

SUCOFORM®

The handformable alternative to SEMI RIGID

Content

Product description	45
Features and benefits	45
Overview of common SUCOFORM® cable types	45
Product specification of	
SUCOFORM cable type SM 86	46
SUCOFORM cable type SM 86 PE	48
SUCOFORM cable type SM 86 FEP	50
SUCOFORM cable type SM 141	52
SUCOFORM cable type SM 141 PE	54
SUCOFORM cable type SM 141 FEP	56
SUCOFORM cable type SM 250	58
SUCOFORM cable type SM 250 FEP	60
Further available SUCOFORM® products	62
Suitable connectors	63

SUCOFORM®

The handformable alternative to SEMI RIGID

Product description

SUCOFORM microwave coaxial cables offer distinct mechanical advantages over SEMI RIGID cables. They are based on the same design as the standard PTFE-insulated SEMI RIGID cables, but have a tin-soaked copper braid for the outer conductor, giving them outstanding hand-formability. These cables combine the excellent characteristics of SEMI RIGID cables with those of flexible coaxial cables. Thanks to their small bending radii, they allow space-saving routing and packaging.



SUCOFORM

Features and benefits

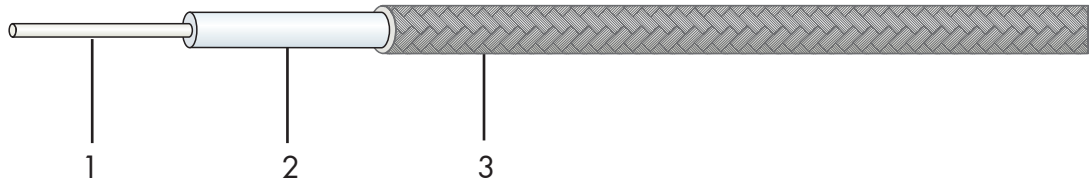
- Excellent properties: low loss, high screening effectiveness, high operating frequency, high temperature range
- Due to the high phase stability over every production run, SUCOFORM is especially suitable for delay lines
- Good flexibility: easy hand forming without tooling; fits into the smallest systems
- Comprehensive connector range; use of standard SEMI RIGID connectors
- Quick and easy assembly
- Available in long lengths and various versions

SUHNER type	Order code	Operating frequency (GHz)	Temperature range		Outer dia. (mm)	Nom. attenuation 18 GHz, 25°C (dB/m)	Bending radii		More information see page
			minimum (°C)	maximum (°C)			static (mm)	dyn. (mm)	
SM 86	22511613	18	-65	+165	2.10	3.4	6	20	46
SM 86 PE	22511631	18	-40	+85	3.20	3.4	10	40	48
SM 86 FEP	22511942	18	-65	+165	2.50	3.4	6	20	50
SM 141	22511925	18	-65	+165	3.58	2.2	8	40	52
SM 141 PE	22511632	18	-40	+85	4.60	2.2	15	50	54
SM 141 FEP	22511944	18	-65	+165	4.10	2.2	8	40	56
SM 250	22512136	18	-65	+165	6.05	1.4	30	120	58
SM 250 FEP	22512260	18	-65	+165	6.70	1.4	30	120	60

SUCOFORM® SM 86

Order code 22511613

Cable design



	Description	Material	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	StCuAg	0.53 mm
2. Dielectric	Solid PTFE	PTFE	1.65 mm
3. Outer conductor	Tin soaked copper braid	CuSn	2.10 mm
Marking	SUHNER SUCOFORM 86 (Batch no.)		

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	95 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.6283	coefficient b 0.0400
Max. attenuation*	coefficient a	0.6912	coefficient b 0.0440
Max. operating voltage	1.5 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

*Attenuation calculation

$$\alpha_{25} = a \cdot \sqrt{f}(\text{GHz}) + b \cdot f(\text{GHz}) \quad (\text{dB/m})$$

General cable data

Temperature range	-65...+165 °C
Weight	1.5 kg/100m
Min. bending radius static	6 mm
Min. bending radius repeated	20 mm

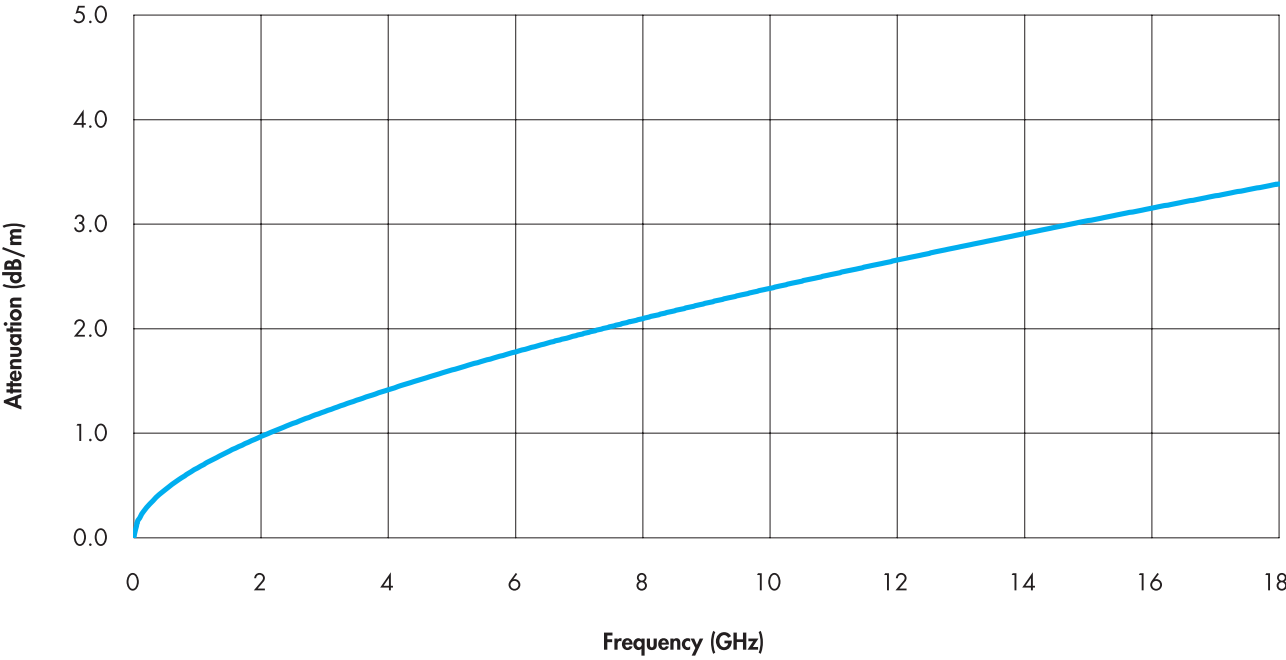
Suitable connectors

Cable group (please refer to pages 63 ff)	Y11
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SUCOFORM[®] SM 86

Cable attenuation

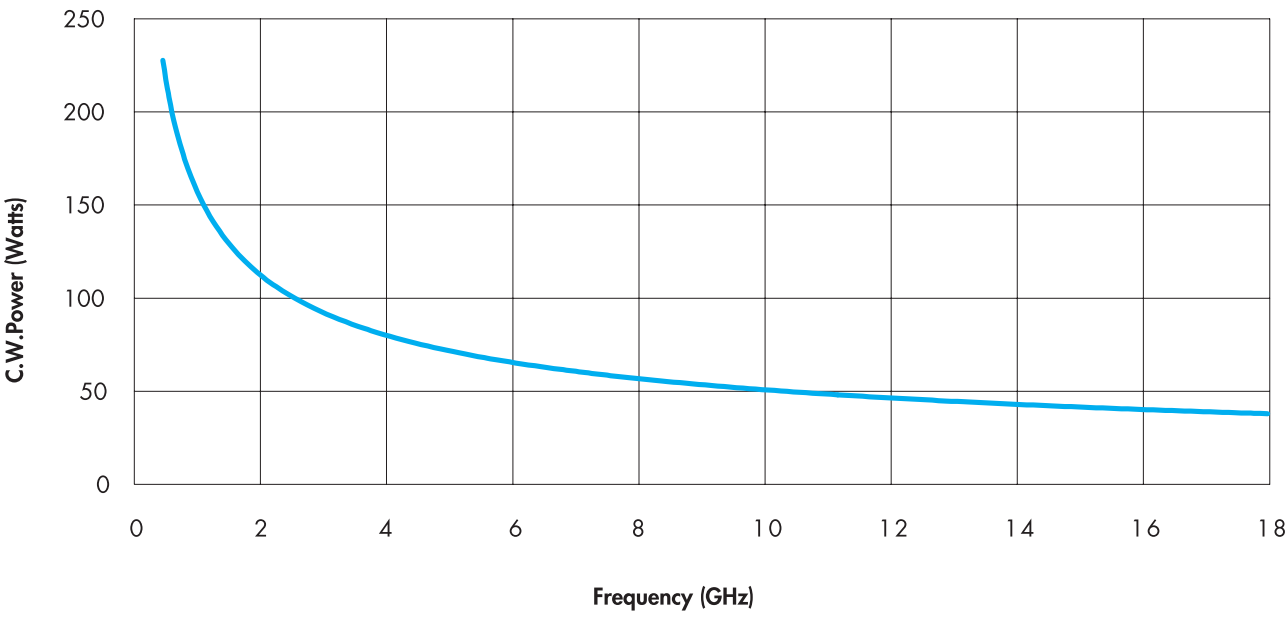
Nominal values @ +25 °C ambient temperature



