INCH-POUND

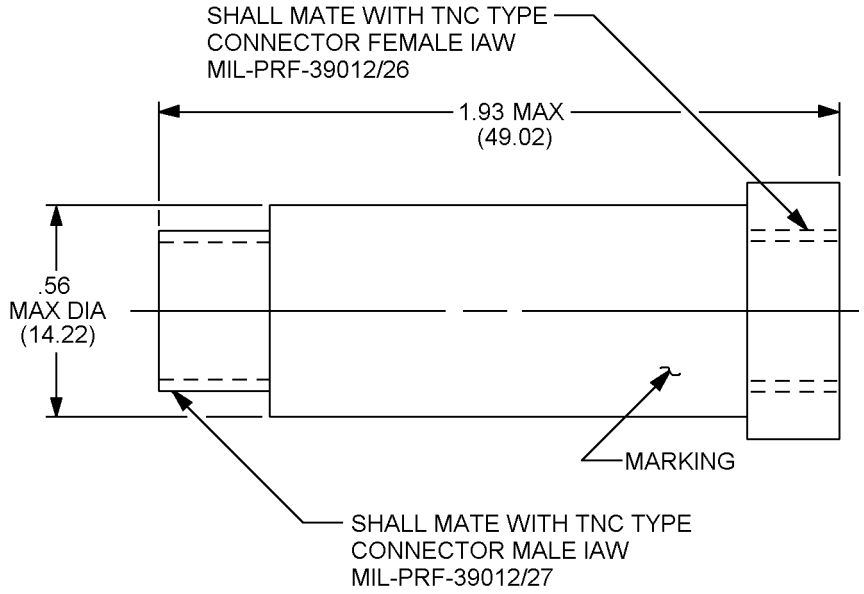
MIL-DTL-3933/17B
W/AMENDMENT 1
1 July 2004
SUPERSEDING
MIL-DTL-3933/17B
7 November 2002

DETAIL SPECIFICATION SHEET

ATTENUATORS, FIXED, COAXIAL LINE (TNC CONNECTORS), FREQUENCY RANGE: DC TO 18 GHz, LOW POWER

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

The requirements for acquiring the product described herein shall consist of this specification and the latest issue of MIL-DTL-3933.



NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Metric equivalents are in parentheses.

FIGURE 1. Dimensions and configuration.

ENGINEERING DATA:

Attenuators for use in equipment in which precision and stability are a secondary consideration.

Operating frequency range: DC to 4.5 GHz for PINs M3933/17-01 through -06; DC to 18 GHz for PINs M3933/17-07 through -24.

Test frequency ranges for SWR and attenuation measurements, measured or recorded, when using an Automatic Network Analyzer (ANA) or equivalent:

100 MHz (or lower) to 4.5 GHz for PINs M3933/17-01 through -06;
100 MHz (or lower) to 18 GHz for PINs M3933/17-07 through -24.

Basic test frequencies for sensitive measurements like connector repeatability, temperature sensitivity, power sensitivity and any other measurements where a 'delta' spec is imposed:

2.0 GHz for PINs M3933/17-01 through -06;
8.0 GHz for PINs M3933/17-07 through -24.

Operating temperature range: -55°C to 125°C.

Maximum weight: See table I.

REQUIREMENTS:

Dimensions and configuration: See figure 1.

Nominal impedance: 50 ohms.

Attenuation: See table I. Stability and sensitivity:

Maximum change in attenuation after:	**Up to 10 dB, inclusive (dB)**	**Over 10 dB (dB/dB)**
Temperature change or thermal shock	0.5	0.05
Vibration or shock	0.5	0.05
Moisture resistance or salt spray	0.5	0.05
Peak power	0.5	0.05

Frequency sensitivity, maximum: 0.4 dB/dB/GHz.
Temperature sensitivity of attenuation, maximum: 0.0006 dB/dB/°C.

Power: See table I.
Power sensitivity for full input power, maximum: 0.005 dB/dB/Watt.

VSWR: See table I.

Connector repeatability, maximum variation in attenuation: 0.04 dB.

Part or Identifying Number (PIN): M3933/17- (and dash number from table I).

TABLE I. Electrical characteristics.

Dash number	Attenuation dB			Maximum power input at 25°C		VSWR maximum 1/					Weight (oz) Max	Dimension A (inches) maximum
	Nominal	Deviation		AV (W) 3/ (continuously)	Peak 2/ (kW)	DC to 4.5 GHz	DC to 4.0 GHz	4.0 to 8.0 GHz	8.0 to 12.4 GHz	12.4 to 18.0 GHz		
		DC to 4.5 GHz	DC to 18 GHz									
01 NS	1	±0.3	---	4	0.2	1.25:1	---	---	---	---	3.0	---
02 NS	2	±0.4	---	4	0.2	1.25:1	---	---	---	---	3.0	---
03 NS	3	±0.4	---	4	0.2	1.25:1	---	---	---	---	3.0	---
04 NS	4	±0.4	---	4	0.2	1.25:1	---	---	---	---	3.0	---
05 NS	5	±0.4	---	4	0.2	1.25:1	---	---	---	---	3.0	---
06 NS	6	±0.4	---	4	0.2	1.25:1	---	---	---	---	3.0	---
07 NS	20	---	±0.6	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
08 NS	30	---	±0.9	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
09 NS	1	---	±0.4	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
10 NS	2	---	±0.4	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
11 NS	3	---	±0.4	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
12 NS	4	---	±0.4	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
13 NS	5	---	±0.4	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---

See footnotes at end of table.

TABLE I. Electrical characteristics - Continued.

Dash number	Attenuation dB				Maximum power input at 25°C		VSWR maximum 1/					Weight (oz) Max	Dimension A (inches) maximum
	Nominal	Deviation			AV (W) 3/ (continuously)	Peak 2/ (kW)	DC to 4.5 GHz	DC to 4.0 GHz	4.0 to 8.0 GHz	8.0 to 12.4 GHz	12.4 to 18.0 GHz		
			DC to 4.5 GHz	DC to 18 GHz									
14 N S	6		---	±0.4	2	0.2	---	1.15:1	1.20:1	1.15:1	1.35:1	3.0	---
15 N S	7		---	±0.5	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
16 N S	8		---	±0.5	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
17 N S	10		---	±0.5	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
18 N S	12		---	±0.5	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
19 N S	15		---	±0.5	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
20 N S	25		---	±0.8	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
21 N S	35		---	±0.9	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
22 N S	40		---	±1.0	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
23 N S	50		---	±1.4	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---
24 N S	60		---	±1.5	2	0.2	---	1.15:1	1.20:1	1.25:1	1.35:1	3.0	---

1/ VSWR value is for both ends.

2/ Peak power for a duty cycle of 5×10^{-4}, maximum pulse duration of 5 microseconds.

3/ Power input is derated linearly to 0.5 watts at +125°C.

NOTES

Referenced documents. In addition to MIL-DTL-3933, this specification sheet references MIL-PRF-39012/26 and MIL-PRF-39012/27.

The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5985-1319)

Review activities:
Army - MI
Navy - AS, MC, SH
Air Force - 99

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