



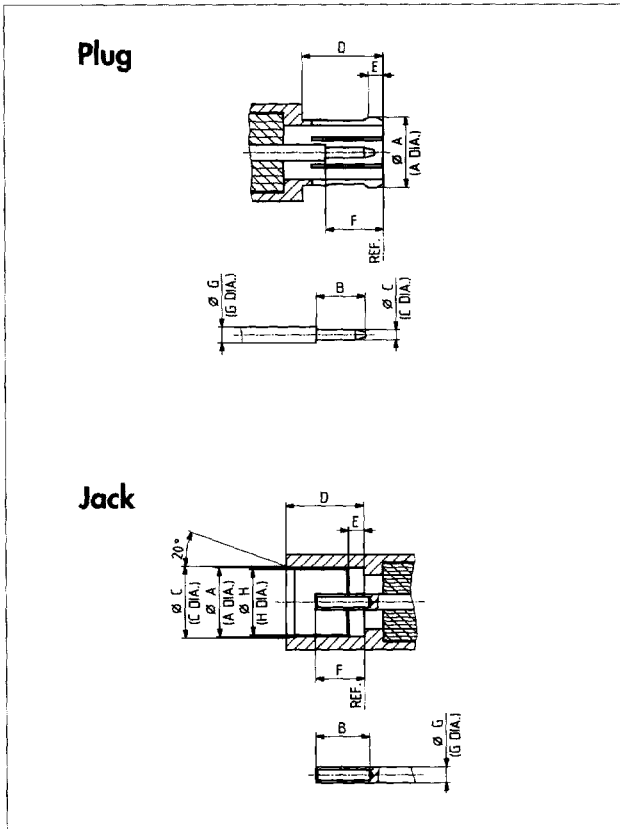
SERIES MCX 75 Ω MICROAX CONNECTORS

Description

SUHNER MCX 75 Ω connectors are derived from the MCX 50 Ω series but have a characteristic impedance of 75 Ω. They offer outstanding electrical properties up to 6 GHz and allow the transmission of digital signals with high bit rates exceeding 565 Mbit/s.

The comparison of dimensions shows that MCX 75 Ω connectors are approximately 40% smaller than those of series 1.6/5.6 and BT 43 (SMB 75 Ω).

Interface Dimensions



Contents

Page

Description	77
Interface Dimensions	77
Interface Dimensions in mm / inches	77
Compatibility	77
Technical Data	78
Connectors for Flexible Cables	80
Receptacles with Solder End	82
PCB Connectors	83
Adaptors Within-Series	85
Terminations	85

Interface Dimensions in mm / inches

	Plug		Jack	
	min.	max.	min.	max.
A	3.72/.146*	3.80/.150*	3.60/.142	3.70/.146
B	2.49/.098	2.59/.102	2.80/.110	—
C	0.48/.019	0.53/.021	3.75/.148	3.85/.152
D	4.15/.163	—	4.00/.157	4.12/.162
E	0.70/.028	0.75/.030	0.75/.030	0.85/.033
F	2.80/.110	3.20/.126	2.30/.091	2.80/.110
G	0.83/.033 nom.		0.83/.033 nom.	
H			3.42/.135	3.48/.137

* prior to slotting

Compatibility

MCX 75 Ω connectors and MCX 50 Ω connectors acc. to CECC 22220 are intermateable.

MCX 75

Technical Data

ELECTRICAL DATA	REQUIREMENTS
Impedance	75 Ω
Frequency Range	DC ... 6 GHz (see also Appendix page 436)
VSWR	see table below
RF-leakage (measured at 1 GHz)	≥ 60 dB
Dielectric withstanding voltage (at sea level)	500 V rms, 50 Hz
Working voltage (at sea level) mated/unmated	≤ 170 V rms, 50 Hz
Working voltage (at 21 000 m/70 000 ft.) mated/unmated	≤ 45 V rms, 50 Hz
Insulation resistance	$\geq 10^3$ M Ω
Contact resistance – centre contact – outer contact	≤ 5.0 m Ω ≤ 2.5 m Ω

TYPICAL VSWR CONNECTOR TYPE	FREQUENCY RANGE			CABLE GROUP
	1 GHz	2.5 GHz	6 GHz	
straight connectors	1.03	1.07	1.12	U5
	1.03	1.06	1.07	G 02133 D-05
	1.03	1.06	1.08	K 02253 D-01
right angle connectors	1.03	1.07	1.12	U5
	1.04	1.08	1.12	G 02133 D-05
	1.03	1.06	1.10	K 02253 D-01

Other connectors and cables on request

MECHANICAL DATA	REQUIREMENTS
Engagement force	≤ 25 N / 5.6 lbs
Disengagement force	8 N ... 20 N / 1.8 lbs ... 4.5 lbs
Contact captivation	≥ 10 N / 2.3 lbs
Cable retention force ¹⁾	see pages 36 – 41
Durability (matings)	≥ 500

1) value considers maximum load of the cables without irreversible variations of specifications.