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Power handling

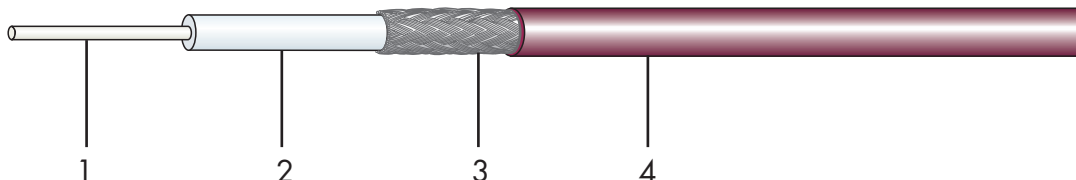
Maximum values @ +40 °C ambient temperature and sea level



SUCOFORM® SM 86 PE

Order code 22511631

Cable design



	Description	Material	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	StCuAg	0.53 mm
2. Dielectric	Solid PTFE	PTFE	1.65 mm
3. Outer conductor	Tin soaked copper braid	CuSn	2.10 mm
4. Jacket	Polyethylene, red	PE	3.20 mm
Marking	SUHNER SUCOFORM 86 PE (Batch no.)		

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	95 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.6283	coefficient b 0.0400
Max. attenuation*	coefficient a	0.6912	coefficient b 0.0440
Max. operating voltage	1.5 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

*Attenuation calculation

$$\alpha_{25} = a \cdot \sqrt{f}(\text{GHz}) + b \cdot f(\text{GHz}) \quad (\text{dB/m})$$

General cable data

Temperature range	-40...+85 °C
Weight	1.7 kg/100m
Min. bending radius static	10 mm
Min. bending radius repeated	40 mm

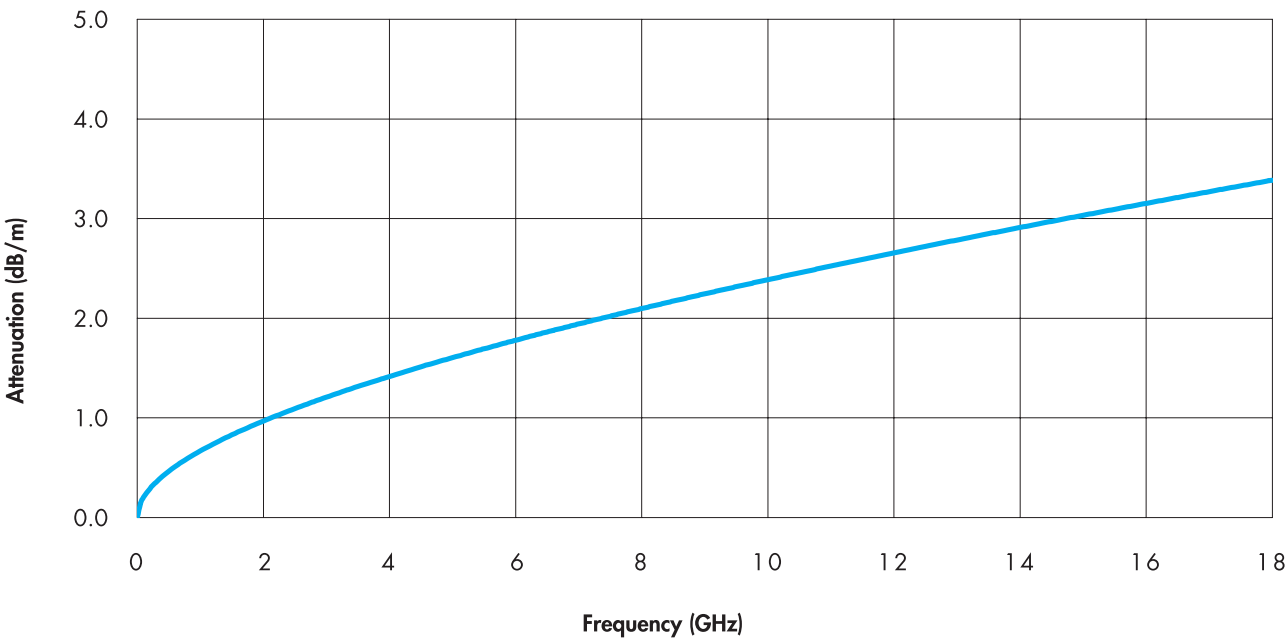
Suitable connectors

Cable group (please refer to pages 63 ff)	Y11
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SUCOFORM® SM 86 PE

Cable attenuation

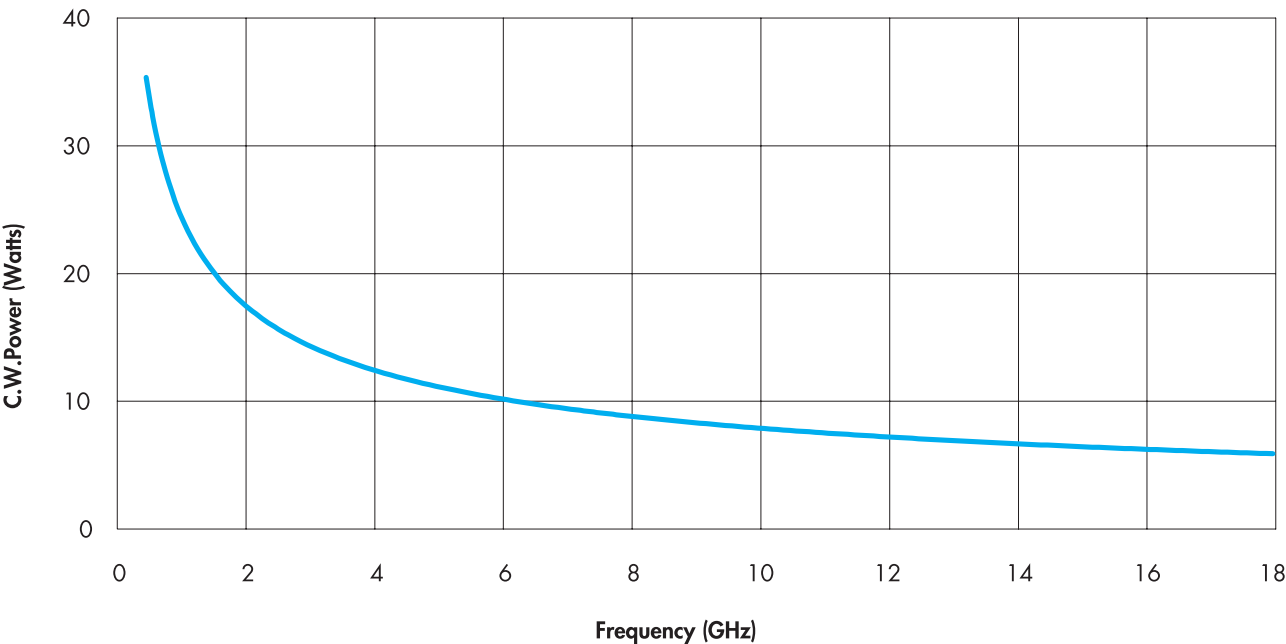
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power handling

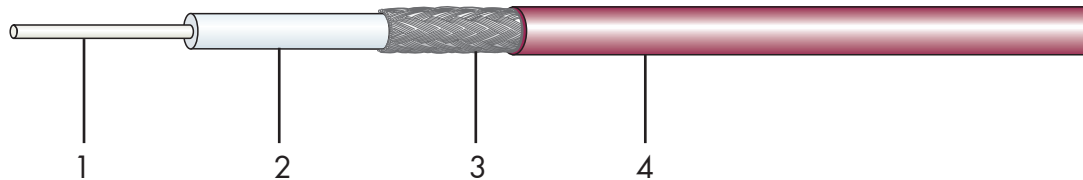
Maximum values @ +40 °C ambient temperature and sea level



SUCOFORM® SM 86 FEP

Order code 22511942

Cable design



	Description	Material	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	StCuAg	0.53 mm
2. Dielectric	Solid PTFE	PTFE	1.65 mm
3. Outer conductor	Tin soaked copper braid	CuSn	2.10 mm
4. Jacket	Fluoroethylenepropylene, red	FEP	2.50 mm
Marking	SUHNER SUCOFORM 86 FEP (Batch no.)		

