

Improvements in surface-mount technology (SMT) on printed circuit boards allow a miniaturization of electronic components and important productivity savings in assembly.

Typically in "Radio-Frequency" applications, the connection of coaxial cables to various circuits fixed on the cards has been made using through-hole connectors incompatible to the new automated technology.

RADIALL has designed a complete range of microminiature coaxial connectors, **MMS** series, specifically designed for these new procedures.

Due to its optimized design the **MMS** range benefits from the following advantages :

Design adapted to automatic placement

The assymetric footprint of the **MMS** connector allows video micro-positioning using the component's shadow to analyse its placement (page 16).

The **MMS** connector stands on three pliable legs. This design guarantees the receptacle stability after the placement. It allows it to absorb by elastic bending of the legs, the pressure of the positioning and placement mechanism.

Competitive pricing

The fully automated production of the **MMS** range achieves optimized low cost production.

A geometry suited to automated picking

The plain upper surface of the **MMS** receptacle facilitates vacuum picking of the component at the exit of the automated distribution system.

The geometry allows the use of numerous pneumatic nozzles with various diameters (page 16).

Optimization of soldering procedure

The materials used in **MMS** connectors resist, without damage, the rapid elevation of temperature (to 270°C) during the short time of the solder reflow in an infra-red oven (page 17).

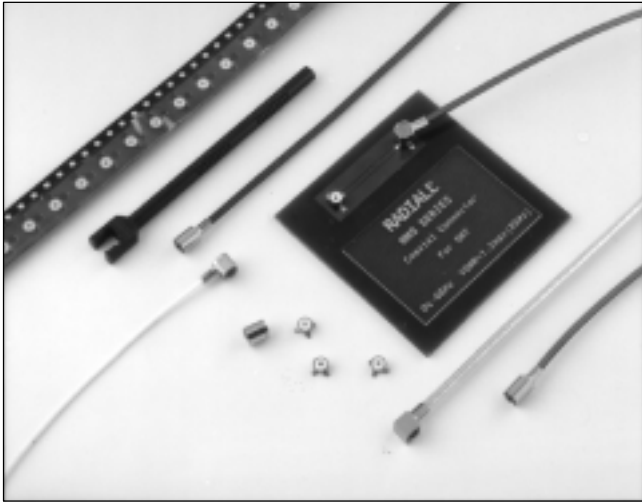
Packaging

The **MMS** connector is packaged on reels of plastic embossed tape (page 15) containing either 100, 500 or 3000 **MMS** receptacles.

The unit cavity geometry is designed for a perfect presentation of the component. The bottom of the cavity is pierced. This hole facilitates the suction of the component, avoiding the adherence effect and allows the use of a through hole for a push rod.

360° cable rotation

The **MMS** snap-on mating system ensures a correct positive connection each time and all **MMS** connectors (plugs + receptacles) have a design which allows a 360° rotation of the pair when mated.



50 Ω	DC - 6 GHz
75 Ω	DC - 1 GHz

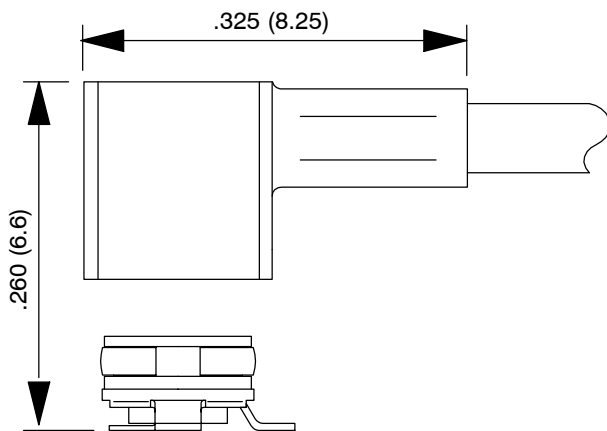
GENERAL

- Low profile coaxial connectors
- Surface-mount receptacle (SMT)
- Fully compatible with automated pick and place machines
- Snap-on mating
- High RF performance :
 - VSWR : 1.05 at 1 GHz / 1.15 at 2.5 GHz
 - RF leakage : -40 dB at 2 GHz
- Competitive pricing

