Product Data Sheet **SCF14-50J**

1/4" CELLFLEX® Superflexible Foam-Dielectric Coaxial Cable

Product Description

CELLFLEX® 1/4" superflexible cable

Application: In Building, Wireless Communication, In TunnelHF Defense, Microwave, Mobile Radio

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)]	1.9 (0.075)
Dielectric:		[mm (in)]	4.3 (0.170)
Outer conductor:	Corrugated Copper	[mm (in)]	6.5 (0.26)
Jacket:	Polyethylene, PE	[mm (in)]	7.8 (0.31)

Mechanical Properties

Weight, approximately	[kg/m (lb/ft)]	0.07 (0.05)
Minimum bending radius, single bending	[mm (in)]	
Minimum bending radius, repeated bending	[mm (in)]	25 (1.0)
Bending moment	[Nm (lb-ft)]	0.7 (0.5)
Flat plate crush strength	[N/mm (lb/in)]	18.4 (100)
Max. tensile force	[N (lb)]	600 (135)
Recommended / maximum clamp spacing	[m (ft)]	0.20 / 0.20 (0.67 / 0.67)

Electrical Properties

Characteristic impedance	[Ω]	50 +/- 1
Relative propagation velocity	[%]	82
Capacitance	[pF/m (pF/ft)]	82.0 (25.0)
Inductance	[µH/m (µH/ft)]	0.207 (0.063)
Max. operating frequency	[GHz]	20.4
Jacket spark test RMS	[V]	5000
Peak power rating	[kW]	5.5
RF Peak voltage rating	[V]	740
DC-resistance inner conductor	[Ω/km (Ω/1000ft)]	10.40 (3.17)
DC-resistance outer conductor	[Ω/km (Ω/1000ft)]	6.60 (2.01)

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 [dB (VSWR)] 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	0.401	0.122	5.50
1.0	0.568	0.173	5.50
1.5	0.696	0.212	5.50
2.0	0.804	0.245	5.50
10	1.81	0.550	3.66
20	2.56	0.781	2.58
30	3.15	0.960	2.10
50	4.08	1.24	1.62
88	5.45	1.66	1.21
100	5.82	1.77	1.14
108	6.06	1.85	1.09
150	7.17	2.19	0.922
174	7.75	2.36	0.854
200	8.33	2.54	0.794
300	10.3	3.13	0.643
400	12.0	3.65	0.553
450	12.7	3.88	0.519
500	13.5	4.10	0.491
512	13.6	4.15	0.485
600	14.8	4.52	0.446
700	16.1	4.91	0.411
800	17.3	5.27	0.382
824	17.6	5.35	0.376
894	18.4	5.59	0.360
900	18.4	5.61	0.359
925	18.7	5.70	0.354
960	19.1	5.81	0.347
1000	19.5	5.94	0.339
1250	22.0	6.71	0.300
1500	24.3	7.41	0.272
1700	26.1	7.94	0.254
1800	26.9	8.20	0.246
2000	28.5	8.69	0.232
2100	29.3	8.93	0.226
2200	30.1	9.2	0.220
2400	31.6	9.6	0.209
3000	35.8	10.9	0.185
3500	39.1	11.9	0.169
4000	42.2	12.9	0.157
5000	48.0	14.6	0.138
6000	53.4	16.3	0.124
7000	58.6	17.8	0.113
8000	63.4	19.3	0.104
9000	68.1	20.8	0.097
10000	72.6	22.1	0.091
12000	81	24.8	0.081
14000	89	27.2	0.074
16000	97	29.6	0.068
18000	105	31.9	0.063
20000	112	34.2	0.059
20400	113	34.6	0.058

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