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	95 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.6283	coefficient b 0.0400
Max. attenuation*	coefficient a	0.6912	coefficient b 0.0440
Max. operating voltage	1.5 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

*Attenuation calculation

$$a_{25} = a \cdot \sqrt{f}(\text{GHz}) + b \cdot f(\text{GHz}) \quad (\text{dB/m})$$

General cable data

Temperature range	-65...+165 °C
Weight	1.8 kg/100m
Min. bending radius static	6 mm
Min. bending radius repeated	20 mm

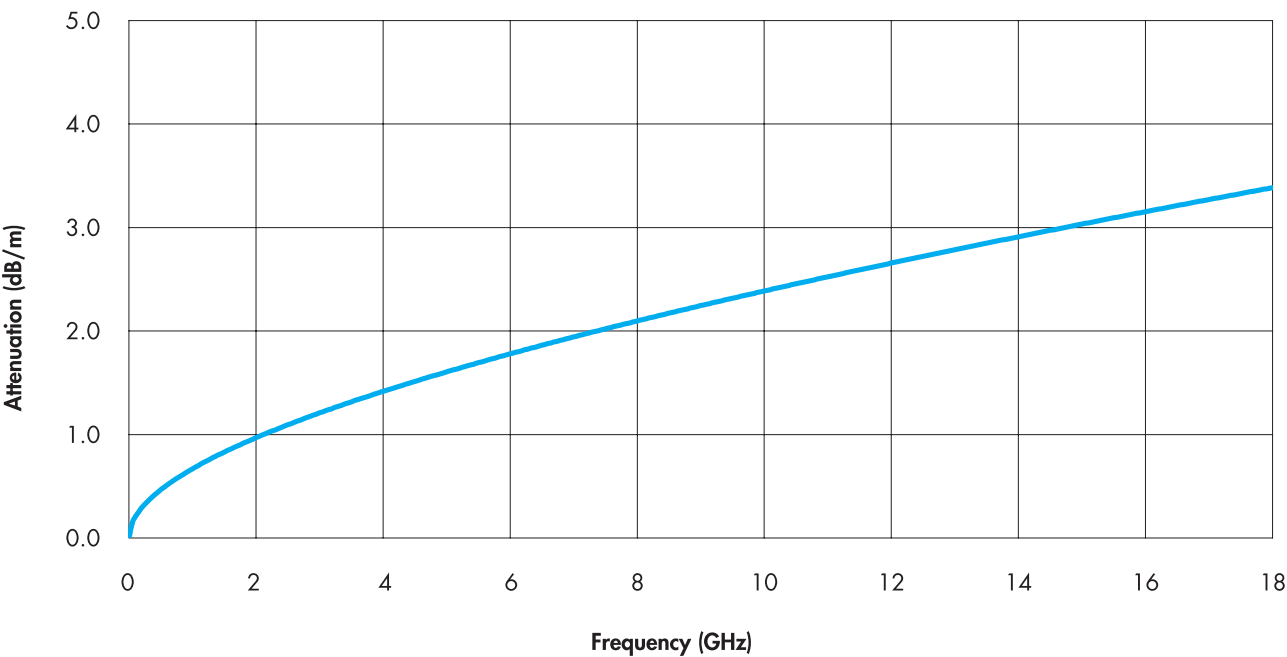
Suitable connectors

Cable group (please refer to pages 63 ff)	Y11
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SUCOFORM® SM 86 FEP

Cable attenuation

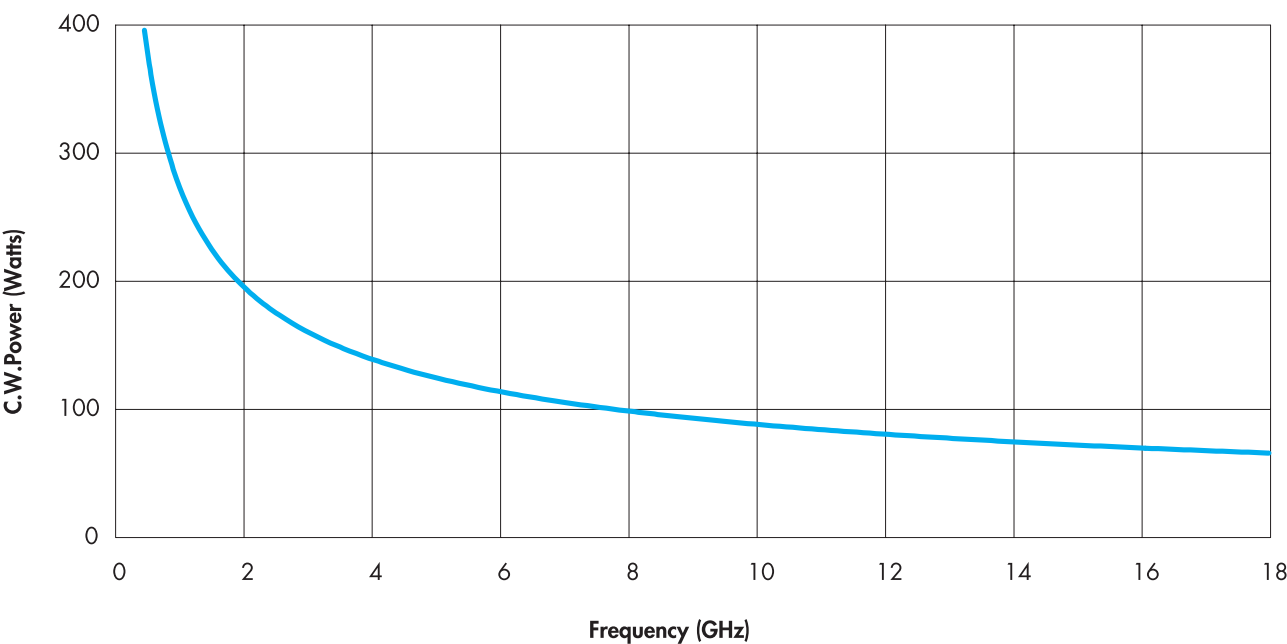
Nominal values @ +25 °C ambient temperature



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Power handling

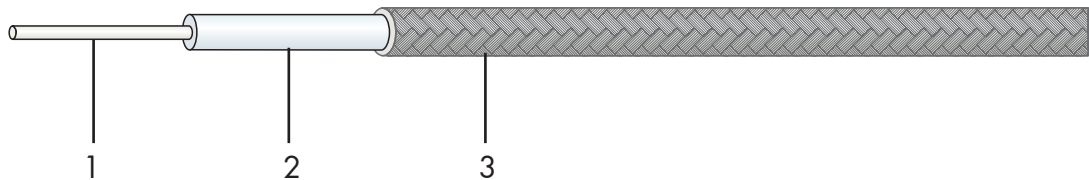
Maximum values @ +40 °C ambient temperature and sea level



SUCOFORM® SM 141

Order code 22511925

Cable design



	Description	Material	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	StCuAg	0.95 mm
2. Dielectric	Solid PTFE	PTFE	2.95 mm
3. Outer conductor	Tin soaked copper braid	CuSn	3.58 mm
Marking	SUHNER SUCOFORM 141 (Batch no.)		

