angle | Straight |
| Outer Contact Attachment Method | Self-clamping |
| Outer Contact Plating | Trimetal |
| Pressurizable | No |

Dimensions

| | |
|---------------------|--------------------|
| Height | 14.22 mm 0.56 in |
| Width | 14.22 mm 0.56 in |
| Length | 36.58 mm 1.44 in |
| Diameter | 14.22 mm 0.56 in |
| Nominal Size | 1/4 in |

Outline Drawing

F1TSM-C



Electrical Specifications

| | |
|---|------------------|
| Average Power at Frequency | 0.4 kW @ 900 MHz |
| Cable Impedance | 50 ohm |
| Connector Impedance | 50 ohm |
| dc Test Voltage | 1000 V |
| Inner Contact Resistance, maximum | 3 mOhm |
| Insulation Resistance, minimum | 5000 MOhm |
| Operating Frequency Band | 0 – 6000 MHz |
| Outer Contact Resistance, maximum | 2.5 mOhm |
| Peak Power, maximum | 5 kW |
| RF Operating Voltage, maximum (vrms) | 500 V |
| Shielding Effectiveness | -110 dB |

VSWR/Return Loss

| Frequency Band | VSWR | Return Loss (dB) |
|----------------|-------|------------------|
| 0–3000 MHz | 1.173 | 21.98 |
| 3000–6000 MHz | 1.222 | 20.01 |
| 6000–9000 MHz | 1.29 | 18 |

Mechanical Specifications

F1TSM-C

| | |
|--|------------------------|
| Connector Retention Tensile Force | 449.27 N 101 lbf |
| Coupling Nut Proof Torque | 1.7 N-m 15.046 in lb |
| Coupling Nut Proof Torque Method | IEC 61169-16:9.3.11 |
| Coupling Nut Retention Force | 266.98 N 60.02 lbf |
| Coupling Nut Retention Force Method | IEC 61169-15:9.3.11 |
| Insertion Force | 97.86 N 22 lbf |
| Insertion Force Method | IEC 61169-16:9.3.5 |
| Interface Durability | 500 cycles |
| Interface Durability Method | IEC 61169-4:17 |
| Mechanical Shock Test Method | IEC 60068-2-27 |

Environmental Specifications

| | |
|---|---------------------------------------|
| Operating Temperature | -55 °C to +85 °C (-67 °F to +185 °F) |
| Storage Temperature | -65 °C to +125 °C (-85 °F to +257 °F) |
| Attenuation, Ambient Temperature | 20 °C 68 °F |
| Average Power, Ambient Temperature | 40 °C 104 °F |
| Average Power, Inner Conductor Temperature | 100 °C 212 °F |
| Corrosion Test Method | IEC 60068-2-11 |
| Moisture Resistance Test Method | IEC 60068-2-3 |
| Thermal Shock Test Method | IEC 60068-2-14 |
| Vibration Test Method | IEC 60068-2-6 |

Packaging and Weights

| | |
|--------------------|--------------------|
| Weight, net | 24.99 g 0.055 lb |
|--------------------|--------------------|

Regulatory Compliance/Certifications

| Agency | Classification |
|---------------|--|
| CHINA-ROHS | Below maximum concentration value |
| ISO 9001:2015 | Designed, manufactured and/or distributed under this quality management system |
| REACH-SVHC | Compliant as per SVHC revision on www.commscope.com/ProductCompliance |
| ROHS | Compliant |
| UK-ROHS | Compliant/Exempted |



FSJ1-50A



FSJ1-50A, HELIAX® Superflexible Low Density Foam Coaxial Cable, corrugated copper, 1/4 in, black PE jacket

Product Classification

| | |
|-----------------------|------------------------|
| Product Type | Coaxial wireless cable |
| Product Brand | HELIAX® SureFlex® |
| Product Series | FSJ1-50A MLOC |

General Specifications

| | |
|-------------------------|--|
| Product Number | 887009902/00 SZ887009902/00 |
| Flexibility | Superflexible |
| Jacket Color | Black |
| Performance Note | Attenuation values typical, guaranteed within 5% |

