INCH-POUND

MIL-PRF-29504/2B
12 November 2002
SUPERSEDING
MIL-T-29504/2A
19 December 1989

PERFORMANCE SPECIFICATION SHEET

TERMINI, FIBER OPTIC, CONNECTOR, REMOVABLE, ENVIRONMENT RESISTING, SOCKET TERMINUS, (FOR MIL-C-28876 and MIL-C-83526 CONNECTORS)

Inactive for new design after 15 January 2002
For new design use MIL-PRF-29504/15.

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 MIL-PRF-29504.

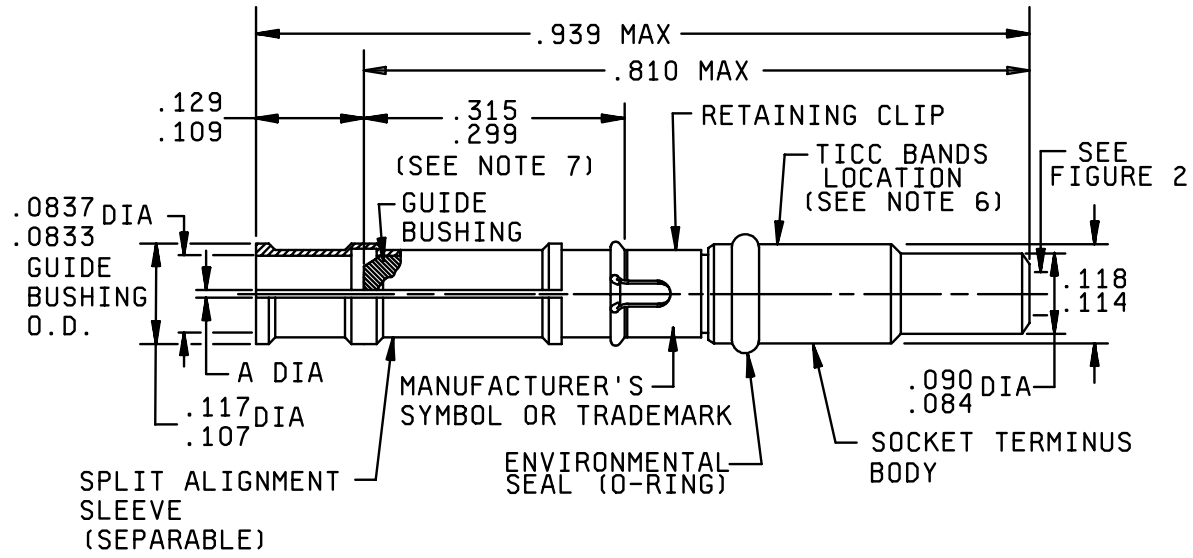
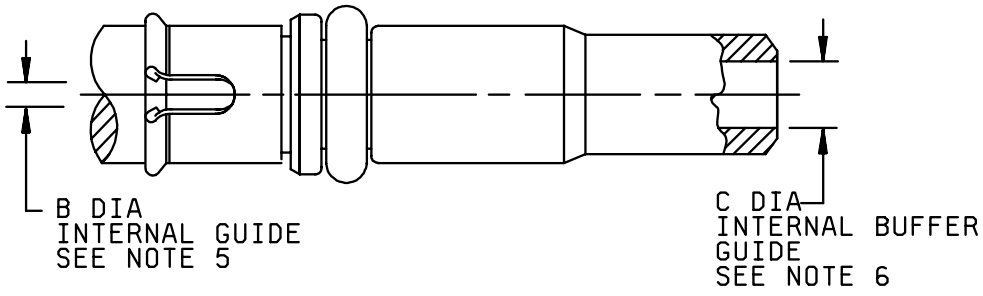


FIGURE 1. Socket terminus

Inches	mm
.0833	2.16
.0837	2.126
.084	2.13
.090	2.29
.107	2.72
.109	2.77
.114	2.90
.117	2.97
.118	3.00
.129	3.28
.299	7.60
.315	8.00
.810	20.57
.939	23.85

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only, except for guide bushing "A" diameter which is based upon 1.00 inch = 25400.0 µm or 1.0 µm = .00003937 inch.
3. All diameters to be concentric within 0.002 inch (0.05 mm).
4. Dimensions apply after plating.
5. For internal configuration and dimensions of terminus rear, see figure 2.
6. The TICC bands shall be at the rear of the pin terminus.
7. Dimensions to be measured with terminus installed in connector insert or equivalent gauge fixture.

