

# TIMES MICROWAVE SYSTEMS

A Smiths Group plc company

## LMR<sup>®</sup>-100A

### Flexible Low Loss Communications Coax

#### Ideal for...

- Drop-in Replacement for RG-316/RG-174 (uses standard connectors)
- Jumper Assemblies in Wireless Communications Systems
- Short Antenna Feeder runs
- Any application (e.g. WLL, GPS, LMR, Mobile Antennas) requiring an easily routed, low loss RF cable

• **LMR<sup>®</sup>-PVC** is designed for low loss general-purpose indoor/outdoor applications and is somewhat more flexible than the standard polyethylene jacketed LMR.

• **LMR<sup>®</sup>-PVC-W** is a white-jacketed version of LMR-PVC for marine and other indoor/outdoor applications where color compatibility is desired.

• **Flexibility** and bendability are hallmarks of the LMR-100A cable design. The flexible outer conductor enables the tightest bend radius available for any cable of similar size and performance.

• **Low Loss** is another hallmark feature of LMR-100A. Size for size LMR has the lowest loss of any flexible cable and comparable loss to semirigid hard-line cables.

• **RF Shielding** is 50 dB greater than typical single shielded coax (40 dB). The multi-ply bonded foil outer conductor is rated conservatively at > 90 dB (i.e. >180 dB between two adjacent cables).

• **Weatherability:** LMR-100A cables designed for outdoor exposure incorporate the best materials for UV resistance and have life expectancy in excess of 20 years.

• **Connectors:** A wide variety of connectors are available for LMR-100A cable, including all common interface types, reverse polarity, and a choice of solder or non-solder center pins. Most LMR connectors employ crimp outer attachment using standard hex crimp sizes.

• **Cable Assemblies:** All LMR-100A cable types are available as pre-terminated cable assemblies. Refer to the section on FlexTech for further details.

Part Description					Stock
Part No.	Application	Jacket	Color	Code	
LMR-100A-FR	Indoor-Riser CMR	FRPE	Black	54037	
LMR-100A-PVC	Indoor/Outdoor	PVC	Black	54119	
LMR-100A-PVC-W	Indoor/Outdoor	PVC	White	54200	

PVC = Poly Vinyl Chloride; MTO = Made to Order



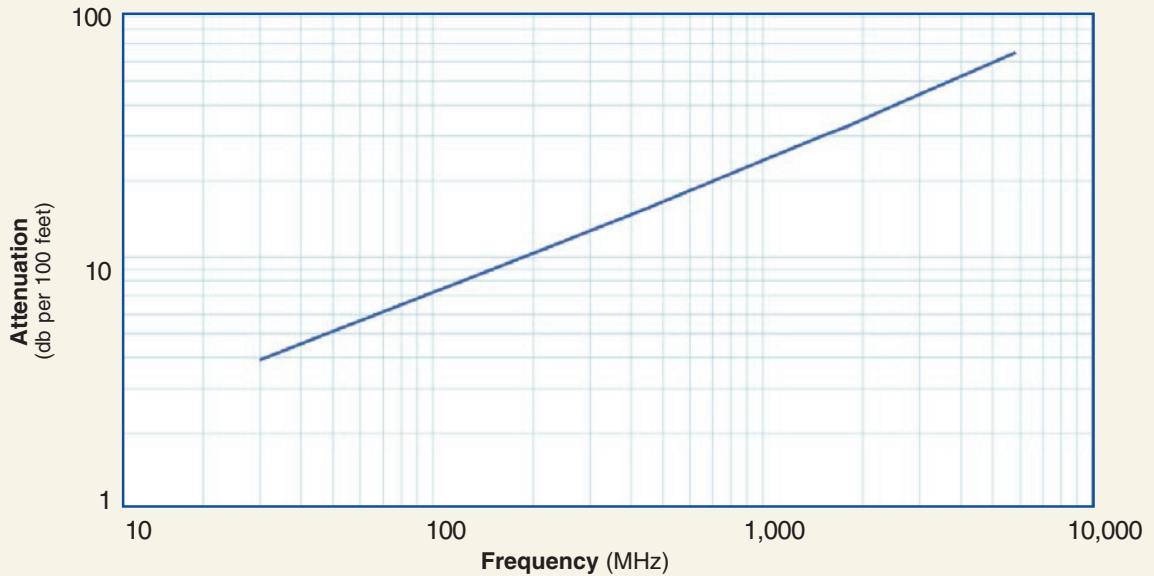
Construction Specifications			
Description	Material	In.	(mm)
Inner Conductor	Solid BCCS	0.018	(0.46)
Dielectric	Solid PE	0.060	(1.52)
Outer Conductor	Aluminum Tape	0.065	(1.65)
Overall Braid	Tinned Copper	0.083	(2.11)
Jacket	(see table above)	0.110	(2.79)

