PS510L-29G-F

Flexible Low Loss Phase Stable Coaxial Cable (29GHz, Solid Conductor)

- **Solid Inner Conductor:** 1.45mm Solid SPC for lowest insertion loss and structural consistency.
- **Frequency Range:** DC to 29.0 GHz with 50 Ohm nominal impedance.
- **LD-PTFE Dielectric:** Microporous PTFE dielectric achieving 83% velocity of propagation.
- **Dual Shielding & FEP Jacket:** Silver-plated copper tape + braid shielding (>90 dB) with Gray FEP jacket.

> **Direct Drop-in Replacement Compatibility:** The **PS510L-29G-F** is functionally and dimensionally equivalent to industry-standard 5.10mm (0.200") low-loss phase-stable coaxial cables including **IW 1501 / SF142** equivalents.

1. PHYSICAL & CONSTRUCTION SPECIFICATIONS

Construction Element	Material Specification	Construction (mm)	Nom. O.D. (mm)
Inner Conductor	Solid Silver Plated Copper (SPC)	1 / 1.45	1.45
Insulation Dielectric	Low-Density PTFE (LD-PTFE)	-	3.85
Inner Shield	Silver Plated Copper Strip	Helical Wrap	4.05
Outer Shield	Silver Plated Copper Braid Wire	Coverage ≥ 90%	4.50
Outer Jacket	Fluorinated Ethylene Propylene (Gray FEP)	-	5.10

2. MECHANICAL & ENVIRONMENTAL CHARACTERISTICS

Parameter	Specification Value	Parameter	Specification Value
Min. Bend Radius (Static)	25.0 mm	Cable Weight	0.065 kg/m
Min. Bend Radius (Dynamic)	50.0 mm	Operating Temperature	-55 ℃ to +165 ℃

3. ELECTRICAL PERFORMANCE PARAMETERS

Parameter	Value	Parameter	Value
Impedance	50 Ω	Dielectric Withstanding Voltage	2000 V DC
Capacitance	80 pF/m	Phase Change vs. Bending	±0.2 °/GHz
Velocity of Propagation (VP)	83%	Phase Change vs. Temperature	≤ 750 PPM (-45~+85℃)
Max. Operating Frequency	29.0 GHz	Screening Effectiveness	> 90 dB

4. ATTENUATION & POWER HANDLING DATA

Frequency (MHz)	Nom. Attenuation (@25℃, Sea Level) (dB/100m)	Max. Power Handling (@40℃, Sea Level) (W)
300	14.80	1600
500	19.20	1230
1000	27.40	860
3000	48.50	490
6000	70.30	340
8000	82.10	290
10000	92.60	255
12400	104.10	228
18000	128.00	185
20000	135.80	175
26500	159.20	149
29000	167.80	140

Insertion Loss Formula: `IL = K1 * sqrt(F_MHz) + K2 * F_MHz (dB/100m)` | *K1 = 0.841200, K2 = 0.000850*