Dimensions

| | |
|---------------------------------|---------------------|
| Diameter Over Dielectric | 4.826 mm 0.19 in |
| Diameter Over Jacket | 7.366 mm 0.29 in |
| Inner Conductor OD | 1.905 mm 0.075 in |
| Outer Conductor OD | 6.35 mm 0.25 in |
| Nominal Size | 1/4 in |

Electrical Specifications

| | |
|---------------------------------------|----------------------------------|
| Cable Impedance | 50 ohm \pm 1 ohm |
| Capacitance | 79.4 pF/m 24.201 pF/ft |
| dc Resistance, Inner Conductor | 9.843 ohms/km 3 ohms/kft |
| dc Resistance, Outer Conductor | 7.216 ohms/km 2.199 ohms/kft |
| dc Test Voltage | 1600 V |
| Inductance | 0.2 μ H/m 0.061 μ H/ft |

FSJ1-50A

| | |
|--|-----------------|
| Insulation Resistance | 100000 MOhms-km |
| Jacket Spark Test Voltage (rms) | 5000 V |
| Operating Frequency Band | 1 – 18000 MHz |
| Peak Power | 6.4 kW |
| Velocity | 82 % |

VSWR/Return Loss

| Frequency Band | VSWR | Return Loss (dB) |
|-----------------------|-------------|-------------------------|
| 680–960 MHz | 1.201 | 20.8 |
| 1700–2200 MHz | 1.201 | 20.8 |
| 2200–2700 MHz | 1.433 | 15 |

Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|------------------------|-------------------------------|--------------------------------|---------------------------|
| 1.0 | 0.577 | 0.176 | 6.4 |
| 1.5 | 0.707 | 0.215 | 6.4 |
| 2.0 | 0.816 | 0.249 | 6.4 |
| 10.0 | 1.833 | 0.559 | 3.99 |
| 20.0 | 2.6 | 0.792 | 2.81 |
| 30.0 | 3.192 | 0.973 | 2.29 |
| 50.0 | 4.136 | 1.261 | 1.77 |
| 85.0 | 5.419 | 1.652 | 1.35 |
| 88.0 | 5.516 | 1.681 | 1.33 |
| 100.0 | 5.889 | 1.795 | 1.24 |
| 108.0 | 6.125 | 1.867 | 1.19 |
| 150.0 | 7.25 | 2.21 | 1.01 |
| 174.0 | 7.825 | 2.385 | 0.93 |
| 200.0 | 8.408 | 2.563 | 0.87 |
| 204.0 | 8.495 | 2.589 | 0.86 |
| 300.0 | 10.373 | 3.162 | 0.71 |
| 400.0 | 12.051 | 3.673 | 0.61 |
| 450.0 | 12.817 | 3.906 | 0.57 |
| 460.0 | 12.965 | 3.952 | 0.56 |
| 500.0 | 13.545 | 4.128 | 0.54 |
| 512.0 | 13.715 | 4.18 | 0.53 |