Mechanical Specifications			
Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	0.25	(6.4)
Bend Radius: repeated	in. (mm)	1	(25.4)
Bending Moment	ft-lb (N-m)	0.1	(0.014)
Weight	lb/ft (kg/m)	0.0092	(.014)
Tensile Strength	lb (kg)	15	(6.8)
Flat Plate Crush	lb/in. (kg/mm)	10	(0.18)

Environmental Specifications			
Performance Property		°F	°C
Installation Temperature Range		-40/+185	-40/+85
Storage Temperature Range		-94/+185	-70/+85
Operating Temperature Range		-40/+185	-40/+85

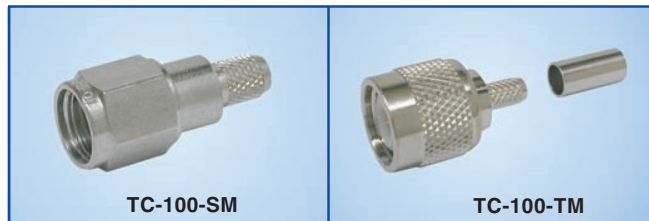
Electrical Specifications			
Performance Property	Units	US	(metric)
Cutoff Frequency	GHz		90
Velocity of Propagation	%		66
Dielectric Constant	NA		2.30
Time Delay	nS/ft (nS/m)	1.54	(5.05)
Impedance	ohms		50
Capacitance	pF/ft (pF/m)	30.8	(101.1)
Inductance	uH/ft (uH/m)	0.077	(0.25)
Shielding Effectiveness	dB		>90
DC Resistance			
Inner Conductor	ohms/1000ft (/km)	81.0	(266)
Outer Conductor	ohms/1000ft (/km)	9.5	(31.2)
Voltage Withstand	Volts DC		500
Jacket Spark	Volts RMS		2000
Peak Power	kW		0.6

**Attenuation vs. Frequency (typical)**



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	5800
Attenuation dB/100 ft	3.9	5.1	8.9	10.9	15.8	22.8	30.1	33.2	35.2	39.8	64.1
Attenuation dB/100 m	12.9	16.7	29.4	35.8	51.9	74.9	98.7	109.0	115.5	130.6	210.3
Avg. Power kW	0.230	0.180	0.100	0.083	0.057	0.039	0.029	0.027	0.025	0.022	0.013

Calculate Attenuation =  $(0.709140) \cdot \sqrt{\text{FMHz}} + (0.001740) \cdot \text{FMHz}$  (interactive calculator available at <http://www.timesmicrowave/telecom>)  
**Attenuation:** VSWR=1.0; Ambient = +25°C (77°F) **Power:** VSWR=1.0; Ambient = +40°C; Inner Conductor = 100°C (212°F);  
 Sea Level; dry air; atmospheric pressure; no solar loading



**Connectors**

Interface	Description	Part Number	Stock Code	VSWR ** Freq. (GHz)	Coupling Nut	Inner Contact Attach	Outer Contact Attach	Finish* Body /Pin	Length in (mm)	Width in (mm)	Weight lb (g)
SMA male	Straight Plug	TC-100-SM	3190-1551	<1.25:1 (<3)	Hex	Solder	Crimp	SS/G	1.0 (25.4)	0.32 (8.1)	0.015 (6.8)
TNC male	Straight Plug	TC-100-TM	3190-1552	<1.25:1 (<3)	Knurl	Solder	Crimp	S/G	1.4 (35.6)	0.59 (15.0)	0.045 (20.4)

\* Finish metals: N=Nickel, S=Silver, G=Gold, SS=Stainless Steel, A=Alballoy \*\*VSWR spec based on 3 foot cable with a connector pair



**Install Tools**

Type	Part Number	Stock Code	Description
Crimp Tool	CT-240/200/195/100	3190-667	Crimp tool for LMR-100 connectors
Cutting Tool	CCT-01	3190-1544	Cable end flush cut tool
Replacement Blade	RB-01	3190-1609	Replacement blade for cutting tool

