

INCH-POUND

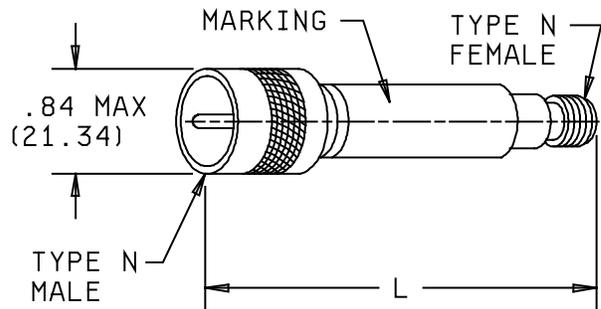
MIL-DTL-3933/18H  
12 February 2014  
SUPERSEDING  
MIL-DTL-3933/18G  
7 April 2011

DETAIL SPECIFICATION SHEET

ATTENUATORS, FIXED, SPACE LEVEL, NON SPACE LEVEL,  
COAXIAL LINE (SERIES N),  
FREQUENCY RANGE: DC TO 12.4 GHZ AND DC TO 18 GHZ,  
CLASS III, 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 sheet and 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:

Operating frequency range: DC to 12.4 GHz and DC to 18 GHz.

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

100 MHz (or lower) to 12.4 GHz for dash numbers 01 through 20;  
100 MHz (or lower) to 18.0 GHz for dash numbers 21 through 24.

Basic test frequencies for sensitive measurements like connector repeatability, temperature sensitivity, power sensitivity and any other measurements where a 'delta' specification is imposed: 6.0 GHz for dash numbers 01 through 20; 8.0 GHz for dash numbers 21 through 24.

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

Maximum weight: See table I.

## REQUIREMENTS:

Dimensions and configuration: See figure 1 and table I.

Nominal impedance: 50 ohms.

Attenuation: See table I.

Stability and sensitivity:

<b>Maximum change in attenuation after:</b>	<b>up to 10 dB, inclusive (dB)</b>	<b>over 10 dB (dB/dB)</b>
Temperature change or thermal shock	0.05	0.005
Vibration or shock	0.1	0.01
Moisture resistance or salt spray	0.2	0.02
Peak power	0.05	0.005

Frequency sensitivity, maximum: 0.1 dB/dB/GHz.

Temperature sensitivity of attenuation, maximum: 0.0004 dB/dB/°C.

Power: See table I.

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

VSWR: See table I.

Terminal connectors: The series N connectors shall meet the interface dimensions of MIL-PRF-39012. There shall be a male plug on one end and a female plug on the other end.

Connector repeatability, maximum variation in attenuation: 0.02 dB.

Part or Identifying Number (PIN): M3933/18- (and dash number from table I with three device level designators are space level (T), screened (S) and non-screened (N) options).

Supersession data: See table III.

TABLE I. Electrical characteristics.

Dash number	Attenuation dB			Maximum power input		VSWR $\frac{1}{}$ Maximum				Weight (oz) Max	Dimension L (inches) Maximum
	Nominal	Deviation		AV (W) at 25°C (continuously) $\frac{2}{}$	Peak $\frac{3}{}$ (kW)	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 12.4 GHz	DC to 18 GHz								
01 N S T	3	±0.2	---	2	1.0	1.15:1	1.20:1	1.25:1	---	5	2.70 (68.58)
02 N S T	6	±0.2	---	2	1.0	1.15:1	1.20:1	1.25:1	---	5	2.70 (68.58)
03 N S T	10	±0.4	---	2	1.0	1.15:1	1.20:1	1.25:1	---	5	2.70 (68.58)
04 N S T	20	±0.4	---	2	1.0	1.15:1	1.20:1	1.25:1	---	5	2.70 (68.58)
05 $\frac{4}{}$ N S T	30	±0.8	---	2	1.0	1.15:1	1.20:1	1.25:1	---	5	2.70 (68.58)
06 N S T	40	±0.8	---	2	1.0	1.15:1	1.20:1	1.25:1	---	5	2.70 (68.58)
07 N S T	50	±1.25	---	2	1.0	1.15:1	1.20:1	1.25:1	---	5	2.70 (68.58)
08 N S T	60	±1.25	---	2	1.0	1.15:1	1.20:1	1.25:1	---	5	2.70 (68.58)
09 N S T	1	±0.4	---	5	1.0	1.15:1	1.20:1	1.25:1	---	3	2.70 (68.58)
10 N S T	2	±0.4	---	5	1.0	1.15:1	1.20:1	1.25:1	---	3	2.70 (68.58)
11 N S T	3	±0.3	---	5	1.0	1.15:1	1.20:1	1.25:1	---	3	2.70 (68.58)
12 N S T	5	±0.3	---	5	1.0	1.15:1	1.20:1	1.25:1	---	3	2.70 (68.58)