ENVIRONMENTAL DATA	TEST CONDITIONS
Temperature range	- 65° C ... + 165° C / - 85° F ... + 329° F
Climatic category acc. to IEC	55 / 155 / 21
Thermal shock	MIL-STD-202, Method 107, Condition C
Moisture resistance	MIL-STD-202, Method 106
Corrosion	Saltspray test acc. to MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D

MATERIAL DATA			
CONNECTOR PART	STANDARDS	MATERIAL	PLATING
Bodies Outer contacts Pin contact	QQ-B-626	brass	SUCOPLATE® gold gold
Outer contacts (resilient) Socket contact	QQ-C-530	beryllium-copper, hardened	gold
Press-in-terminals SUHNER® PRESS-FIT	ASTM-B-103	phosphor bronze	tin/lead nickel underplated
Crimp ferrules	SUHNER® specifications	copper	SUCOPLATE®
Insulators	ASTM-D-1457, BS 4217, Grade B	PTFE	

Connectors for Flexible Cables

straight plugs

- > SUHNER® full crimp
- > taper sleeves see page 423

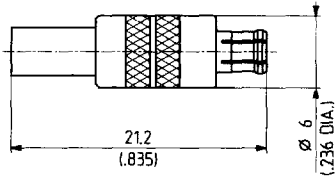
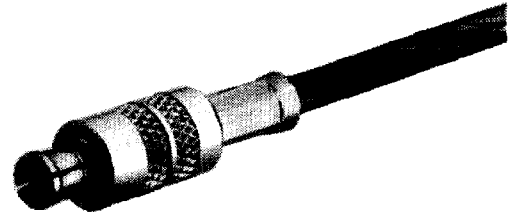


Fig. 1

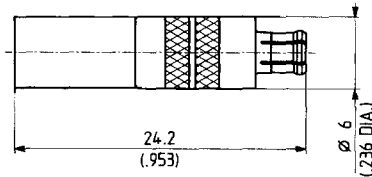


Fig. 2

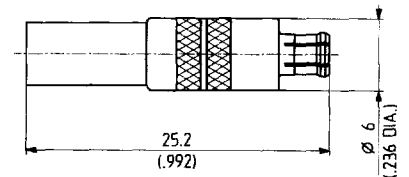
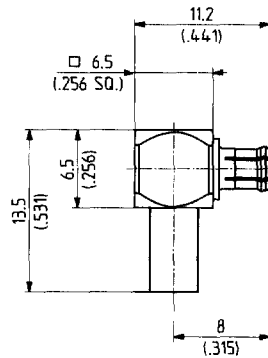


Fig. 3

SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert	Assembly instruction	Weight	Fig.	Notes
11 MCX-75-2-1	• 646946	U5 (RG 187 A/U)	1/2 A	9196	2.40 g/.084 oz.	1	
11 MCX-75-2-2*	• 646947	R6 (G02133D-05)	1/4.95	9198	3.20 g/.112 oz.	2	***
11 MCX-75-2-4**	• 651007	R6 (G02133D-05)	BS 9210	9109	2.90 g/.102 oz.	3	***
11 MCX-75-2-5	• 650027	S13 (S 02223-01)	1/2 A	9196	2.20 g/.077 oz.	1	
11 MCX-75-2-6	• 650698	R8 (K 02253 D-01)	1/2 A	9196	2.10 g/.074 oz.	1	

right angle plugs

- > cable entry crimp
- > centre contact soldered
- > taper sleeves see page 423



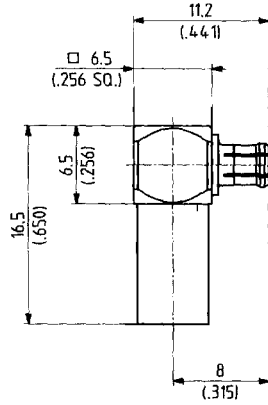
SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert	Assembly instruction	Weight	Notes
16 MCX-75-2-1	• 646950	U5 (RG 187 A/U) R7 (G 02233)	1/2 A	9197	3.10 g/.109 oz.	
16 MCX-75-2-3**	• 651008	R6 (G02133D-05)	BS 9210	9197	3.50 g/.123 oz.	***
16 MCX-75-2-4	• 650701	R8 (K 02253 D-01)	1/2 A	9197	2.90 g/.102 oz.	

