Product Data Sheet **SCF12-50J**

1/2" CELLFLEX® Superflexible Foam-Dielectric Coaxial Cable

Product Description

CELLFLEX® 1/2" superflexible cable

Application: OEM jumpers, Main feed transitions to equipment, GPS lines

1/2" CELLFLEX® Superflexible Foam Dielectric Coaxial Cable

Features/Benefits

- **Low Attenuation**
  The low attenuation of CELLFLEX® coaxial cable results in highly efficient signal transfer in your RF system.
- **Complete Shielding**
  The solid outer conductor of CELLFLEX® coaxial cable creates a continuous RFI/EMI shield that minimizes system interference.
- **Low VSWR**
  Special low VSWR versions of CELLFLEX® coaxial cables contribute to low system noise.
- **Outstanding Intermodulation Performance**
  CELLFLEX® coaxial cable?s solid inner and outer conductors virtually eliminate intermods. Intermodulation performance is also confirmed with state-of-the-art equipment at the RFS factory.
- **High Power Rating**
  Due to their low attenuation, outstanding heat transfer properties and temperature stabilized dielectric materials, CELLFLEX® cable provides safe long term operating life at high transmit power levels.
- **Wide Range of Application**
  Typical areas of application are: feedlines for broadcast and terrestrial microwave antennas, wireless cellular, PCS and ESMR base stations, cabling of antenna arrays, and radio equipment interconnects.

Technical Features

Structure

Inner conductor:	Copper-Clad Aluminum Wire	[mm (in)]	3.56 (0.14)
Dielectric:	Foam Polyethylene	[mm (in)]	9.3 (0.366)
Outer conductor:	Corrugated Copper	[mm (in)]	12.3 (0.48)
Jacket:	Polyethylene, PE	[mm (in)]	13.75 (0.54)

Mechanical Properties

Weight, approximately	[kg/m (lb/ft)]	0.17 (0.11)
Minimum bending radius, single bending	[mm (in)]	
Minimum bending radius, repeated bending	[mm (in)]	32 (1.3)
Bending moment	[Nm (lb-ft)]	1.8 (1.33)
Max. tensile force	[N (lb)]	650 (146)
Recommended / maximum clamp spacing	[m (ft)]	0.3 / 0.3 (1 / 1)

Electrical Properties

Characteristic impedance	[Ω]	50 +/- 1
Relative propagation velocity	[%]	77
Capacitance	[pF/m (pF/ft)]	86 (26)
Inductance	[µH/m (µH/ft)]	0.215 (0.066)
Max. operating frequency	[GHz]	10.6
Jacket spark test RMS	[V]	5000
Peak power rating	[kW]	24
RF Peak voltage rating	[V]	1550
DC-resistance inner conductor	[Ω/km (Ω/1000ft)]	2.9 (0.88)
DC-resistance outer conductor	[Ω/km (Ω/1000ft)]	4.5 (1.37)

Recommended Temperature Range

Storage temperature	[°C (°F)]	-70 to 85 (-94 to 185)
Installation temperature	[°C (°F)]	-40 to 60 (-40 to 140)
Operation temperature	[°C (°F)]	-50 to 85 (-58 to 185)

Other Characteristics

Fire Performance: Halogene Free

VSWR Performance: Standard — Contact RFS for your VSWR performance specification for your required frequency band.

Other Options: Phase stabilized and phase matched cables and assemblies are available upon request.

Frequency	Attenuation		Power
[MHz]	[dB/100m]	[dB/100ft]	[kW]
0.5	0.221	0.0673	24.0
1.0	0.312	0.0952	22.6
1.5	0.383	0.117	18.4
2.0	0.442	0.135	16.0
10	0.995	0.303	7.10
20	1.41	0.430	5.01
30	1.73	0.529	4.08
50	2.25	0.686	3.14
88	3.01	0.916	2.35
100	3.21	0.978	2.20
108	3.34	1.02	2.11
150	3.96	1.21	1.78
174	4.27	1.30	1.65
200	4.60	1.40	1.53
300	5.68	1.73	1.24
400	6.61	2.01	1.07
450	7.04	2.14	1.00
500	7.44	2.27	0.949
512	7.53	2.30	0.938
600	8.20	2.50	0.861
700	8.91	2.71	0.792
750	9.24	2.82	0.764
800	9.57	2.92	0.738
824	9.72	2.96	0.726
894	10.2	3.10	0.692
900	10.2	3.11	0.692
925	10.4	3.16	0.679
960	10.6	3.22	0.666
1000	10.8	3.29	0.654
1250	12.2	3.72	0.579
1400	13.0	3.96	0.543
1500	13.5	4.11	0.523
1700	14.5	4.41	0.487
1800	14.9	4.55	0.474
2000	15.8	4.82	0.447
2100	16.3	4.96	0.433
2200	16.7	5.09	0.423
2400	17.5	5.35	0.403
2500	17.9	5.47	0.394
2600	18.4	5.59	0.384
2700	18.8	5.72	0.376
3000	19.9	6.07	0.355
3500	21.8	6.63	0.324
4000	23.5	7.16	0.300
5000	26.8	8.16	0.263
6000	29.8	9.09	0.237
7000	32.7	9.97	0.216
8000	35.5	10.8	0.199
9000	38.1	11.6	0.185
10000	40.6	12.4	0.174

Attenuation at 20°C (68°F) cable temperature
Mean power rating at 40°C (104°F) ambient temperature