See footnotes at end of table I.

TABLE I. Electrical characteristics - Continued.

Dash number	Attenuation dB			Maximum power input		VSWR <sup>1/</sup> Maximum				Weight (oz) Max	Dimension L (inches) Maximum
	Nominal	Deviation		AV (W) at 25°C (continuously) <sup>2/</sup>	Peak <sup>3/</sup> (kW)	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 12.4 GHz	DC to 18 GHz								
13 N S T	6	±0.3	---	5	1.0	1.15:1	1.20:1	1.25:1	---	3	2.70 (68.58)
14 N S T	10	±0.4	---	5	1.0	1.15:1	1.20:1	1.25:1	---	3	2.70 (68.58)
15 N S T	13	±0.5	---	5	1.0	1.15:1	1.20:1	1.25:1	---	3	2.70 (68.58)
16 N S T	20	±0.5	---	5	1.0	1.15:1	1.20:1	1.25:1	---	3	2.70 (68.58)
18 N S T	40	±0.8	---	5	1.0	1.15:1	1.20:1	1.25:1	---	5	2.70 (68.58)
19 N S T	50	±1.0	---	5	1.0	1.15:1	1.20:1	1.25:1	---	5	2.70 (68.58)
20 N S T	60	±1.0	---	5	1.0	1.15:1	1.20:1	1.25:1	---	5	2.70 (68.58)
21 N S T	3	---	±0.3	2	0.2	1.12:1	1.15:1	1.18:1	1.20:1	3	2.70 (68.58)
22 N S T	6	---	±0.3	2	0.2	1.12:1	1.15:1	1.18:1	1.20:1	3	2.70 (68.58)
23 N S T	10	---	±0.5	2	0.2	1.12:1	1.15:1	1.18:1	1.20:1	3	2.70 (68.58)
24 N S T	20	---	±0.5	2	0.2	1.12:1	1.15:1	1.18:1	1.20:1	3	2.70 (68.58)

<sup>1/</sup> VSWR value is for both ends.

<sup>2/</sup> Power input is derated linearly to 0 watts at +125°C.

<sup>3/</sup> Peak power for a duty cycle of  $5 \times 10^{-4}$ ; maximum pulse duration of 5 microseconds.

<sup>4/</sup> Canceled and replaced with DLA Land and Maritime drawing 13015-05.

TABLE II. Supersession data.

PIN M3933/18-	Supersedes M3933/	
01	12-1	13-1
02	12-2	13-2
03	12-3	13-3
04	12-4	13-4
05 <u>1/</u>	12-5	13-5
06	12-6	13-6
07	12-7	13-7
08	12-8	13-8

1/ Canceled and replaced with DLA Land and Maritime drawing 13015-05.

Referenced documents. In addition to MIL-DTL-3933 this specification sheet references the following document:

MIL-PRF-39012

DLA Land and Maritime drawing 13015

The margins of this specification sheet are marked with vertical lines to indicate where modifications from this revision were made. 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 – 85  
 DLA - CC

Preparing activity:

DLA - CC  
 (Project 5985-2014-002)

Review activities:

Army – MI  
 Navy – AS, MC, SH  
 Air Force - 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.