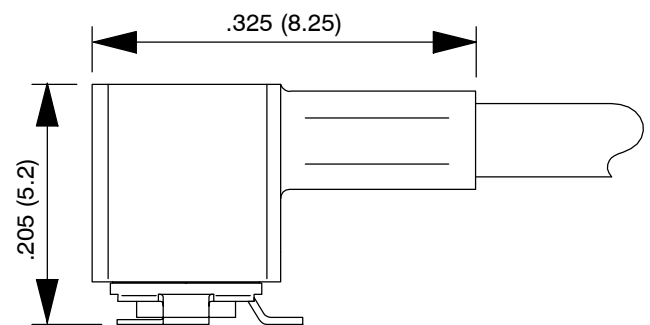
APPLICATIONS

- Base stations and hand-sets for :
 - cellular telephones
 - cordless telephones
- Satellite reception terminals (GPS, . . .)
- Instrumentation
- Wireless datacom networks
- Automated payment systems
- Videocommunications
- Other general electronics

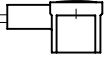
PROFILE



Unmated



Mated



	TEST STANDARD	RESULTS	
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ELECTRICAL CHARACTERISTICS

		50 Ω	75 Ω
Impedance		50 Ω	75 Ω
Frequency range		DC-6 GHz	DC-1 GHz
V.S.W.R. (mated pair)	IEC 1169-1	1.05 at 1 GHz 1.15 at 2.5 GHz 1.35 at 6 GHz	
Insertion loss	IEC 1169-1	0.2 dB at 2 GHz	
RF leakage (mated pair)	MIL STD 1344 method 3008	-50 dB at 500 MHz -45 dB at 1 GHz -40 dB at 2 GHz	
Outer contact resistance	NF-C 93050 (I = 40 mA peak)	5m Ω max	
Center contact resistance	NF-C 93050 (I = 40 mA peak)	15m Ω max	
Insulation resistance	IEC 1169-1	500 MΩ min (under 250 V RMS)	
Working voltage		50 V RMS	
Testing voltage (V RMS)	IEC 1169-1	Ø 1 mm : 250 ; Ø 2 mm : 500	
Maximum admissible power		40 W at 1 GHz / 20 °C / V.S.W.R. = 1	

MECHANICAL CHARACTERISTICS

Durability	IEC 1169-1	50 matings
Force to engage	IEC 1169-1	7 N avg
Force to disengage	IEC 1169-1	5.5 N avg
Shocks (drop test)	IEC 68-2-27	50 g/11 ms ; 3 shocks/axis/way
Random vibrations	Général Motors spec.	Sine waves 5 to 1000 Hz 3 to 30g - 1 H/axis
Bumps (mechanical shocks)	IEC 68-2-29	25 g/6 ms 1000 bumps/axis/way
Cable retention force	IEC 1169-1	Ø 1 mm : 20 N ; Ø 2 mm : 35 N
Solderability	IEC 68-2-54	Passed

ENVIRONMENTAL CHARACTERISTICS

Temperature range		-40 °C / +90 °C
Climatic cycles	GAM T 13	48 H at 70 °C - 24 H at 40 °C/93% -36 H at -25 °C

MATERIALS

Bodies plugs / in series adapters	Die cast zinc / brass
Bodies receptacles	Phosphor bronze
Center contact male female	Brass Beryllium copper
Insulator	PTFE

PLATING

Bodies plugs, in series adapters	Nickel
Bodies receptacles	Gold
Center contact male female	Nickel Gold

POWER RATING

All dimensions are given in mm.

Example : P = 23 W at F= 1.8 GHz, T = 40 °C, V.S.W.R. = 1.1

For any further information about the power handled, please see our power application guide (**D1 033 DE**).