* centre contact can also be soldered
 ** for use with the same crimp tools as BT 43 (BS 9210)

*** also for use with cable BT 3002

• centre contact captivated

- > cable entry crimp
- > centre contact soldered
- > taper sleeves see page 423



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert	Assembly instruction	Weight	Notes
16 MCX-75-2-2	646951	R6 (G02133D-05)	1/4.95	9197	3.80 g/.133 oz.	also for use with cable BT 3002

bulkhead jacks

- > SUHNER® full crimp
- > "snap-on" panel mounting
- > taper sleeves see page 423

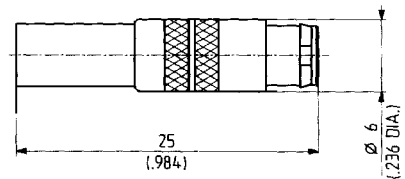
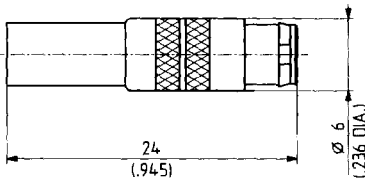
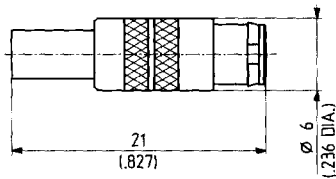
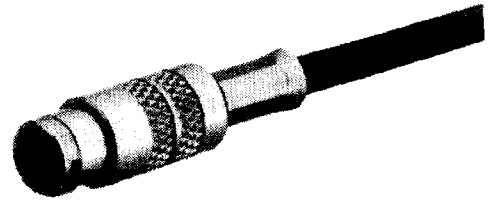


fig. 1

fig. 2

fig. 3

SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert	Assembly instruction	Weight	Fig.	Notes
24 MCX-75-2-1	646948	U5 (RG 187 A/U)	1/2 A	9196	2.70 g/.094 oz.	1	
24 MCX-75-2-2*	646949	R6 (G02133D-05)	1/4.95	9198	3.50 g/.123 oz.	2	***
24 MCX-75-2-3**	651009	R6 (G02133D-05)	BS 9210	9109	3.50 g/.123 oz.	3	***

panel thickness 2.50 mm/.098 in. (+0/-0.1 mm, +0/-0.004 in.)

mounting hole ML 82

* centre contact can also be soldered

** for use with the same crimp tools as BT 43 (BS 9210)

*** also for use with cable BT 3002

Note: The cable assembly of the above mentioned types is achieved by simple crimping and panel mounting is easily done due to a "snap-on" principle. Panel cable jack can also be used as free cable jacks.

- centre contact captivated

right angle bulkhead jacks

- > cable entry crimp
- > centre contact soldered
- > "snap-on" panel mounting

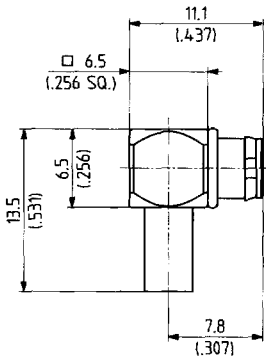


Fig. 1

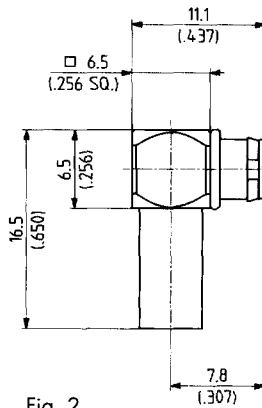


Fig. 2



SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert	Assembly instruction	Weight	Fig.	Notes
29 MCX-75-2-1	• 649379	U5 (RG 187 A/U)	1/2 A	9197	3.20 g/.112 oz.	1	
29 MCX-75-2-2**	• 649380	R6 (G02133D-05)	BS 9210	9197	3.60 g/.126 oz.	2	***

panel thickness 2.5 mm/.098 in. (± 0.1 mm/.004 in.)

mounting hole ML 82

** for use with the same crimp tools as BT 43 (BS 9210)

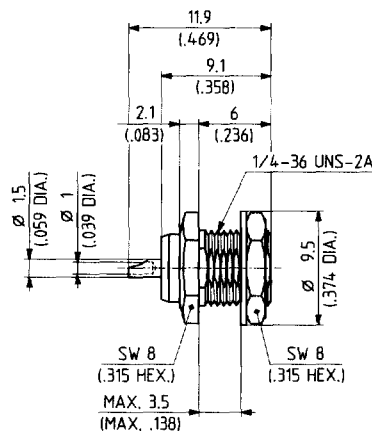
*** also for use with cable BT 3002

Note: The cable assembly of the above mentioned types is achieved by simple crimping and panel mounting is easily done due to a "snap-on" principle. Panel cable jacks can also be used as free cable jacks.