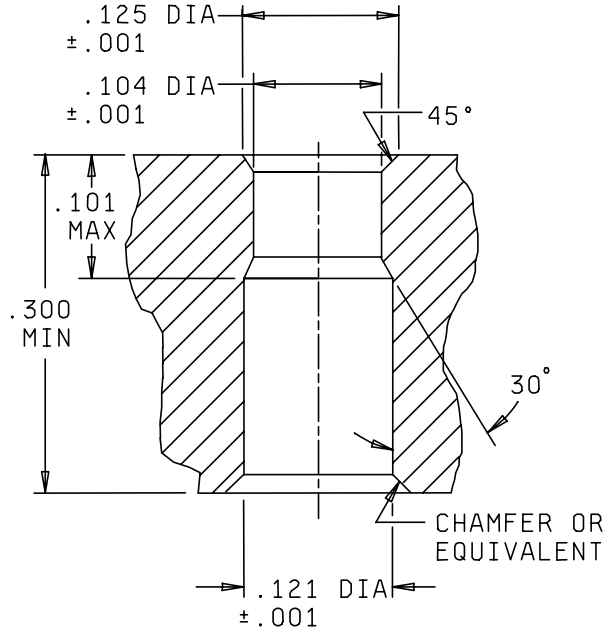
FIGURE 1. Socket terminus - Continued.



B diameter (internal guide)		C diameter (internal buffer guide)	
Inches	mm	Inches	Mm
0.017 0.014	0.43 0.36	0.056 0.053	1.42 1.35

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. All diameters to be concentric within .002 inch (0.05 mm).
4. Dimensions apply after plating.
5. The "B" diameter of the internal guide is used to center coated optical waveguide fiber.
6. The "C" diameter of the internal buffer guide is used to center the optical waveguide fiber buffer.

FIGURE 2. Terminus internal guide and buffer.



Inches	mm
.001	0.03
.101	2.57
.104	2.64
.121	3.07
.125	3.18
.300	7.62

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. All diameters to be concentric within .002 inch (0.05 mm).
4. Dimensions apply after plating.
5. Tolerance on all angles is ± 1°, unless otherwise noted.

FIGURE 3. Insert equivalent fixture for terminus measurement.

REQUIREMENTS:

Design and construction:

Dimensions and configuration: See figures 1 and 2 and table I.

Weight: 1 gram maximum.

Adhesives: Use MIL-PRF-24792 or as approved by the qualifying activity.

Tools: See table II.

Mating termini: MIL-PRF-29504/1 and MIL-PRF-29504/12.

Insertion force: 16 ounces (454 grams) maximum (0.0837 inch (2.126 mm.) diameter gauge pin).

Separation force: 4 ounces (113 grams) minimum (0.0833 inch (2.116 mm) diameter gauge pin).

Crimp sleeve: (for 2.4 mm maximum diameter cable) to be supplied with terminus when specified in the PIN.

Circular runout: Not greater than 2.5 micrometers.

Optical performance:

Insertion loss: The initial insertion loss of a mated pin and socket shall be not greater than 1.5db. The maximum insertion loss of a mated pin and socket at any time during testing shall be not greater than 2.0db.

Environmental/mechanical: Termini shall be tested to the following MIL-PRF-28876 environmental and mechanical requirements. Change in optical transmittance and optical discontinuity requirements shall be as specified in MIL-PRF-28876.

Impact
Vibration
Shock
Thermal shock
Temperature/humidity cycling
Temperature cycling
Temperature life
Flammability
Ozone exposure

To qualify or requalify termini to this specification sheet, all requirements of MIL-PRF-28876 shall be met using the qualifying terminus in a connector qualified to MIL-PRF-28876.

