CABLE ASSEMBLIES

Semi-rigid cable .085 (Aluminum)



P/N: ST291 844 187 (MIL-C-17/133-00013)

APPLICATION NOTE

Based on RG405 standard, this cable will be selected for application requiring easy conformability and/or application requiring reduced weight.

Due to the aluminum outer conductor, this cable can be hand formed with exceptional ease with no spring back effect.

The cable can be reshaped, eliminating the need for costly drawings.

The outer conductor material (aluminum) slightly increases the attenuation compared to standard RG405.

CONSTRUCTION / DIMENSIONS

	Material	mm	Inches
Center conductor	Solid SPCCS[1]	0.51	0.020
Dielectric	Solid PTFE[2]	1.68	0.066
Inner shield	TPAl[2] tubing	2.20	0.087
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	1.9 kW	
Capacitance	100 pF / m	30 pF / ft
Velocity of propagation	70 % (4.8 ns / m)	

MECHANICAL CHARACTERISTICS

Recommended minimum bending radius	1.8 mm	0.07 inch
Weight	10.7 g / m	0.0072 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	0.68	0.20	100
2.0	0.98	0.30	71
3.0	1.22	0.37	58
6.0	1.80	0.54	41
8.0	2.12	0.64	35
10.0	2.41	0.73	32
12.4	2.73	0.83	28
18.0	3.41	1.03	24
20.0	3.64	1.10	22
Attenuation calculation (dB/m)	(0.635 x √f GHz) + (0.04 x f GHz)		
Power calculation (W)	100 / √f GHz		

[1] SPCCS = Silver Plated Copper Covered Steel
[2] PTFE = PolyTetraFluoroEthylene
[3] TPAl = Tin Plated Aluminum

Hand-formable cable .141 (Unjacketed)



P/N: ST291 864

APPLICATION NOTE

This handformable cable is an alternative to RG402 for applications requiring an easy routing on equipment.

Due to the outer conductor construction, this cable can be hand formed with exceptional ease with no spring back effect.

The cable can be reshaped, eliminating the need for costly drawings.

Attenuation is a little bit higher than RG402 but the temperature range is wider.

CONSTRUCTION / DIMENSIONS

	Material	mm	Inches
Center conductor	Solid SPCCS[1]	0.92	0.036
Dielectric	Solid PTFE[2]	2.95	0.116
Inner shield	Copper tape	-	-
Outer shield	TS[3] braid	3.50	0.138
Jacket	-	-	-

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	6.4[4] / 19[5] mm	0.25[4] / 0.75[5] inch
Weight	33 g / m	0.0221 lbs / ft

ENVIRONMENTAL CHARACTERISTICS

Operating temperature range	-65 / +150 °C	-85 / +302 °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	0.39	0.12	315
2.0	0.57	0.17	223
3.0	0.72	0.22	182
6.0	1.09	0.33	129
8.0	1.30	0.39	111
10.0	1.49	0.45	100
12.4	1.71	0.52	89
18.0	2.18	0.66	74
20.0	2.34	0.71	70
Attenuation calculation (dB/m)	(0.345 x √f GHz) + (0.04 x f GHz)		
Power calculation (W)	315 / √f GHz		

[1] SPCCS = Silver Plated Copper Covered Steel
[2] PTFE = PolyTetraFluoroEthylene
[3] TS = Tin Soaked
[4] one time
[5] repeated

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