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	94 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.3631	coefficient b 0.0377
Max. attenuation*	coefficient a	0.3995	coefficient b 0.0415
Max. operating voltage	1.9 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

*Attenuation calculation

$$a_{25} = a \cdot \sqrt{f} \text{ (GHz)} + b \cdot f \text{ (GHz)} \quad (\text{dB/m})$$

General cable data

Temperature range	-65...+165 °C
Weight	3.8 kg/100m
Min. bending radius static	8 mm
Min. bending radius repeated	40 mm

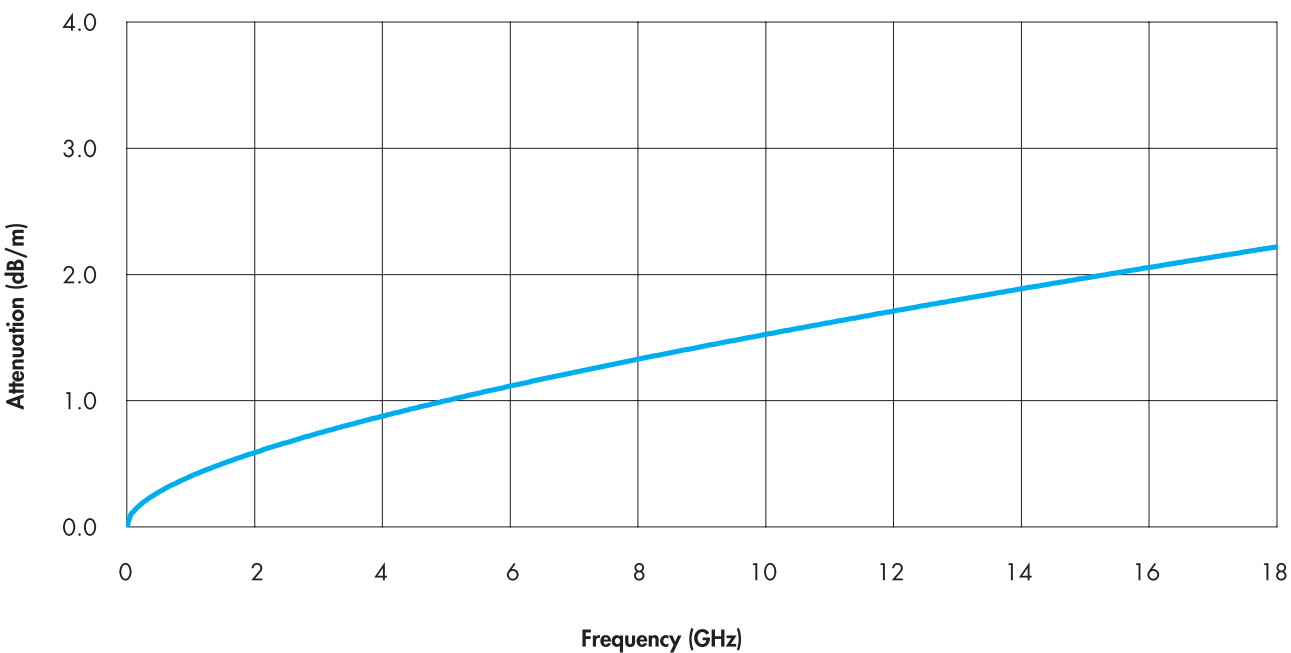
Suitable connectors

Cable group (please refer to pages 63 ff)	Y12
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SUCOFORM[®] SM 141

Cable attenuation

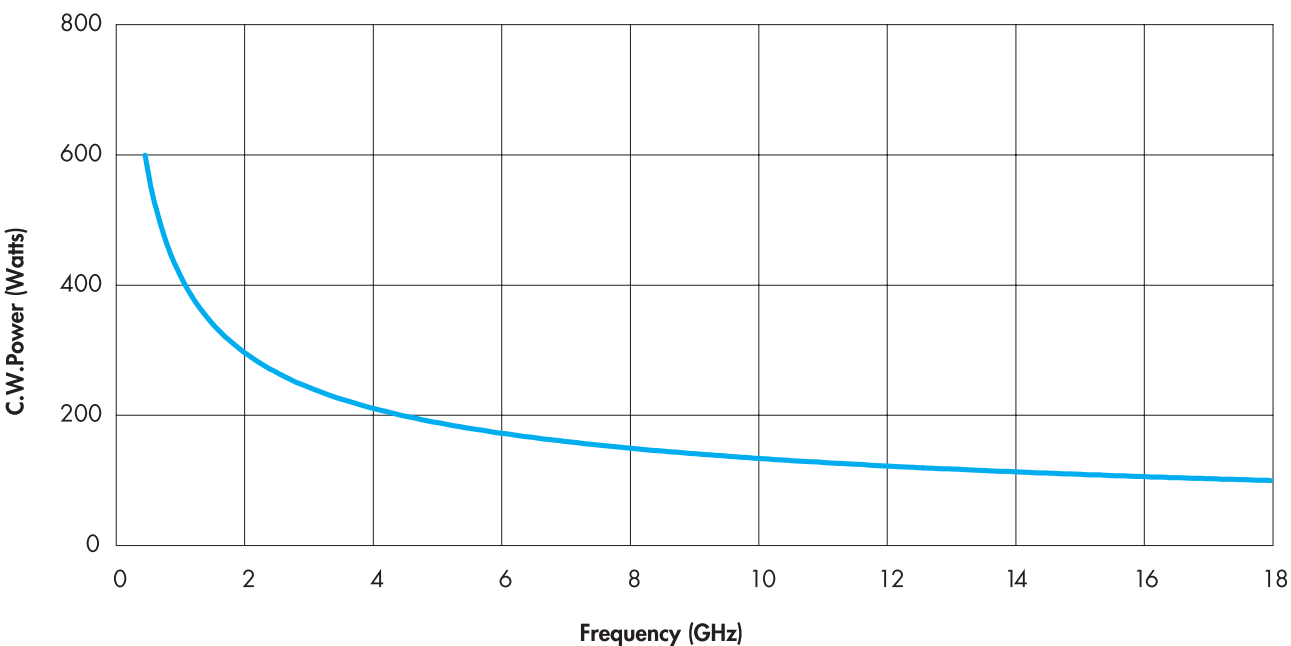
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power handling

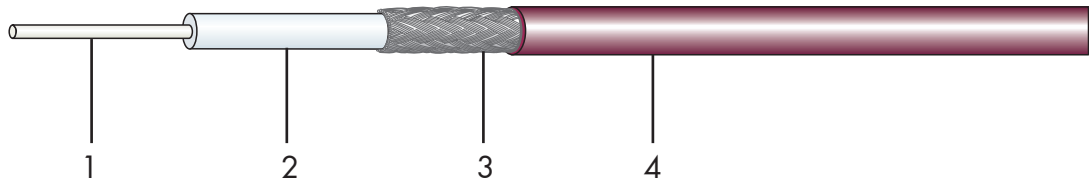
Maximum values @ +40 °C ambient temperature and sea level



SUCOFORM® SM 141 PE

Order code 22511632

Cable design



	Description	Material	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	StCuAg	0.95 mm
2. Dielectric	Solid PTFE	PTFE	2.95 mm
3. Outer conductor	Tin soaked copper braid	CuSn	3.58 mm
4. Jacket	Polyethylene, red	PE	4.60 mm
Marking	SUHNER SUCOFORM 141 PE (Batch no.)		

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	94 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.3631	coefficient b 0.0377
Max. attenuation*	coefficient a	0.3995	coefficient b 0.0415
Max. operating voltage	1.9 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

*Attenuation calculation

$$\alpha_{25} = a \cdot \sqrt{f} \text{ (GHz)} + b \cdot f \text{ (GHz)} \quad (\text{dB/m})$$

General cable data

Temperature range	-40...+85 °C
Weight	4.7 kg/100m
Min. bending radius static	15 mm
Min. bending radius repeated	50 mm

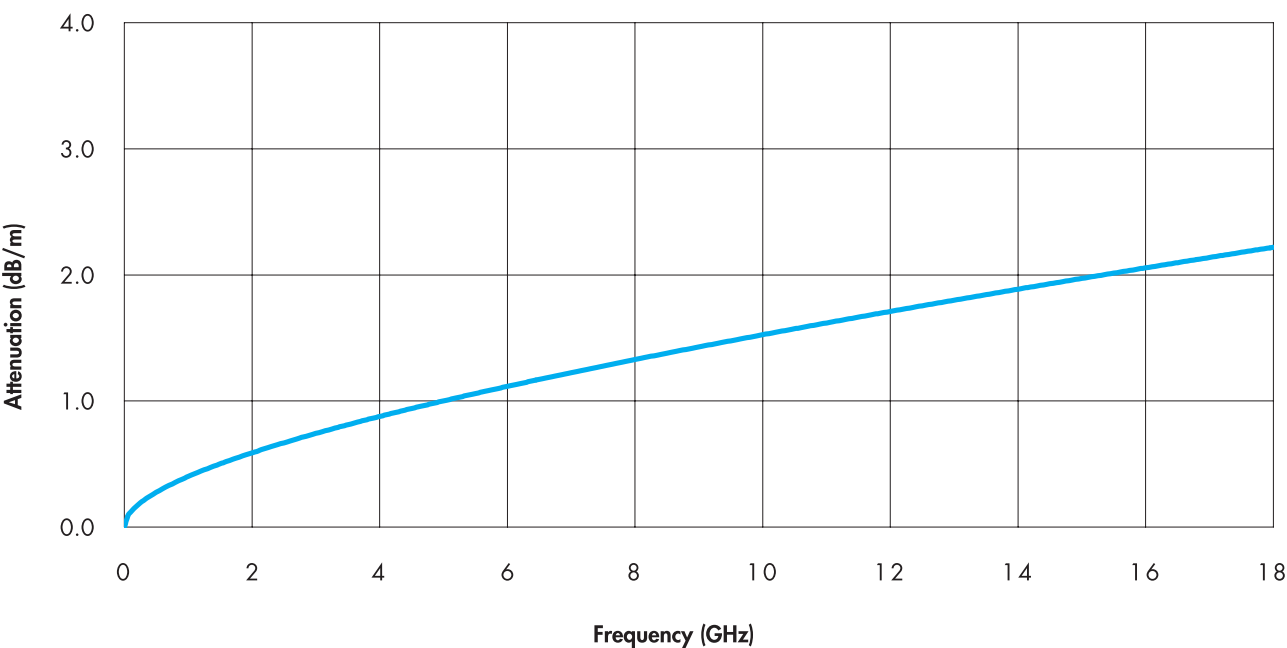
Suitable connectors

Cable group (please refer to pages 63 ff)	Y12
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SUCOFORM[®] SM 141 PE

