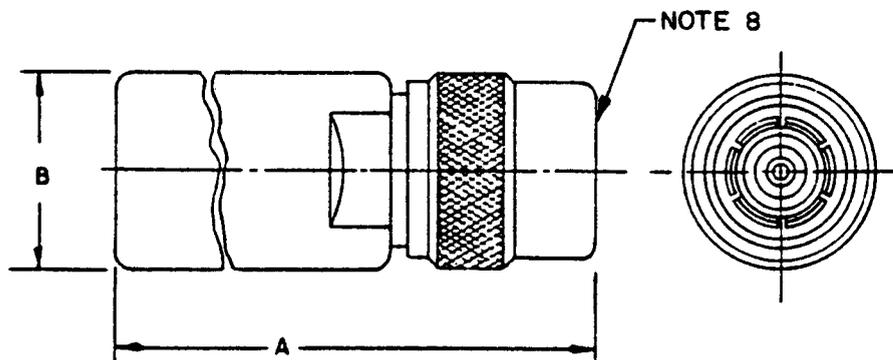


MILITARY SPECIFICATION SHEET
CONNECTORS, PLUG, ELECTRICAL, COAXIAL, RADIO FREQUENCY,
(SERIES C, (CABLED), MALE, CLASS 2)

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.



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. For dimension A and B, see table I.
4. Dimension B is the largest overall diameter of the connector.
5. Wrench flats are to accommodate standard wrench in accordance with FED-STD-H28, appendix 10.
6. Dimension A defines the maximum length of the connector when assembled to the appropriate cable.
7. All undimensioned pictorial representations are for reference purposes only.
8. Series C, pin contact interface in accordance with MIL-STD-348.

FIGURE 1. General configuration.

TABLE I. Dash numbers, cross reference, and dimensions.

Dash number <u>2/</u>	Applicable cable M17/#	Typical mating connector 39012/9- (optional hardware) <u>1/</u>	Dimensions	Inches (millimeters) maximum
Category A - Field serviceable (no special tools required)				
0001	29-RG59 *	M39012/9-0001	A	1.468(37.29)
	030-RG062Δ 90-RG71Δ		B	.781(19.94)
0002	028-RG058	M39012/9-0002	A	1.500(38.10)
	084-RG223*		B	.781(19.84)

1/ Optional hardware M39012/25-0001.

2/ For cross reference of dash number to superseded part number or type designation, see table III.

The latest version of each cable shall be applicable.

* Cable to be used when performing tests requiring cable except as in note Δ.

Δ These are not 50 ohm cables; therefore, when attached to 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 $+165^{\circ}\text{C}$.

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.

Outer contact:

Test ring ID: .411 maximum, 16 microinch finish.

Insertion force: 7 pounds, maximum when inserted a minimum of .125.

Contacts with slotted members: Shall contact a .419 minimum diameter ring within .031 of their tip ends.

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 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.

Thermal shock: Method 107 of MIL-STD-202, test condition B, except test high temperature shall be +85°C.

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:

Altitude: 70,000 feet.

Voltage: 375 volts rms, minimum.

RF high potential withstanding voltage:

Voltage and frequency: 1,000 volts rms at 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: 100 pounds, minimum.

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: M39012/15- (dash number from table I).

TABLE II. Group qualification.

Group	Submission and qualification of any of the following connectors	Qualifies the following connectors
	M39012/15	M39012/15
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 M39012/15-	Substitute for part number or type designation <u>1/2/</u>
	<u>UG-</u>
0001	627/U
0002	709/U, 1779/U, 1780/U, M39012/15-0003, M39012/15-0004

- 1/ The superseded part number or the type designation is for cross reference only. The part number M39012/15-XXXX shall be used in all cases for marking and identifying the connector.
- 2/ The basic type designation includes all letter versions of the specified number, e.g. UG-18/U includes UG-18A/U, UG-18B/U, etc.

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

Custodians:

Army - CR
Navy - EC
Air Force - 85

Preparing activity:

Army - CR

Review activities:

Army - CR, EA, MI
Air Force - 11, 17, 99
DLA - ES

Agent:

DLA - ES

(Project 5935-3518-8)

User activities:

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