Receptacles with Solder End

receptacle, female

- > bulkhead mounted



SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
22 MCX-75-0-1	• 649381	ML 35	2.60 g/.091 oz.	rear mounting

- centre contact captivated

cable groups see page 36

assembly tools see page 403

mounting holes see page 441

PCB Connectors

straight PCB plugs

> soldered types

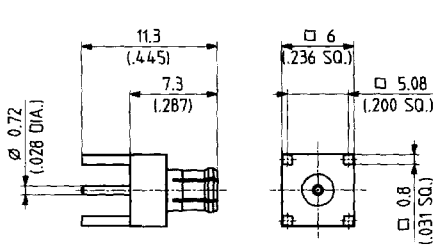


Fig. 1

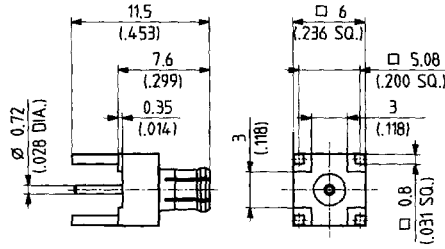


Fig. 2



SUHNER TYPE	Ident. no.	Mounting hole	Weight	Fig.	Notes
81 MCX-75-0-1	650057	ML 15	1.50 g/.053 oz.	1	without stand-offs
81 MCX-75-0-2	650744	ML 15	1.50 g/.053 oz.	2	

straight PCB jacks

> soldered types

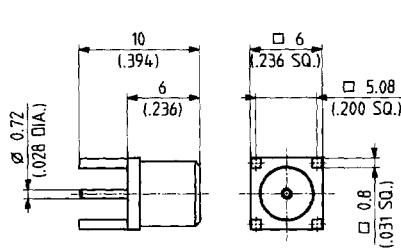


Fig. 1

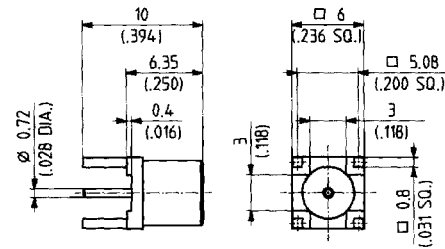


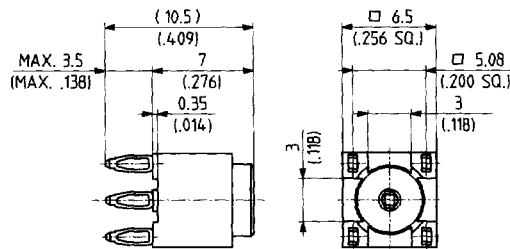
Fig. 2



SUHNER TYPE	Ident. no.	Mounting hole	Weight	Fig.	Notes
82 MCX-75-0-1	646952	ML 15	1.50 g/.053 oz.	1	without stand-offs
82 MCX-75-0-2	650696	ML 15	1.40 g/.049 oz.	2	

> SUHNER® PRESS-FIT

> press-in type



SUHNER TYPE	Ident. no.	Mounting hole	Press-in tool	Weight	Notes
82 MCX-775-0-1	650757	ML B7	74 Z-0-0-283	1.90 g/.067 oz.	with stand-offs

• centre contact captivated

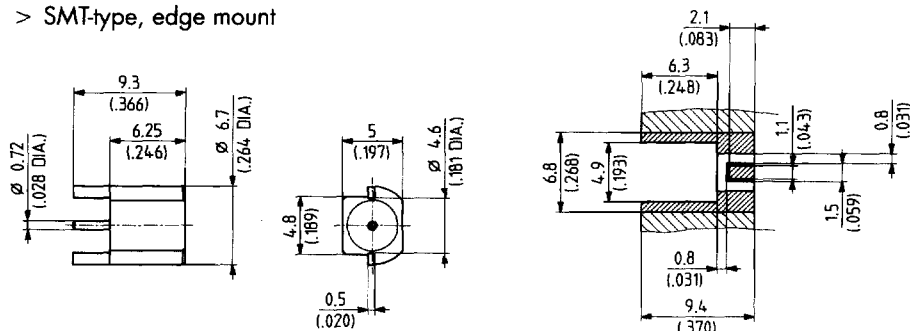
cable groups see pages 36 assembly tools see page 403 mounting holes see page 441

MATERIAL FR4 (ϵ_r 4.6)/ PCB thickness 1.6 (.063)