Cable attenuation

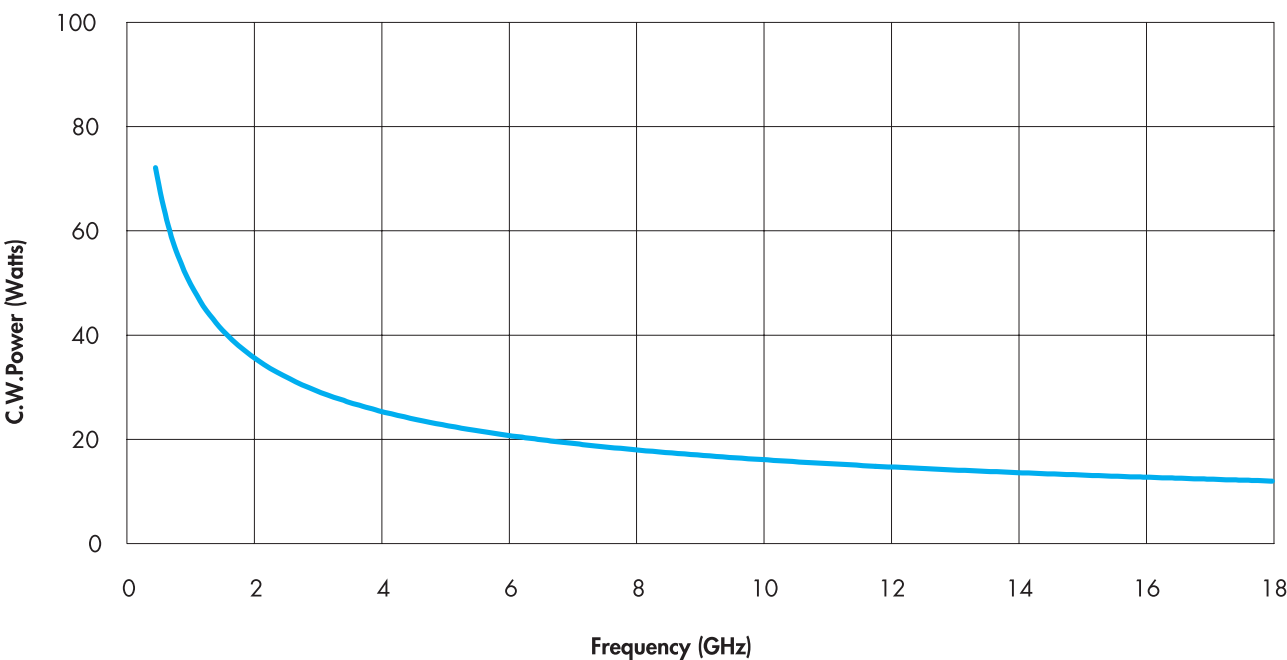
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power handling

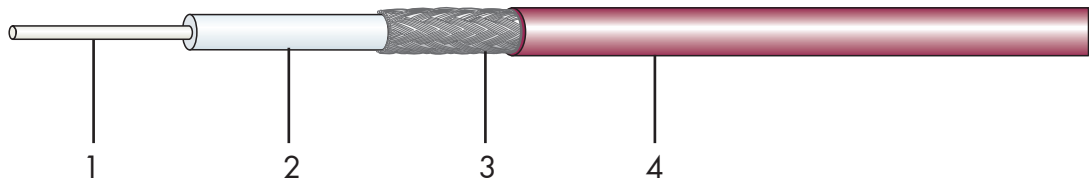
Maximum values @ +40 °C ambient temperature and sea level



SUCOFORM® SM 141 FEP

Order code 22511944

Cable design



	Description	Material	Diameter
1. Centre conductor	Solid silver-plated copper clad-steel wire	StCuAg	0.95 mm
2. Dielectric	Solid PTFE	PTFE	2.95 mm
3. Outer conductor	Tin soaked copper braid	CuSn	3.58 mm
4. Jacket	Fluoroethylenepropylene, red	FEP	4.10 mm
Marking	SUHNER SUCOFORM 141 FEP (Batch no.)		

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18.0 GHz		
Capacitance	94 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.3631	coefficient b 0.0377
Max. attenuation*	coefficient a	0.3995	coefficient b 0.0415
Max. operating voltage	1.9 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

*Attenuation calculation

$$a_{25} = a \cdot \sqrt{f} \text{ (GHz)} + b \cdot f \text{ (GHz)} \quad (\text{dB/m})$$

General cable data

Temperature range	-65...+165 °C
Weight	4.7 kg/100m
Min. bending radius static	8 mm
Min. bending radius repeated	40 mm

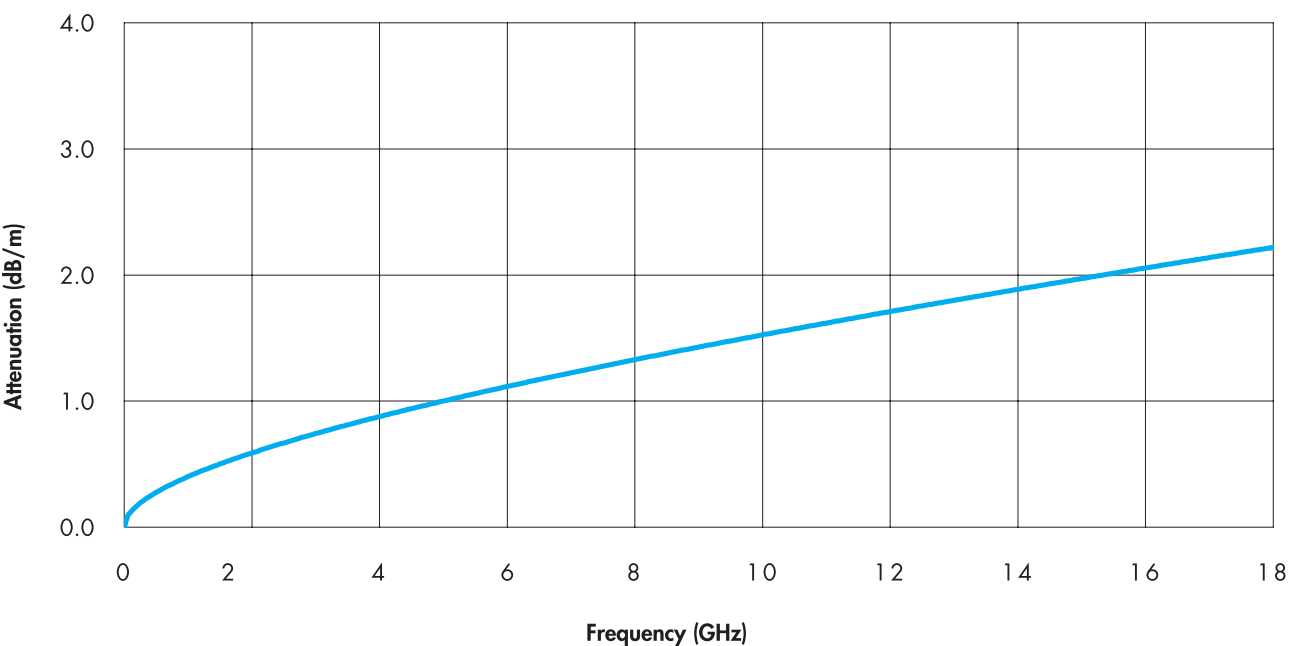
Suitable connectors

Cable group (please refer to pages 63 ff)	Y12
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SUCOFORM[®] SM 141 FEP

