



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).

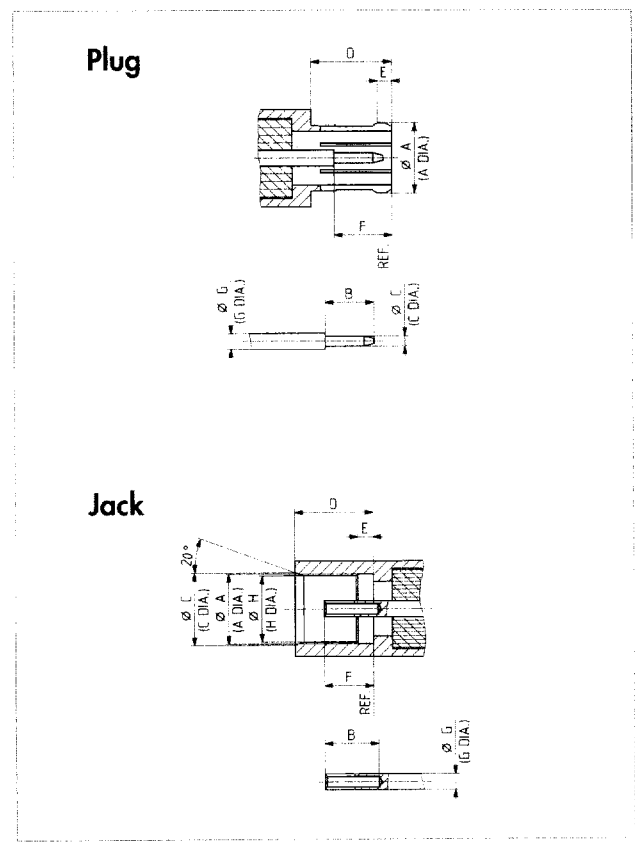
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Interface Dimensions

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.

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	≤ 5.0 m Ω
- centre contact	≤ 2.5 m Ω
- outer contact	

TYPICAL VSWR	FREQUENCY RANGE			CABLE GROUP
	1 GHZ	2.5 GHZ	6 GHZ	
CONNECTOR TYPE				
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

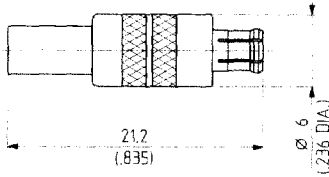
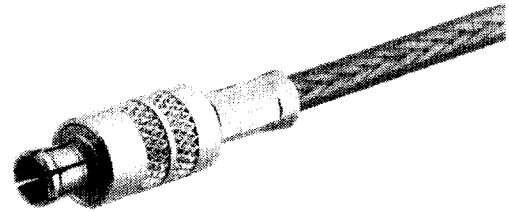


Fig. 1

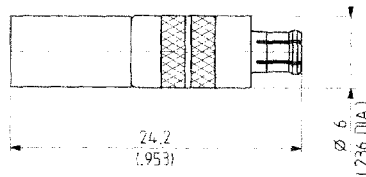


Fig. 2

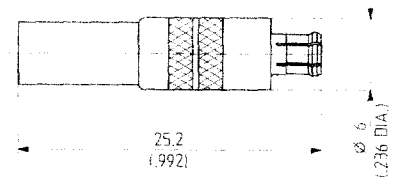
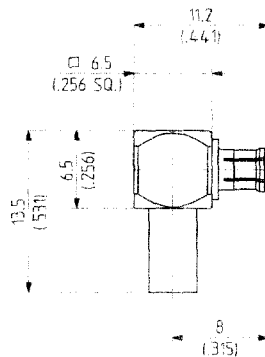


Fig. 3

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



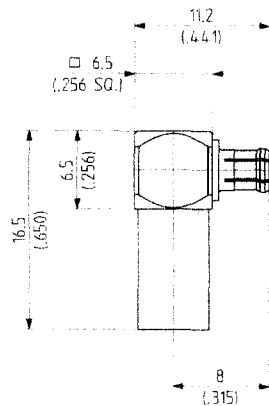
SUHNER TYPE	Ident. no.	Cable group (example)	Crimp insert	Assembly instruction	Weight	Notes
16 MCX-75-2-1	● 646950	U5 (RG 187 A/U) R7 (G 02233)	1/2 A	9197	3.10 g/.109 oz.	
16 MCX-75-2-3**	● 651008	R6 (G02133D-05)	BS 9210	9197	3.50 g/.123 oz.	***
16 MCX-75-2-4	● 650701	R8 (K 02253 D-01)	1/2 A	9197	2.90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

panel or cable jacks

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

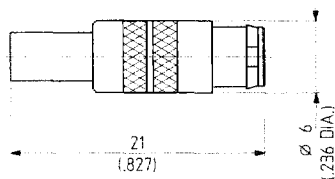
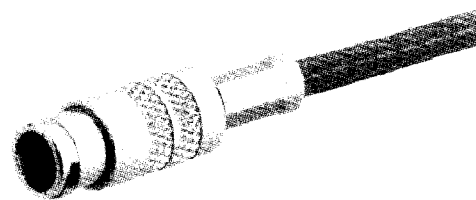


