

PSE400-40G-BF

40GHz High Frequency Phase Stable Coaxial Cable

TECHNICAL SPECIFICATION
Document No: SPEC-PSE400-40G-BF

Key Features & Overview

- Frequency Range:** DC to 40 GHz continuous operation.
- Phase Stability:** Excellent stability vs bending ($\pm 0.2^\circ/\text{GHz}$).
- Dielectric System:** Micro-porous LD-PTFE offering 76% VoP.
- Triple Shielding:** >90 dB screening effectiveness up to 40 GHz.
- Jacket Material:** High-reliability Blue FEP (-55°C to $+165^\circ\text{C}$).



Designed for critical RF interconnects, microwave test equipment, and radar subsystems requiring minimal insertion loss and strict phase tracking.

Structural Properties

Layer	Material	Construction (mm)	Nom. O.D. (mm)
Inner Conductor	Silver Plated Copper	1 / 0.91	0.91
Insulation	LD-PTFE (Low Density PTFE)	-	2.70
Inner Shield	Silver Plated Copper Strip	-	2.90
Interlayer	LD-PTFE	-	3.15
Outer Shield	Silver Plated Copper Wire Braid	-	3.56
Jacket	Blue FEP	-	4.00

Electrical Characteristics

Impedance	50 Ohm	Velocity of Propagation	76%
Max Operating Frequency	40 GHz	Capacitance	88 pF/m
Screening Effectiveness	> 90 dB	Dielectric Withstanding Voltage	1200 V DC
Phase Change vs Bending	$\pm 0.2^\circ/\text{GHz}$	Phase Change vs Temp (-45°C ~ $+85^\circ\text{C}$)	≤ 1500 PPM

Insertion Loss Formula: $IL = K1 * \sqrt{F_MHz} + K2 * F_MHz$ (dB/100m)
Constants: $K1 = 1.232579$, $K2 = 0.000462$

Mechanical & Environmental Properties

Min. Static Bending Radius	16.00 mm	Min. Dynamic Bending Radius	38.00 mm
Weight	0.039 kg/m	Operating Temperature	-55°C to $+165^\circ\text{C}$

Attenuation & Power Handling (@ 25°C Sea Level)

Frequency (MHz)	Nom. Attenuation (dB/100m)	Max Power Handling (W @ 40°C)
500	27.79	728
1000	39.44	513
2000	56.05	361
3000	68.90	294
6000	98.25	206
8000	113.94	178
10000	127.88	158
12400	142.98	142
18000	173.68	116
26500	212.89	95
40000	265.00	76

Replaceable Type Cross-Reference: Direct mechanical and electrical equivalent to [HUBER+SUHNER](#) SUCOFLEX 102.