Cable attenuation

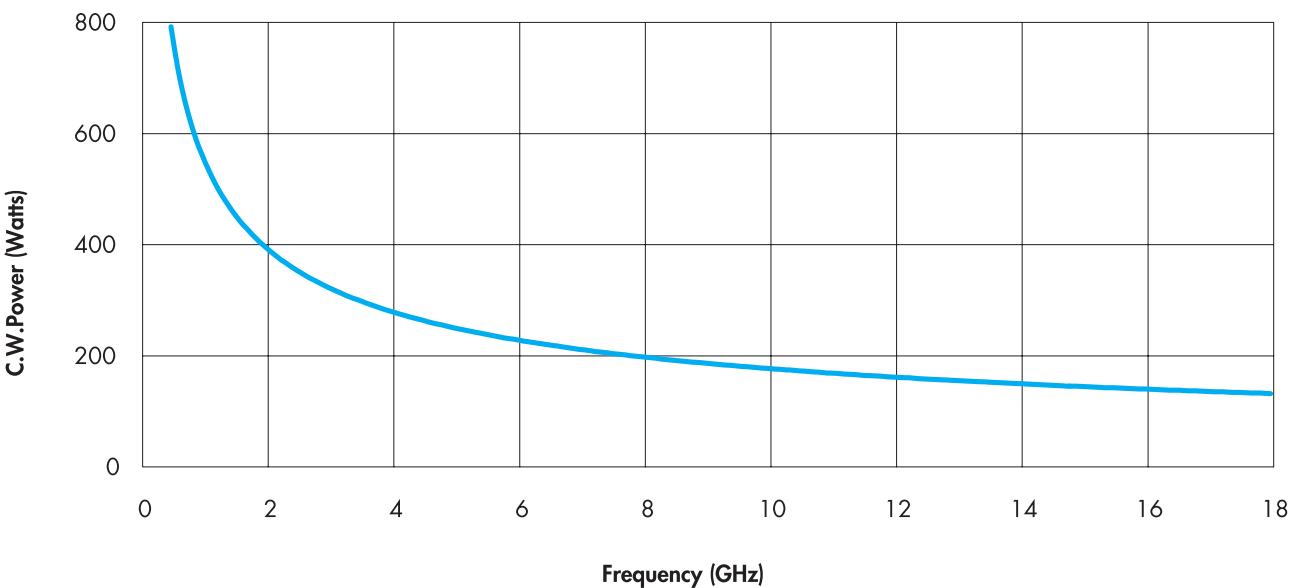
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power handling

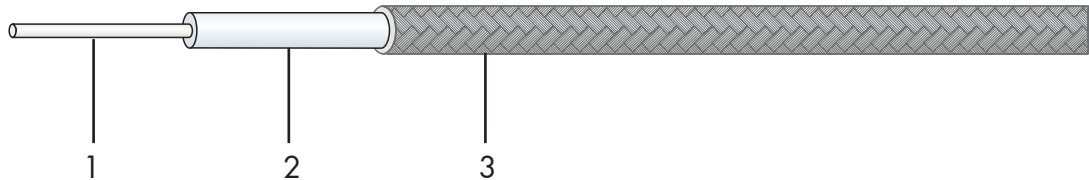
Maximum values @ +40 °C ambient temperature and sea level



SUCOFORM® SM 250

Order code 22512136

Cable design



	Description	Material	Diameter
1. Centre conductor	Solid silver-plated copper wire	CuAg	1.64 mm
2. Dielectric	Solid PTFE	PTFE	5.27 mm
3. Outer conductor	Tin soaked copper braid	CuSn	6.05 mm
Marking	SUHNER SUCOFORM 250 (Batch no.)		

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	95 pF/m		
Velocity of Propagation	71 %		
Time Delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.2100	coefficient b 0.0310
Max. attenuation*	coefficient a	0.2310	coefficient b 0.0340
Max. operating voltage	4.0 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

*Attenuation calculation

$$a_{25} = a \cdot \sqrt{f} \text{ (GHz)} + b \cdot f \text{ (GHz)} \quad (\text{dB/m})$$

General cable data

Temperature range	-65...+165 °C
Weight	11.4 kg/100m
Min. bending radius static	30 mm
Min. bending radius repeated	120 mm

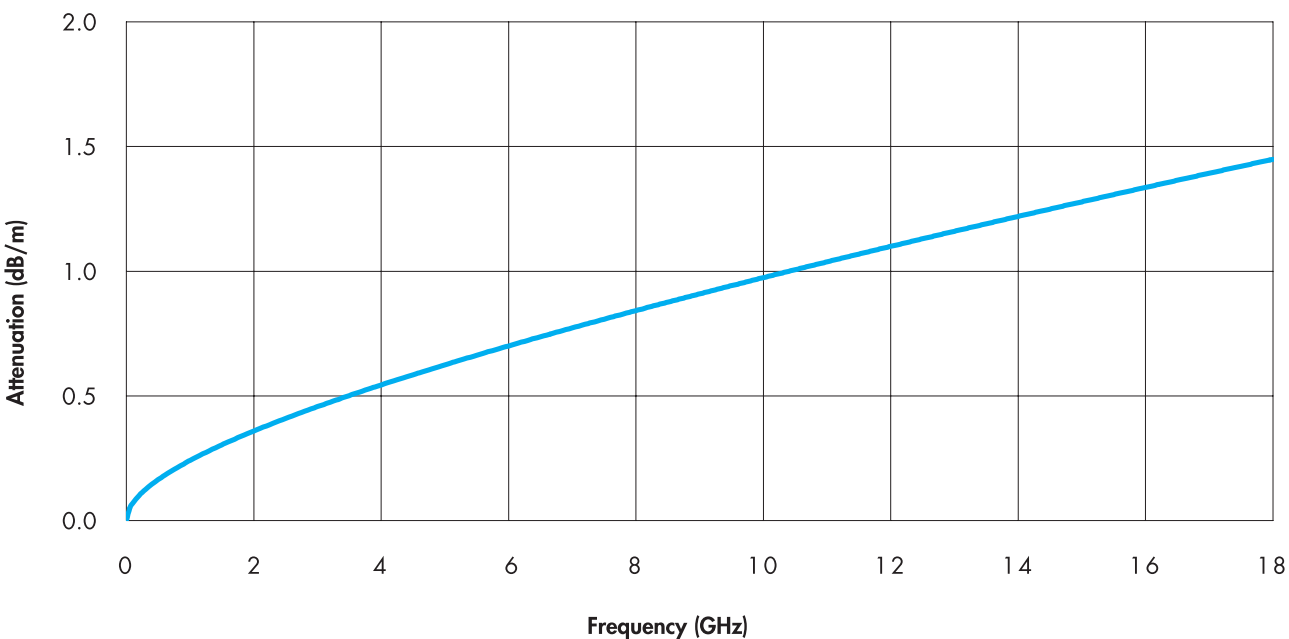
Suitable connectors

Cable group (please refer to pages 63 ff)	Y13
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SUCOFORM[®] SM 250

Cable attenuation

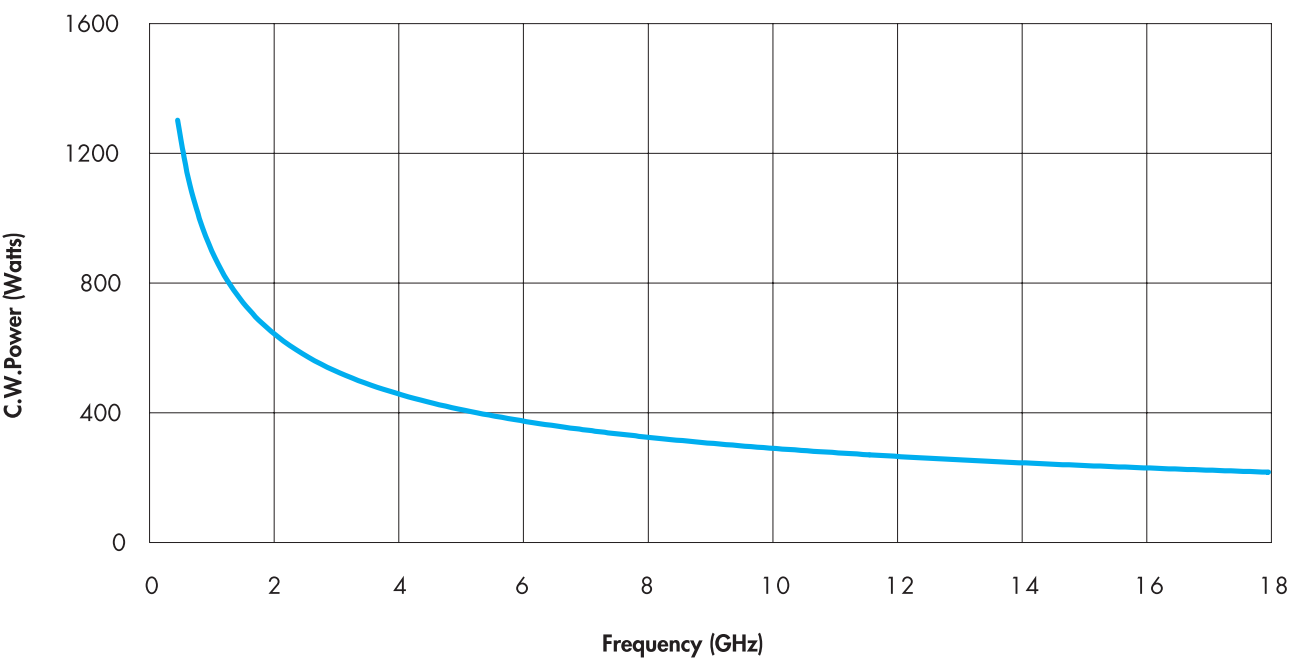
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power handling