Fig. 1

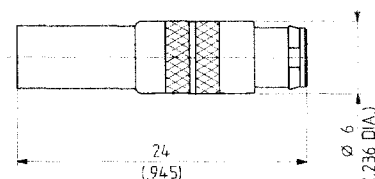


Fig. 2

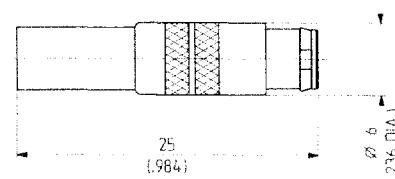


Fig. 3

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-75-2-4**	• 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/- .004 in.)

mounting hole M1. 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 panel or cable jacks

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

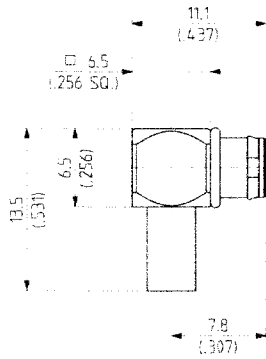


Fig. 1

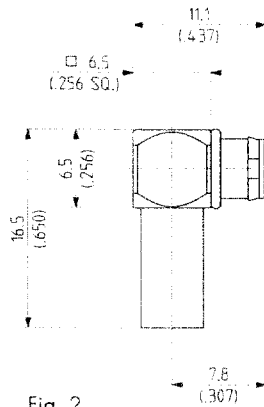
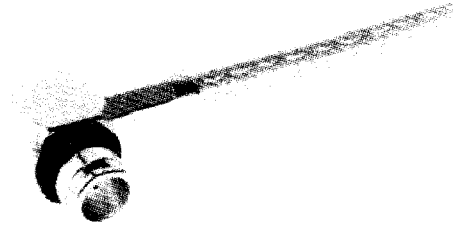


Fig. 2



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)

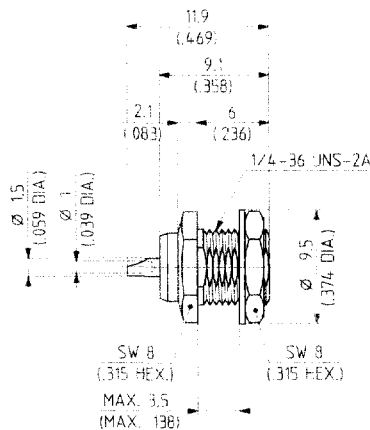
*** also for use with cable BT 3002

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

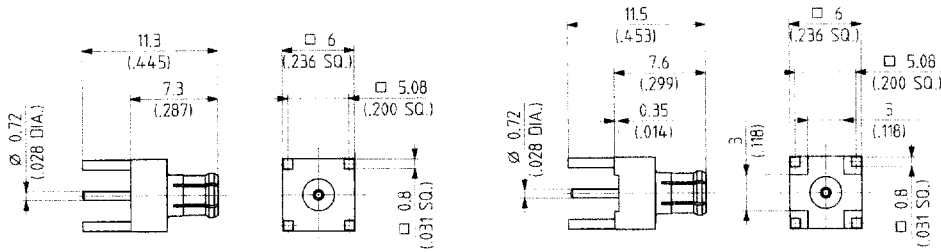


Fig. 1

Fig. 2



MCX 75

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

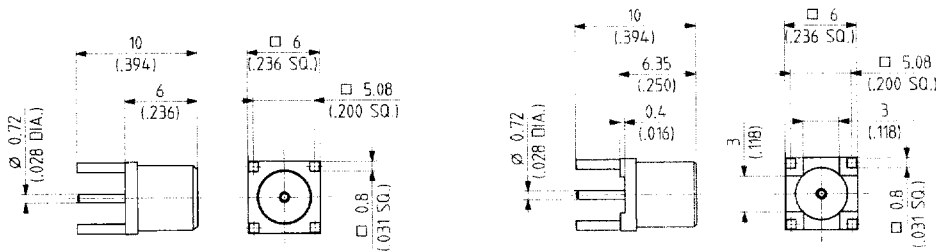


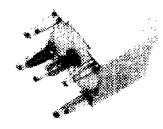
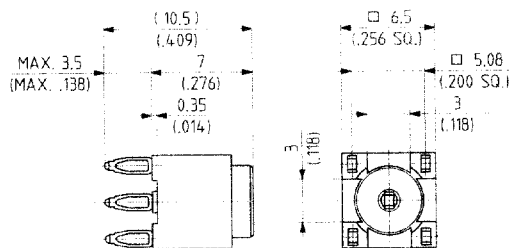
Fig. 1

