industrial data rf cable series

Phase-Stable Microwave Coax

Low-Loss Phase-Stable Microwave Test & Aerospace Coaxial Cable



50 Ω 77 % VoP low-density PTFE phase-stable microwave test & aerospace coax (DC–50 GHz)

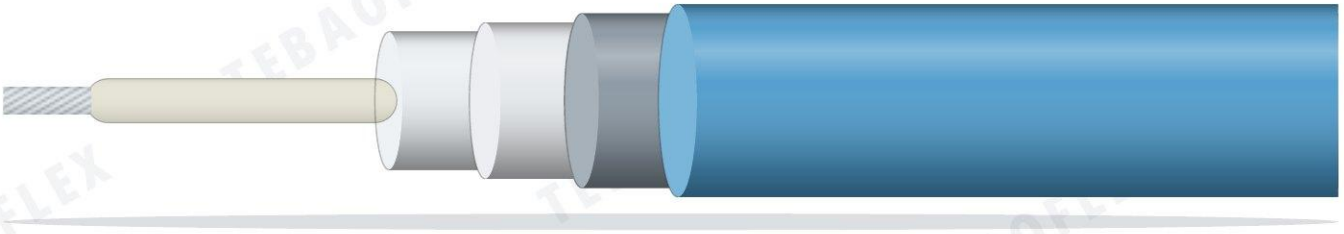
DC–18 / 26.5 / 40 / 50 GHz | 50 Ω · 77 % VoP LD-PTFE | Phase- & Amplitude-Stable

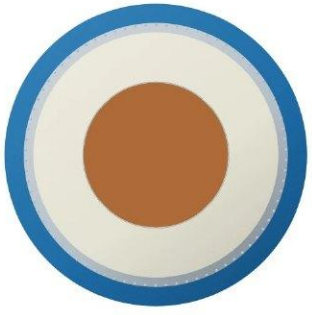
Application

50 Ω ultra-low-loss phase-stable flexible microwave test and aerospace coaxial cable (Phase-Stable Microwave Coax Series 101 / 102 / 103 / 104 / 106) per MIL-DTL-17 with a silver-plated core, microporous ePTFE dielectric (77 % VoP), dual silver shields (> 90

Typical uses: Vector Network Analyzer (VNA) & ATE Test, AESA Phased-Array Radar Beamforming, EW Direction-Finding & ELINT Receivers, Satellite & Deep-Space Payloads (P-Version), 5G FR2 mmWave & Automotive Radar Chambers

Construction





Cross-section, not to scale

1. Silver-plated copper (SPC / SPCW) center conductor
2. Low-density microporous PTFE (LD-PTFE) dielectric
3. Outer silver-plated copper tubular wire braid
4. Outer sheath

Technical data

Typical values

Characteristic impedance	50 Ω ± 1 Ω	Velocity of propagation	77 % nominal (87.0 pF/m, 4.3 ns/m delay)
Max. operating frequency	50 GHz (101) · 40 GHz (102) · 26.5 GHz (103) · 18 GHz (104/106)	Attenuation @ 18 GHz	178 dB/100m (101) · 142 (102) · 96 (104) · 68 dB/100m (106)
Phase / amplitude stability	< 0.8°/GHz (360° bend) · ± 0.05 dB amplitude stability	Shielding effectiveness	> 90 dB (100 MHz to max frequency)
Operating temperature range	-55 °C to +165 °C (-40 to +85 °C PUR armored)	Avg CW power @ 18 GHz (+40 °C)	68 W (101) · 95 W (102) · 180 W (104) · 300 W (106)
Thermal phase stability	< 600 ppm (-40 °C to +85 °C)	Outer jacket diameter	3.65 mm (101) · 4.0 (102) · 4.6 (103) · 5.5 (104) · 7.9 mm (106)
Min. bending radius (static)	11 mm (101) · 12 (102) · 14 (103) · 16 (104) · 24 mm (106)	Min. bending radius (dynamic)	25 mm (101) · 25 (102) · 30 (103) · 35 (104) · 55 mm (106)
Space outgassing (ECSS)	TML < 1.0 % · CVCM < 0.1 % per ECSS-Q-ST-70-02	Radiation resistance (E-type)	Up to 100 Mrad gamma/electron radiation with ETFE jacket
Fluid & flame resistance	FAR 25.869 / UL VW-1 & Skydrol/fuel resistant	Standards	IEC 61196-1, MIL-DTL-17, ECSS-Q-ST-70-02