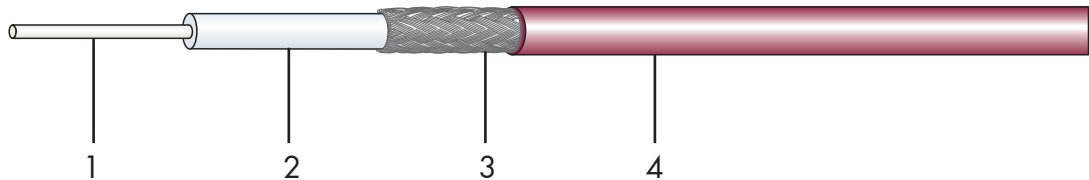
Maximum values @ +40 °C ambient temperature and sea level



SUCOFORM® SM 250 FEP

Order code 22512260

Cable design



	Description	Material	Diameter
1. Centre conductor	Solid silver-plated copper wire	CuAg	1.64 mm
2. Dielectric	Solid PTFE	PTFE	5.27 mm
3. Outer conductor	Tin soaked copper braid	CuSn	6.05 mm
4. Jacket	Fluoroethylenepropylene , red	FEP	6.70 mm
Marking	SUHNER SUCOFORM 250 FEP (Batch no.)		

Electrical cable data

Impedance	50 Ohm		
Operating frequency	18 GHz		
Capacitance	95 pF/m		
Velocity of propagation	71 %		
Time delay	4.7 ns/m		
Nom. attenuation*	coefficient a	0.2100	coefficient b 0.0310
Max. attenuation*	coefficient a	0.2310	coefficient b 0.0340
Max. operating voltage	4.0 kVrms		
Min. screening effectiveness up to 18 GHz	100 dB		

*Attenuation calculation

$$a_{25} = a \cdot \sqrt{f} \text{ (GHz)} + b \cdot f \text{ (GHz)} \quad (\text{dB/m})$$

General cable data

Temperature range	-65...+165 °C
Weight	13 kg/100m
Min. bending radius static	30 mm
Min. bending radius repeated	120 mm

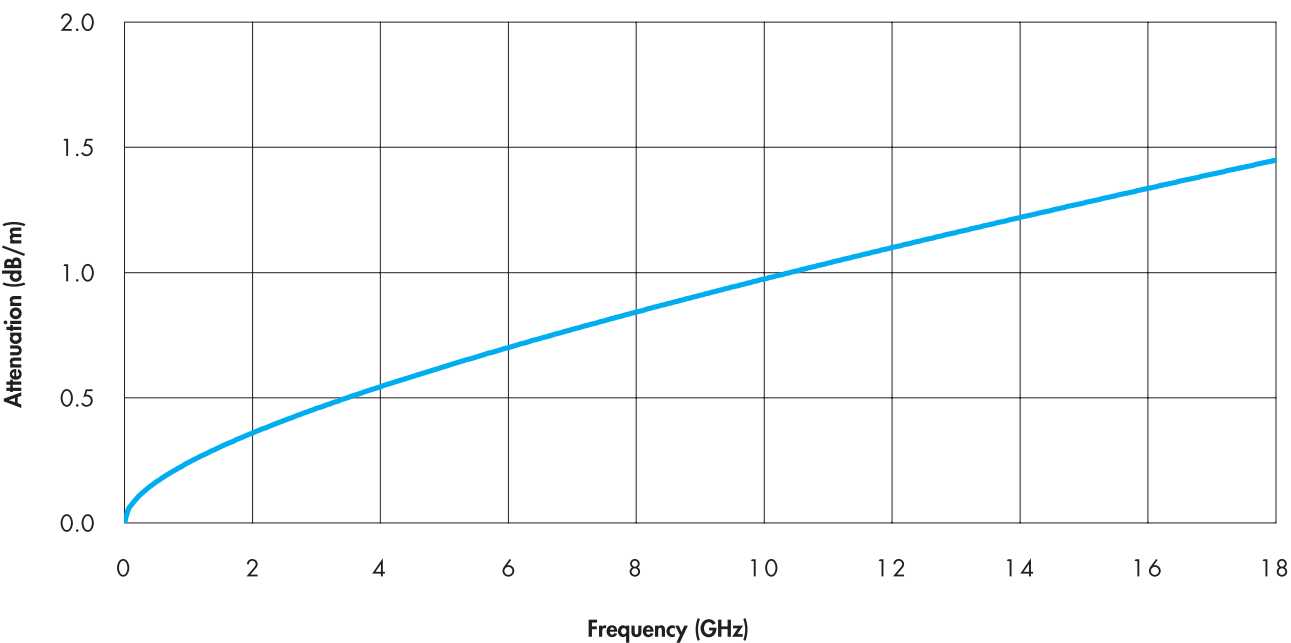
Suitable connectors

Cable group (please refer to pages 63 ff)	Y13
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SUCOFORM® SM 250 FEP

Cable attenuation

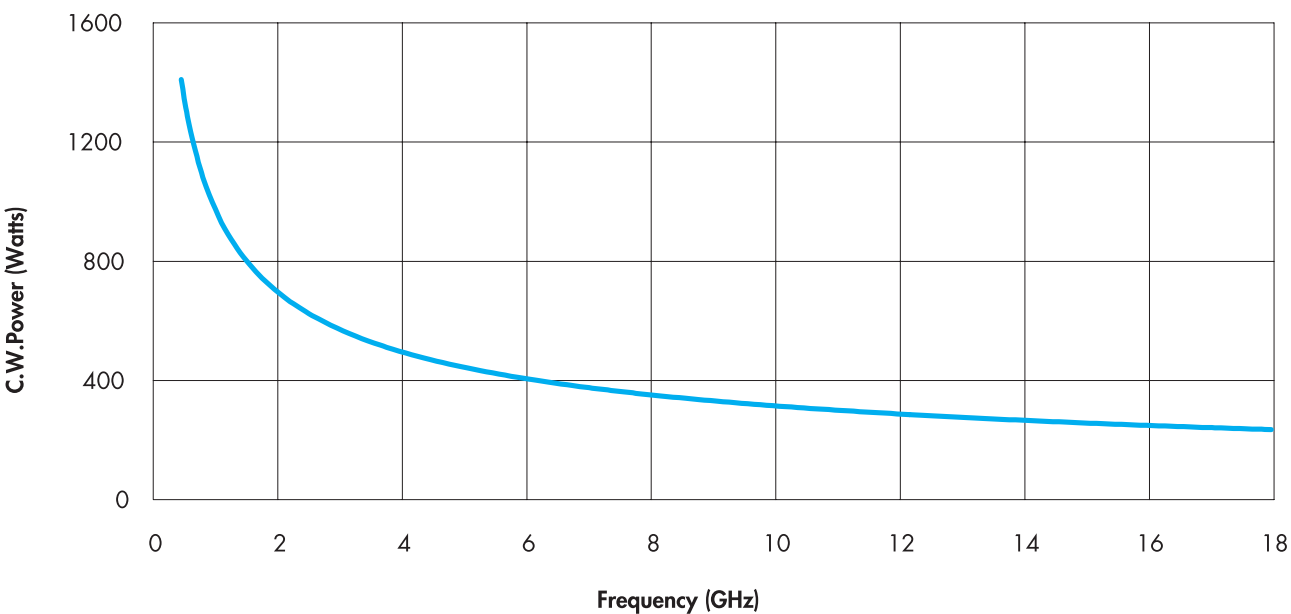
Nominal values @ +25 °C ambient temperature



SUCOFORM

Power handling

Maximum values @ +40 °C ambient temperature and sea level



SUCOFORM®

Further available SUCOFORM® products

50 Ohm

SUHNER cable type	Order code	Centre conductor	Outer conductor	Jacket material	Outer diameter (mm)	Nom. attenuation dB/m @ 18 GHz
SM 141 LSFH	22512148	StCuAg	CuSn	LSFH	5.30	2.2
SM 141 CU	22511635	CuAg	CuSn	n/a	3.58	2.2
SM 141 CUPE	22511639	CuAg	CuSn	PE	4.60	2.2
SM 141 CUFEP	22512256	CuAg	CuSn	FEP	4.10	2.2
SM 141 CULSFH	22512157	CuAg	CuSn	LSFH	4.60	2.2

