CABLE ASSEMBLIES

Hand-formable cable .141 (Jacketed)



P/N: ST291 866 378

APPLICATION NOTE

This jacketed cable will be used instead of standard unjacketed .141 for applications requiring electrical insulation and/or protection against environmental aggressions (chemical, humidity...).

The FEP jacket allows this cable to be used under severe thermal conditions.

The jacket slightly increases the spring back effect.

CONSTRUCTION / DIMENSIONS

	Material	mm	Inches
Center conductor	Solid SPC[1]	0.92	0.036
Dielectric	Solid PTFE[2]	2.98	0.117
Inner shield	TS[3] braid	3.50	0.138
Outer shield	-	-	-
Jacket	Black FEP[4]	4.05	0.159

ELECTRICAL CHARACTERISTICS

Characteristic impedance	50Ω ± 2Ω	
Operating frequency range	DC - 20 GHz	
Shielding effectiveness	90 dB	
Voltage withstanding	5 000 V rms	
Peak power	3.4 kW	
Capacitance	97.5 pF / m	29.5 pF / ft
Velocity of propagation	70 % (4.8 ns / m)	

MECHANICAL CHARACTERISTICS

Recommended minimum bending radius	11[5] / 33[6] mm	0.43[5] / 1.3[6] inch
Weight	38 g / m	0.0254 lbs / ft

ENVIRONMENTAL CHARACTERISTICS

Operating temperature range	-65 / +150 °C	-85 / +302 °F
Fire resistance	Yes (CSA FT6 / IEC 332-2)	
Halogen free	No	

FREQUENCY / ATTENUATION (typ.) / CW MAX POWER (sea level / 25 °C)

GHz	dB / m	dB / ft	Watts
1.0	0.43	0.13	315
2.0	0.63	0.19	223
3.0	0.80	0.24	182
6.0	1.20	0.36	129
8.0	1.42	0.43	111
10.0	1.63	0.49	100
12.4	1.87	0.57	89
18.0	2.37	0.72	74
20.0	2.54	0.77	70
Attenuation calculation (dB/m)	(0.390 x √f GHz) + (0.04 x f GHz)		
Power calculation (W)	315 / √f GHz		

[1] SPC = Silver Plated Copper
[2] PTFE = PolyTetraFluoroEthylene
[3] TS = Tin Soaked
[4] FEP = Fluorinated Ethylene Propylene
[5] one time
[6] repeated

Semi-rigid cable .141 (RG402 - KS2)



P/N: ST291 860 001 (MIL-C-17/130-RG402) (NF-C-93/551-KS2)

APPLICATION NOTE

RG402 is one of the most popular semi-rigid RG cables.

RG402 will be preferred to flexible RG142 for applications requiring high frequency range, low attenuation, high screening effectiveness, very small bending radius and/or no spring back effect.

CONSTRUCTION / DIMENSIONS

	Material	mm	Inches
Center conductor	Solid SPCCS[1]	0.92	0.036
Dielectric	Solid PTFE[2]	2.98	0.117
Inner shield	Copper tubing	3.58	0.141
Outer shield	-	-	-
Jacket	-	-	-

ELECTRICAL CHARACTERISTICS

Characteristic impedance	50Ω ± 1Ω	
Operating frequency range	DC - 20 GHz	
Shielding effectiveness	110 dB	
Voltage withstanding	5 000 V rms	
Peak power	3.4 kW	
Capacitance	89 pF / m	27 pF / ft
Velocity of propagation	70 % (4.8 ns / m)	

MECHANICAL CHARACTERISTICS

Recommended minimum bending radius	6.35 mm	0.250 inch
Weight	46 g / m	0.0309 lbs / ft

ENVIRONMENTAL CHARACTERISTICS

Operating temperature range	-40 / +125 °C	-40 / +257 °F
Fire resistance	N/A	
Halogen free	No	

FREQUENCY / ATTENUATION (typ.) / CW MAX POWER (sea level / 25 °C)

GHz	dB / m	dB / ft	Watts
1.0	0.34	0.10	315
2.0	0.50	0.15	223
3.0	0.64	0.19	182
6.0	0.97	0.30	129
8.0	1.17	0.35	111
10.0	1.35	0.41	100
12.4	1.55	0.47	89
18.0	1.99	0.60	74
20.0	2.14	0.65	70
Attenuation calculation (dB/m)	(0.30 x √f GHz) + (0.04 x f GHz)		
Power calculation (W)	315 / √f GHz		

[1] SPCCS = Silver Plated Copper Covered Steel
[2] PTFE = PolyTetraFluoroEthylene

Note:
Typical attenuation for a couple of connectors (dB) = 0.045 x √f (GHz)