▨ = pattern

▩ = lands (free of solder mask)

> SMT-type, edge mount



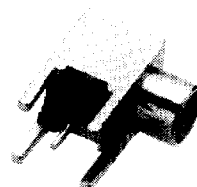
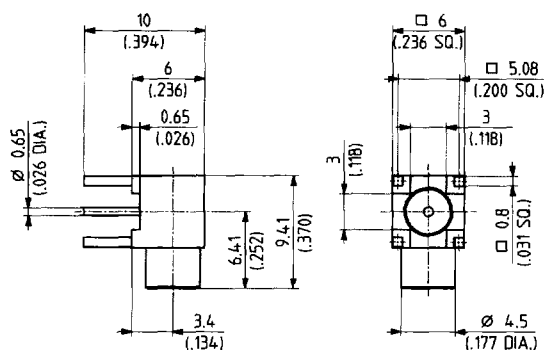
recommended PCB layout

SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
62 MCX-375-0-2	651011	see PCB layout	1.00 g/.035 oz.	VSWR ≤ 1.08; f ≤ 6 GHz

Note: Further MCX-SMT-types on request

right angle PCB jack

> soldered type



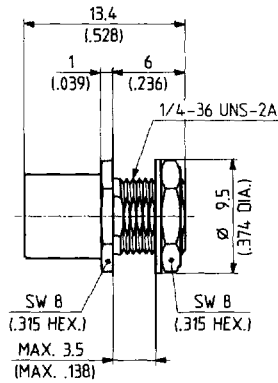
SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
65 MCX-75-0-1	649202	ML 15	2.30 g/.081 oz.	

• centre contact captivated

Adaptors Within-Series

bulkhead adaptor

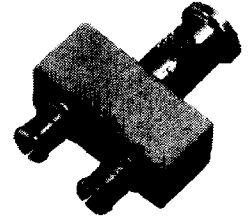
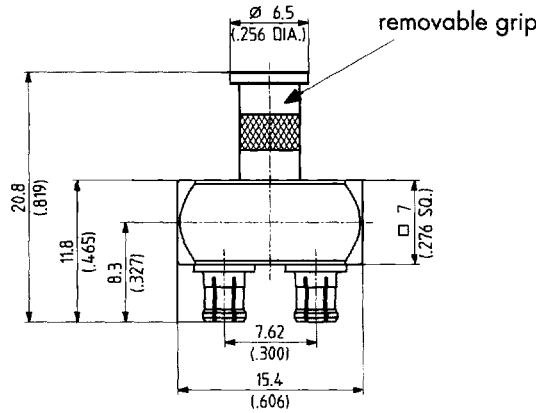
> jack to jack



SUMNER TYPE	Ident. no.	Mounting hole	Weight	Notes
34 MCX-75-0-1	649382	ML 35	3.80 g / .133 oz.	

U-link

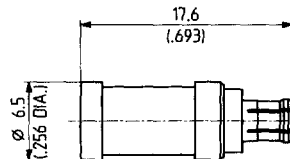
> plug to plug



SUMNER TYPE	Ident. no.	Weight	Notes
52 MCX-75-0-2	651672	7.00 g / .245 oz.	dimension 7.62 mm / .300 in., tolerance ± 0.05 mm / .002 in.

Terminations

75 Ω , plug



SUMNER TYPE	Ident. no.	VSWR	DC - 1GHz	1 - 2 GHz	Impedance	Interface	Power	Weight
65 MCX-75-0-1	649865	≤ 1.20		≤ 1.18	75 $\Omega \pm 1 \Omega$	plug	0.5 watt*	2.60 g / .091 oz.

* at max. 30°C/86°F ambient temperature, derated linearly to zero watt at 130°C/266°F ambient temperature

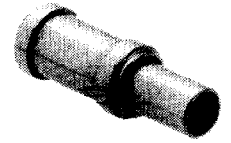
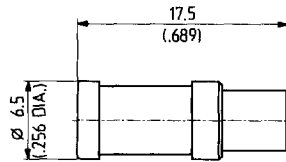
• centre contact captivated

cable groups see pages 36

assembly tools see page 403

mounting holes see page 441

75 Ω, jack



SUHNER TYPE	Ident. no.	VSWR		Impedance	Interface	Power	Weight
		DC - 1 GHz	1 - 2 GHz				
65 MCX-75-0-31 •	650762	≤ 1.20	≤ 1.18	75 Ω ± 1 Ω	jack	0.5 watt*	2.50 g / .088 oz.

* at max. 30°C/86°F ambient temperature, derated linearly to zero watt at 130°C/266°F ambient temperature

- centre contact captivated