

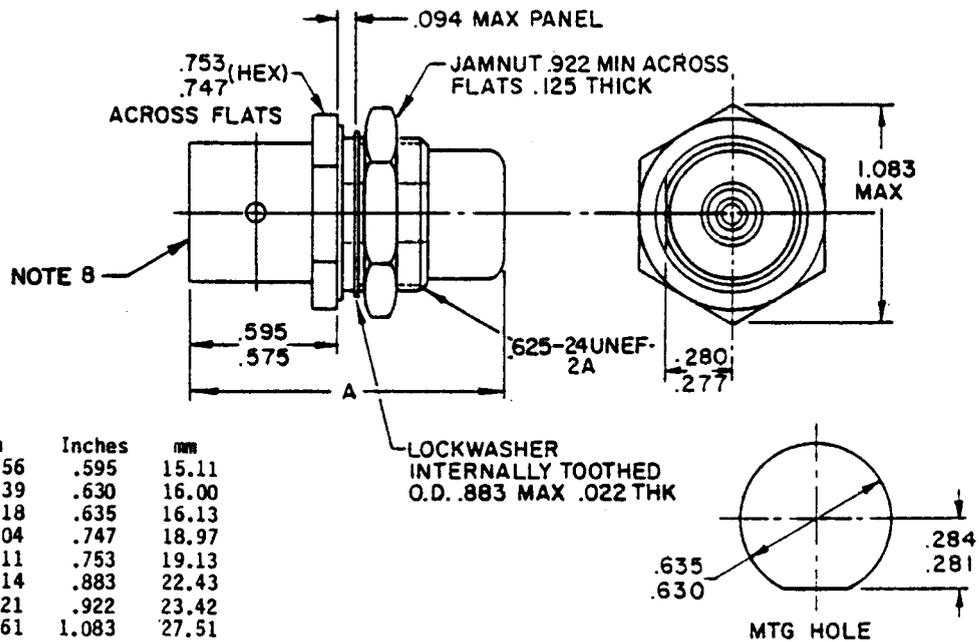
MILITARY SPECIFICATION SHEET

CONNECTORS, RECEPTACLE, ELECTRICAL, COAXIAL, RADIO FREQUENCY,
 (SERIES C, (CABLED-RECEPTACLE, FEMALE, JAM NUT, FRONT MOUNTED, CLASS 2)

INACTIVE FOR NEW DESIGN AFTER
 26 Mar 71

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the connectors described herein shall consist of this specification and the latest issue of MIL-C-39012.



Inches	mm	Inches	mm
.022	.56	.595	15.11
.094	2.39	.630	16.00
.125	3.18	.635	16.13
.277	7.04	.747	18.97
.280	7.11	.753	19.13
.281	7.14	.883	22.43
.284	7.21	.922	23.42
.575	14.61	1.083	27.51

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. For dimension A see table I.
4. Dimension A defines the maximum length of the connector when assembled to the appropriate cable.
5. Wrench flats to accommodate standard wrench in accordance with FED-STD-H28, appendix 10.
6. All undimensioned pictorial representations are for reference purposes only.
7. Orientation of body hex flats, mounting flats, and bayonet studs shall be within 3° of that shown.
8. Series C, socket contact interface in accordance with MIL-STD-348.

FIGURE 1. General configuration.

TABLE I. Part number, usage cross reference, basic overall dimensions.

Part number	Applicable cable #	Typical mating connector (optional hardware) <u>1/</u>	Dimensions	Inches (millimeters) <u>2/</u>	
				Minimum	Maximum
Category A - Field serviceable (no special tools required) <u>3/</u>					
M39012/9-0001	M17/29-RG59* M17/30-RG062Δ M17/90-RG71Δ	M39012/15-0001 (M39012/25-0001)	A	1.125(28.58)	1.375(34.93)
M39012/9-0002	M17/28-RG058 M17/84-RG223*	M39012/15-0002 (M39012/25-0001)	A	1.125(28.58)	1.375(34.93)

1/ Optional hardware numbers are in parentheses.

2/ Millimeters are in parentheses.

3/ Not to be used in Air Force equipment.

The RG cables are specified with the basic number. The latest version of each cable shall be applicable.

* Cable to be used when performing tests requiring cable except as in notes @ and Δ.

Δ These are not nominally 50 ohm cables; therefore, when attached to the specified connectors, VSWR, RF leakage, and insertion loss are not applicable.

ENGINEERING DATA:

Nominal impedance: 50 ohms.
Frequency range: 0 to 4,000 MHz.
Voltage rating:
500 volts rms, maximum working voltage at sea level.
125 volts rms, maximum at 70,000 feet.
Temperature rating: -65°C to +165°C.