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-P75-0-1	● 650757	ML 87	74 Z-0-0-283	1.90 g/ .067 oz.	with stand-offs

● centre contact captivated

cable groups see pages 36

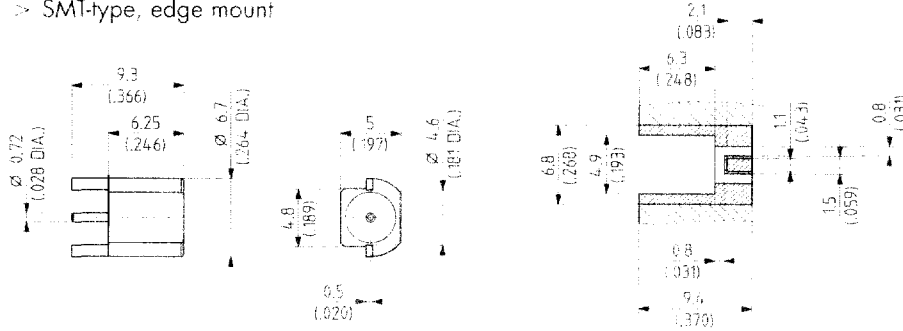
assembly tools see page 403

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



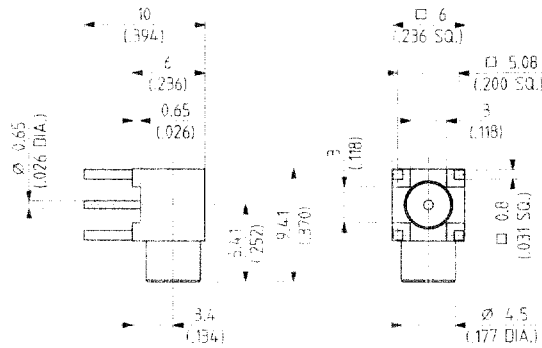
recommended PCB layout

SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
82 MCX-S75-0-2	• 651011	see PCB layout	1.00 g/ .035 oz.	VSWR \leq 1.08; f \leq 6 GHz

Note: Further MCX-SMT-types on request

right angle PCB jack

> soldered type



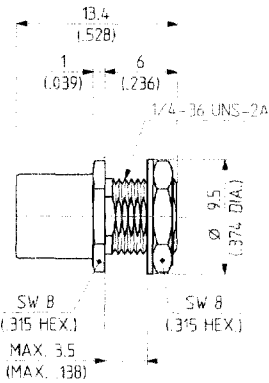
SUHNER TYPE	Ident. no.	Mounting hole	Weight	Notes
85 MCX-75-0-1	• 649202	ML 15	2.30 g/ .081 oz.	

- centre contact captivated

Adaptors Within-Series

bulkhead adaptor

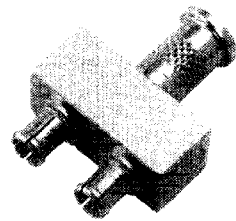
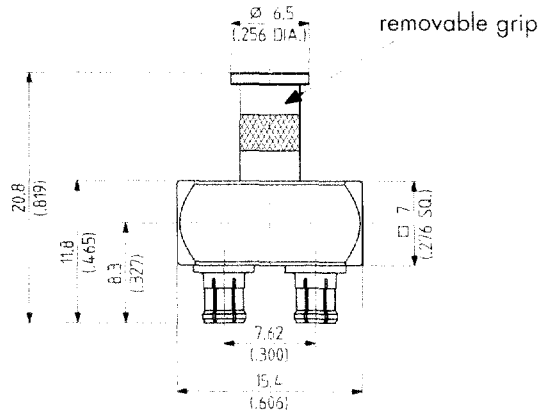
> jack to jack



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

U-link

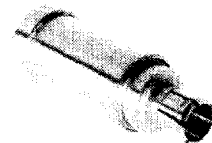
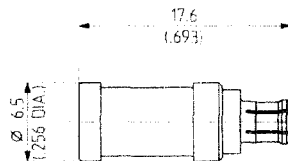
> plug to plug



SUHNER 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



SUHNER 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

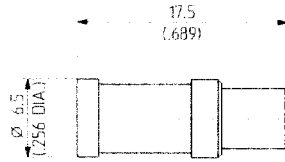
• centre contact captivated

cable groups see pages 36

assembly tools see page 403

mounting holes see page 441

75 Ω, jack



SUHNER TYPE	Ident. no.	VSWR DC – 1 GHz	1 – 2 GHz	Impedance	Interface	Power	Weight
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