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| | | | |
|---------------|--------|--------|------|
| 600.0 | 14.909 | 4.544 | 0.49 |
| 700.0 | 16.175 | 4.93 | 0.45 |
| 800.0 | 17.362 | 5.292 | 0.42 |
| 824.0 | 17.637 | 5.376 | 0.41 |
| 894.0 | 18.42 | 5.614 | 0.4 |
| 960.0 | 19.134 | 5.832 | 0.38 |
| 1000.0 | 19.556 | 5.96 | 0.37 |
| 1218.0 | 21.738 | 6.626 | 0.34 |
| 1250.0 | 22.044 | 6.719 | 0.33 |
| 1500.0 | 24.326 | 7.414 | 0.3 |
| 1700.0 | 26.038 | 7.936 | 0.28 |
| 1794.0 | 26.813 | 8.172 | 0.27 |
| 1800.0 | 26.862 | 8.187 | 0.27 |
| 2000.0 | 28.455 | 8.673 | 0.26 |
| 2100.0 | 29.227 | 8.908 | 0.25 |
| 2200.0 | 29.984 | 9.139 | 0.24 |
| 2300.0 | 30.727 | 9.365 | 0.24 |
| 2500.0 | 32.174 | 9.806 | 0.23 |
| 2700.0 | 33.576 | 10.233 | 0.22 |
| 3000.0 | 35.602 | 10.851 | 0.21 |
| 3400.0 | 38.183 | 11.638 | 0.19 |
| 3600.0 | 39.428 | 12.017 | 0.19 |
| 3700.0 | 40.041 | 12.204 | 0.18 |
| 3800.0 | 40.647 | 12.389 | 0.18 |
| 3900.0 | 41.247 | 12.571 | 0.18 |
| 4000.0 | 41.841 | 12.753 | 0.17 |
| 4100.0 | 42.429 | 12.932 | 0.17 |
| 4200.0 | 43.012 | 13.11 | 0.17 |
| 4300.0 | 43.59 | 13.286 | 0.17 |
| 4400.0 | 44.163 | 13.46 | 0.17 |
| 4500.0 | 44.73 | 13.633 | 0.16 |
| 4600.0 | 45.293 | 13.805 | 0.16 |
| 4700.0 | 45.852 | 13.975 | 0.16 |
| 4800.0 | 46.405 | 14.144 | 0.16 |
| 4900.0 | 46.955 | 14.311 | 0.16 |

FSJ1-50A

| | | | |
|---------|---------|--------|------|
| 5000.0 | 47.5 | 14.477 | 0.15 |
| 6000.0 | 52.747 | 16.077 | 0.14 |
| 8000.0 | 62.37 | 19.01 | 0.12 |
| 8800.0 | 65.974 | 20.108 | 0.11 |
| 10000.0 | 71.173 | 21.693 | 0.1 |
| 12000.0 | 79.393 | 24.198 | 0.09 |
| 14000.0 | 87.172 | 26.569 | 0.08 |
| 15800.0 | 93.872 | 28.611 | 0.08 |
| 16000.0 | 94.601 | 28.833 | 0.08 |
| 18000.0 | 101.745 | 31.01 | 0.07 |

Material Specifications

| | |
|---------------------------------|---------------------------|
| Dielectric Material | Foam PE |
| Jacket Material | PE |
| Inner Conductor Material | Copper-clad aluminum wire |
| Outer Conductor Material | Corrugated copper |

Mechanical Specifications

| | |
|--|---------------------------|
| Minimum Bend Radius, multiple Bends | 25.4 mm 1 in |
| Minimum Bend Radius, single Bend | 25.4 mm 1 in |
| Number of Bends, minimum | 15 |
| Number of Bends, typical | 20 |
| Tensile Strength | 68 kg 149.914 lb |
| Bending Moment | 0.7 N-m 6.196 in lb |
| Flat Plate Crush Strength | 1.8 kg/mm 100.795 lb/in |

Environmental Specifications

| | |
|---|--------------------------------------|
| Installation temperature | -40 °C to +60 °C (-40 °F to +140 °F) |
| Operating Temperature | -55 °C to +85 °C (-67 °F to +185 °F) |
| Storage Temperature | -70 °C to +85 °C (-94 °F to +185 °F) |
| Attenuation, Ambient Temperature | 68 °F 20 °C |
| Average Power, Ambient Temperature | 104 °F 40 °C |
| Average Power, Inner Conductor Temperature | 212 °F 100 °C |

FSJ1-50A

Packaging and Weights

Cable weight

0.07 kg/m | 0.047 lb/ft

Regulatory Compliance/Certifications

Agency

Classification

CHINA-ROHS

Below maximum concentration value

ISO 9001:2015

Designed, manufactured and/or distributed under this quality management system

REACH-SVHC

Compliant as per SVHC revision on www.commscope.com/ProductCompliance

ROHS

Compliant

UK-ROHS

Compliant

UL/ETL Certification

Compliant