75 Ohm

SUHNER cable type	Order code	Centre conductor	Outer conductor	Jacket material	Outer diameter (mm)	Nom. attenuation dB/m @ 1 GHz
SM 86-75	22511720	StCuAg	CuSn	n/a	2.10	0.8
SM 86-75 FEP	22511970	StCuAg	CuSn	FEP	2.50	0.8
SM 141-75	22511721	StCuAg	CuSn	n/a	3.58	0.5
SM 141-75 FEP	22512290	StCuAg	CuSn	FEP	4.10	0.5

Other impedances

SUHNER cable type	Order code	Impedance (Ohm)	Centre conductor	Outer conductor	Jacket material	Outer diameter (mm)	Nom. attenuation dB/m @ 1 GHz
SM 141-35	22512104	35	CuAg	CuSn	n/a	3.58	0.5
SM 141-35 FEP	22512291	35	CuAg	CuSn	FEP	4.10	0.5
SM 141-60	22512161	60	StCuAg	CuSn	n/a	3.58	0.4
SM 141-60 FEP	22512288	60	StCuAg	CuSn	FEP	4.10	0.4
SM 141-100	22512081	100	StCuAg	CuSn	n/a	3.58	0.6
SM 141-100 FEP	22512289	100	StCuAg	CuSn	FEP	4.10	0.6

CuAg Silver plated copper
StCuAG Silver plated copper clad steel
CuSn Tin soaked copper braid
Cu Seamless copper tubing
Cu-TP Seamless copper tubing, tin-plated
Al-TP Seamless aluminium tubing, tin-plated
M17 Qualified to MIL-C-17

PE Polyethylene
SPE Foam polyethylene
PTFE Polytetrafluethylene
LDPTFE Low density polytetrafluorethylene
PUR Polyurethane
LSFH Flame retardant polyethylene, halogen free
FEP Fluoroethylenepropylene copolymer

SUCOFORM®

A wide range of standard connectors is available for SUCOFORM microwave cables. In addition, HUBER+SUHNER offers a fast delivery service for RF tested ready-to-use cable assemblies.

Suitable connectors

SUHNER cable type	Series Pattern	SUHNER connector type	Order code	Operating frequency (GHz)
SUCOFORM 86	MCX			
	Straight cable plug	11 MCX-50-2-4 / 111 NH	23027860	6.0
	Right angle cable plug	16 MCX-50-2-104 / 111 NH	22658277	6.0
	Straight panel bulkhead cable jack	24 MCX-50-2-3 / 111 NE	22543580	6.0
	MMCX			
	Straight cable plug	11 MMCX-50-2-1 / 111 OE	22645297	6.0
	Right angle cable plug	16 MMCX-50-2-1 / 111 OE	22645957	6.0
	Straight cable jack	21 MMCX-50-2-1 / 111 OE	22645290	6.0
	Straight panel bulkhead cable jack	24 MMCX-50-2-1 / 111 OE	22645954	6.0
	N			
	Straight cable plug	11 N-50-2-15 / 113 UE	22660315	18.0
	Right angle cable plug	16 N-50-2-9 / 13- UH	23013729	11.0
	Straight cable jack	21 N-50-2-14 / 133 NE	22642666	18.0
	Straight panel bulkhead cable jack	24 N-50-2-14 / 133 NE	22544637	18.0
Cable group Y11				
	PC3.5			
	Straight cable plug	11 PC35-50-2-2 / 199 UE	22644969	33.0
	Straight cable jack	21 PC35-50-2-2 / 199 UE	22644971	33.0
	Straight panel bulkhead cable jack	24 PC35-50-2-1 / 199 UE	22644523	33.0
	QMA			
	Straight cable plug	11 QMA-50-2-3 / 133 NE	23017704	6.0
	Right angle cable plug	16 QMA-50-2-3 / 133 NE	23017666	6.0
	Straight panel bulkhead cable jack	24 QMA-50-2-1 / 111 NE	23017742	6.0
	SMA			
	Straight cable plug	11 SMA-50-2-29 / 119 NH	22660366	18.0
	Right angle cable plug	16 SMA-50-2-103 / 111 NH	22652924	18.0
	Straight cable jack	21 SMA-50-2-15 / 111 NH	22652141	18.0
	Straight panel bulkhead cable jack	24 SMA-50-2-15 / 111 NH	22645490	18.0
	SMB			
	Straight cable plug	11 SMB-50-2-13 / 111 NH	22658765	4.0
	Right angle cable plug	16 SMB-50-2-23 / 111 NE	22644079	4.0
	Straight cable jack	21 SMB-50-2-13 / 111 NE	22543425	4.0
	Straight panel bulkhead cable jack	24 SMB-50-2-13 / 111 NE	22640822	4.0

SUCOFORM®

Suitable connectors

SUHNER cable type	Series Pattern	SUHNER connector type	Order code	Operating frequency (GHz)
SUCOFORM 86	SMC			
	Straight cable plug	11 SMC-50-2-13 / 111 NH	22650675	10.0
	Right angle cable plug	16 SMC-50-2-25 / 111 NE	22644126	10.0
Cable group Y11	Straight panel bulkhead cable jack	24 SMC-50-2-13 / 111 NH	22650209	10.0
	SMPX (GPO and SMP compatible)			
	Straight cable plug	11 SMPX-50-2-1 / 111 NE	23021825	40.0
	Right angle cable plug	16 SMPX-50-2-1 / 111 NE	23022715	40.0
	Right angle cable plug	16 SMPX-50-2-2 / 111 NE	23022716	40.0
	Straight panel cable jack, flange mount	25 SMPX-50-2-1 / 111 NE	23025359	40.0
	TNC			
	Straight cable plug	11 TNC-50-2-20 / 103 NE	22642519	11.0
	Straight panel bulkhead cable jack	24 TNC-50-2-31 / 133 NE	23001721	11.0
SUCOFORM 141	N			
	Straight cable plug	11 N-50-3-13 / 113 NE	22542083	18.0
	Straight cable plug	11 N-50-3-51 / 133 NE	22543919	18.0
	Right angle cable plug	16 N-50-3-15 / 133 NE	22648832	11.0
	Straight cable jack	21 N-50-3-11 / 133 NE	22543921	18.0
	Straight cable jack	21 N-50-3-51 / 19- NE	22543922	18.0
	Straight panel bulkhead cable jack	24 N-50-3-14 / 133 NE	22542300	12.4
	Straight panel bulkhead cable jack	24 N-50-3-51 / 19- NE	22642344	18.0
	PC3.5			
	Straight cable plug	11 PC35-50-3-2 / 199 UE	22644968	33.0
	Straight cable jack	21 PC35-50-3-2 / 199 UE	22644970	33.0
	Straight panel bulkhead cable jack	24 PC35-50-3-1 / 199 UE	22644522	33.0
	QMA			
	Straight cable plug	11 QMA-50-3-3 / 133 NE	23017695	6.0
Cable group Y12	Right angle cable plug	16 QMA-50-3-3 / 133 NE	23017693	6.0
	Straight panel bulkhead cable jack	24 QMA-50-3-3 / 111 NE	23017683	6.0
	SMA			
	Straight cable plug	11 SMA-50-3-15 / 111 NH	22651601	18.0
	Right angle cable plug	16 SMA-50-3-3 / 111 NH	22646569	18.0
	Straight panel bulkhead cable jack	24 SMA-50-3-15 / 111 NH	22645259	18.0

SUCOFORM®

Suitable connectors

SUHNER cable type	Series Pattern	SUHNER connector type	Order code	Operating frequency (GHz)
SUCOFORM 141	TNC			
Cable group Y12	Straight cable plug	11 TNC-50-3-29 / 103 NE	22641997	11.0
	Straight panel bulkhead cable jack	24 TNC-50-3-30 / 133 NH	23001723	11.0
SUCOFORM 250	716			
Cable group Y13	Straight cable plug	11 716-50-5-5 / 00- -E	23011947	7.5
	Straight panel cable jack, flange mount	25 716-50-5-7 / 00- -E	23011905	7.5
	N			
	Straight cable plug	11 N-50-5-16 / 13- UE	23011889	18.0
	Straight cable plug	11 N-50-5-55 / 19- NE	23011957	18.0
	Straight panel cable jack, flange mount	25 N-50-5-7 / 13- UE	23011924	18.0

Connector dimensions and additional information

For connector dimensions and additional information please refer to the corresponding connector type in the SUHNER Coaxial Connectors General Catalogue or contact your [local HUBER+SUHNER partner](#).