Qualification connector: The qualification connector for this terminus shall be a qualified MIL-PRF-28876 connector.

Test specimens: Test specimens shall be constructed using a 62.5/125 micron optical fiber within a single fiber cable with an outer diameter not greater than 2.4 mm.

Part or identifying number (PIN): See table III and paragraph 6.6 of MIL-PRF-29504.

M29504/2	-XXXX	X
Basic specification and specification sheet	TICC Code (see table I)	Crimp sleeve (optional)

Supersession data: See table III.

TABLE 1. TICC numbers to fiber diameter cross reference.

TICC	A diameter (hole diameter)	
	Inches +0.0001 -0.0000	µm +2.5 -0.0
4019	.0047	119.5
4020	.0048	122.0
4021	.0049	124.5
4022	.0050	127.0
4023	.0051	129.5
4024	.0052	132.0
4025	.0053	134.5
4026	.0054	137.0
4027	.0055	139.5
4028	.0056	142.0
4029	.0057	145.0
4030	.0076	193.0
4031	.0077	195.5
4032	.0078	198.0
4033	.0079	200.5
4034	.0080	203.0
4035	.0081	205.5
4036	.0082	208.0
4037	.0083	211.0

TABLE II. Tools

Tool	Part number
Insertion tool	NAVSEA DWG 6872813-2 (NSN 5120-01-144-5338)
Removal tool	NAVSEA DWG 6872813-6 (NSN 5120-01-419-2942)
Polishing tool	Packard Hughes PN 4569100H or equivalent
Alignment sleeve tool	NAVSEA DWG 6872813-4 (NSN 5998-01-147-0198)

TABLE III. The PIN and supersession data.

TICC	PIN M29504/01-	Superseded PIN M28876/16-	Superseded manufacturer's PIN	CAGE
-4019 1/	4019	048XXX 2/	44970017048 0110	91662
			1093202-048FXXXS 2/	53669
-4020 1/	4020	049XXX	1093202-049FXXXS	53669
-4021 1/	4021	050XXX	1093202-050FXXXS	53669
-4022 1/	4022	051XXX	1093202-051FXXXS	53669
-4023 1/	4023	052XXX	1093202-052FXXXS	53669
-4024 1/	4024	053XXX	1093202-053FXXXS	53669
-4025 1/	4025	054XXX	1093202-054FXXXS	53669
-4026 1/	4026	055XXX	1093202-055FXXXS	53669
-4027 1/	4027	056XXX	1093202-056FXXXS	53669
-4028 1/	4028	057XXX	44970017057 7000	91662
			1093202-057FXXXS	53669
-4029 1/	4029	058XXX	1093202-058FXXXS	53669
-4030 1/	4030	077XXX	1093202-077FXXXS	53669

TABLE III. The PIN and supersession data – Continued.

-4031 1/	4031	078XXX	1093202-078FXXXS	53669
-4032 1/	4032	079XXX	1093202-079FXXXS	53669
-4033 1/	4033	080XXX	1093202-080FXXXS	53669
-4034 1/	4034	081XXX	1093202-081FXXXS	53669
-4035 1/	4035	082XXX	1093202-082FXXXS	53669
-4036 1/	4036	083XXX	1093202-083FXXXS	53669
-4037 1/	4037	084XXX	1093202-084FXXXS	53669

1/ Inactive for new design.

2/ X - Indicates all numerical combinations possible.

Usage: Termini compliant with this specification sheet may be used in connectors other than MIL-PRF-28876 at the discretion of the acquiring activity.

Patent notice: The Government does not have royalty-free license under the following patents for the benefit of manufacturers of the item, either for the Government or for use in equipment to be delivered to the Government.

Patent number	Patent expiration date
US 4707068	11/17/2004

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

Review activities:
Navy - AS
Air Force - 03, 13, 19, 93, 99
NASA - NA
DIA - DI

Preparing activity:
Navy - SH

Agent:
DLA - CC

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