Sizes

8 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Impedance / size	Conductor & dielectric	Wall ≈ mm	Outer Ø ≈ mm	Metal kg/km	Weight ≈ kg/km	Min. bend R fixed mm
Standard Phase-Stable Microwave Coax configurations 8 sizes							
☐ Phase-Stable Microwave Coax Series 101 (50 GHz)	50 Ω · DC–50 GHz	Solid SPC Ø 0.65 + LD-PTFE	0.35	3.65	22.0	34.0	11
☐ Phase-Stable Microwave Coax Series 101P (Flex 50G)	50 Ω · DC–50 GHz Stranded	7-Wire SPC + LD-PTFE	0.35	3.65	22.0	34.0	11
☐ Phase-Stable Microwave Coax Series 102 (40 GHz)	50 Ω · DC–40 GHz	Solid SPC Ø 0.82 + LD-PTFE	0.38	4.00	28.0	43.0	12
☐ Phase-Stable Microwave Coax Series 103 (26.5 GHz)	50 Ω · DC–26.5 GHz	Solid SPC Ø 1.05 + LD-PTFE	0.40	4.60	36.0	55.0	14
☐ Phase-Stable Microwave Coax Series 104 (18 GHz)	50 Ω · DC–18 GHz	Solid SPC Ø 1.42 + LD-PTFE	0.45	5.50	48.0	73.0	16
☐ Phase-Stable Microwave Coax Series 104P (Flex 18G)	50 Ω · DC–18 GHz Stranded	7-Wire SPC Ø 1.42 + LD-PTFE	0.45	5.50	48.0	73.0	16
☐ Phase-Stable Microwave Coax Series 104A (Armored)	50 Ω · DC–18 GHz Armored	104 Core + SS Crush Armor	1.20	9.90	95.0	165.0	40
☐ Phase-Stable Microwave Coax Series 106 (Low-Loss 18G)	50 Ω · DC–18 GHz Trunk	Solid SPC Ø 2.05 + LD-PTFE	0.55	7.90	88.0	135.0	24

– Outer diameters and weights are nominal engineering values for Phase-Stable Microwave Coax subject to standard manufacturing tolerances per IEC 61196-1 / MIL-DTL-17 & ECSS-Q-ST-70 (Phase-Stable Microwave Coax).

RF & electrical data

8 sizes

Configuration	Max. DC R @ 20 °C Ω/km	Char. Z0 Ω	Velocity VoP / L (% or nH/m)	Dielectric test VAC rms
Phase-Stable Microwave Coax Series 101 (50 GHz) (50 Ω · DC–50 GHz)	56.00	50.0	77.0	1,000
Phase-Stable Microwave Coax Series 101P (Flex 50G) (50 Ω · DC–50 GHz Stranded)	62.00	50.0	77.0	1,000
Phase-Stable Microwave Coax Series 102 (40 GHz) (50 Ω · DC–40 GHz)	35.00	50.0	77.0	1,200
Phase-Stable Microwave Coax Series 103 (26.5 GHz) (50 Ω · DC–26.5 GHz)	21.50	50.0	77.0	1,500
Phase-Stable Microwave Coax Series 104 (18 GHz) (50 Ω · DC–18 GHz)	11.80	50.0	77.0	2,000
Phase-Stable Microwave Coax Series 104P (Flex 18G) (50 Ω · DC–18 GHz Stranded)	13.00	50.0	77.0	2,000
Phase-Stable Microwave Coax Series 104A (Armored) (50 Ω · DC–18 GHz Armored)	11.80	50.0	77.0	2,000
Phase-Stable Microwave Coax Series 106 (Low-Loss 18G) (50 Ω · DC–18 GHz Trunk)	5.60	50.0	77.0	2,500

– Characteristic impedance, propagation velocity, DC resistance at +20 °C, and dielectric withstand voltages verified per IEC 61196-1 / MIL-DTL-17 & ECSS-Q-ST-70 (Phase-Stable Microwave Coax).

Standards and approvals

- IEC 61196-1 / MIL-DTL-17 & ECSS-Q-ST-70 (Phase-Stable Microwave Coax)
- CE (2014/35/EU) & RoHS 3 (2015/863/EU) Compliant
- REACH SVHC Compliance Verified

Certifications

Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone
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Email
info@tebaoflex.com

Web
tebaoflex.com/cables/sucoflex-100-low-loss-phase-stable-microwave-test-aerospace-coaxial-cable

Typical values for this cable type, based on IEC 61196-1 / MIL-DTL-17 & ECSS-Q-ST-70 (Phase-Stable Microwave Coax). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.