REQUIREMENTS:

Dimensions and configuration: See figure 1.
Force to engage and disengage:
Longitudinal force: 4-1/2 pounds, maximum.
Torque: 4 inch-pounds, maximum.
Coupling proof torque: Not applicable.
Inspection conditions: Coupling torque not applicable.
Mating characteristics:
Reference MIL-STD-348.
Center contact (female):
Oversize test pin: .098 diameter, minimum (nonclosed entry contacts only).
Insertion depth: .125, minimum.
Number of insertions: One.
Insertion force test: Steel test pin diameter .092, minimum.
Test pin finish: 16 microinches.
Insertion force: 2 pounds, maximum.
Withdrawal force test: Steel test pin diameter .090, maximum.
Withdrawal force: 2 ounces, minimum.
Test pin finish: 16 microinches.
Hermetic seal: Not applicable.
Leakage (pressurized connectors): Not applicable.
Insulation resistance: Method 302 of MIL-STD-202, test condition B, 5,000 megohms, minimum.
Center contact retention: Not applicable.
Corrosion (salt spray): Method 101 of MIL-STD-202, test condition B.
Voltage standing wave ratio (VSWR): From .5 to 4 GHz, or approximately 80 percent of upper cutoff frequency of the cable, whichever is lower; 1.35, maximum.

Swept frequency VSWR test setup:

Item 6: VSWR shall be less than $1.015 + .005 F$ (F in GHz).

Item 16: VSWR shall be less than $1.015 + .005 F$ (F in GHz).

Second step of VSWR checkout procedure: VSWR shall be less than $1.045 + .015 F$ (F in GHz).

Group B inspection: VSWR shall be less than $1.10 + .01 F$ (F in GHz).

Qualification and group C inspection: VSWR shall not exceed 1.15.

Connector durability: 500 cycles, minimum at 12 cycles per minute, maximum. The connector shall meet the mating characteristics and force to engage and disengage requirements.

Contact resistance: In milliohms, maximum:

	<u>Initial</u>	<u>After environment</u>
Center contact	1.0	1.5
Outer contact	.35	Not applicable
Braid to body	.05	Not applicable

Dielectric withstanding voltage: Method 301 of MIL-STD-202, 1,500 volts rms, minimum at sea level.

Vibration, high frequency: Method 204 of MIL-STD-202, test condition B.

Shock: Method 213 of MIL-STD-202, test condition I.

Temperature cycling: Method 102, test condition C, MIL-STD-202, except test high temperature shall be $+85^{\circ}\text{C}$.

Thermal shock: Not applicable.

Moisture resistance: Method 106 of MIL-STD-202. No measurements at high humidity. Insulation resistance shall be at least 200 megohms within 5 minutes after removal from humidity.

Corona level:

Voltage: 375 volts rms, minimum.

Altitude: 70,000 feet.

RF high potential withstanding voltage:

Voltage and frequency: 1,000 volts rms at a frequency from 5 to 7.5 MHz.

Leakage current: Not applicable.

Cable retention force:

Noncrimp assemblies: 40 pounds, minimum.

Crimp assemblies:

50 pounds, minimum for cables .155 - .189 OD.

60 pounds, minimum for cables .190 - .229 OD.

75 pounds, minimum for cables .230 - .249 OD.

90 pounds, minimum for cables .250 OD and larger.

Coupling mechanism retention force: Not applicable.

RF leakage: -55 dB minimum, tested at a frequency between 2 and 3 GHz.

Insertion loss:

.10 dB maximum tested at 4 GHz.

.05 \sqrt{F} (GHz) dB maximum tested at 3 GHz.

Part number: M39012/9 (dash number from table I).

TABLE II. Group qualification.

Group	Submission and qualification of any of the following connectors	Qualifies the following connectors
	M39012/9	M39012/9
I	-0002	-0001 -0002
II	-0001	-0001

NOTE: If a connector manufacturer produces a connector which meets all the requirements for two or more connector part numbers (within the same series), the manufacturer may receive qualification approval for two or more connector part numbers qualifying the one connector. It is not necessary that such connectors be in the same group. Each connector, however, must be marked with its own appropriate part number. For group qualification, the connectors must be of similar design.

TABLE III. Cross reference of part numbers.

Preferred part number M39012/9	Substitute for part number or type designation <u>1/</u>
-0001 -0002	UG-631/U UG-704/U, UG-1767/U, UG-1768/U, M39012/9-0003, M39012/9-0004

1/ The superseded part number or the type designation is for cross reference only. Where a superseded part number or type designation is not given, none was assigned or will be assigned. The part number M39012/9-XXXX shall be used in all cases for marking and identifying the connector.

Revision letters are not used to denote changes due to the extensiveness of the changes.

Custodians:

Army - CR
Navy - EC
Air Force - 85

Review activities:

Army - AR, CR, MI
Navy - OS
Air Force - 11, 17, 99
DLA - ES

User activities:

Army - AT, AV, ME
Navy - AS, MC, SH
Air Force - 19

Preparing activity:
Army - CR

Agent:
DLA - ES

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