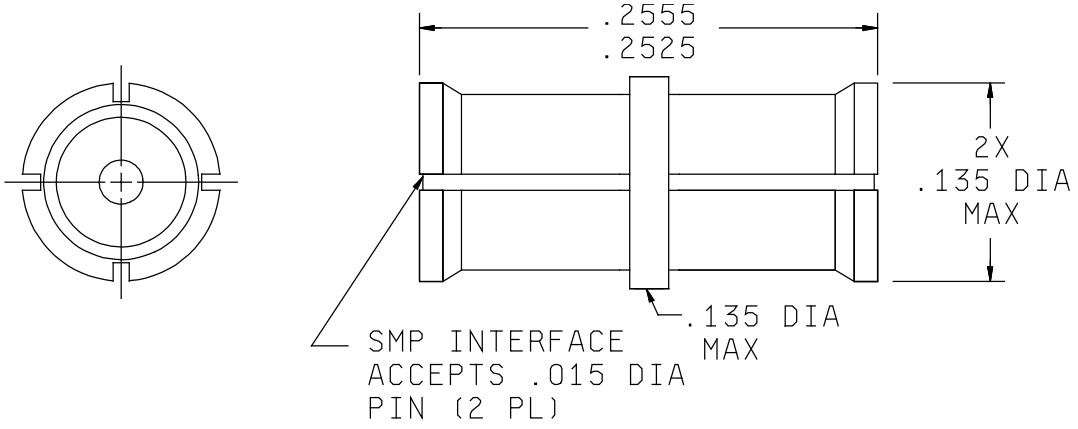
REVISIONS			
LTR	**DESCRIPTION**	**DATE**	**APPROVED**
A	Add interchangeability statement to page 8.	7 April 1994	Randy Larson
B	Requirement upgrade.	29 September 1994	Charles Koeller
C	Add new shroud design. Add CAGE 82316 as source of supply.	18 January 1995	Randy Larson
D	Changes in NOR incorporated.	3 April 1995	Randy Larson
E	Changes in NOR incorporated.	7 September 1995	Randy Larson
F	Changes in NOR incorporated.	23 October 1997	Robert Heber
G	Dimensional changes to flange. Full detent force to disengage 5 pounds, minimum. Clarify radial misalignment.	5 February 1999	Robert Heber
H	Relocate dimension ".010 ±.001" in figure 2. Delete all figure numbers from the table and reference "MIL-STD-348".	3 May 1999	Robert Heber
J	PIN and source update.	3 August 2001	Robert Heber
K	Changes to NOR incorporated	10 September 2002	Robert Heber
L	Changes to NOR incorporated	17 January 2003	Robert Heber
M	PIN numbers for CAGE 00779 updated	18 August 2005	Richard Taylor
N	Changes to NOR incorporated	1 February 2007	Richard Taylor
P	Add test pin requirements and reformat. Add source 95077	21 May 2009	Abdonasser M. Abdouni
R	Update nickel plating requirements in accordance with SAE-QQ-N-290.	28 November 2014	Abdonasser M. Abdouni

THE ORIGINAL FIRST PAGE OF THIS DRAWING HAS BEEN REPLACED.

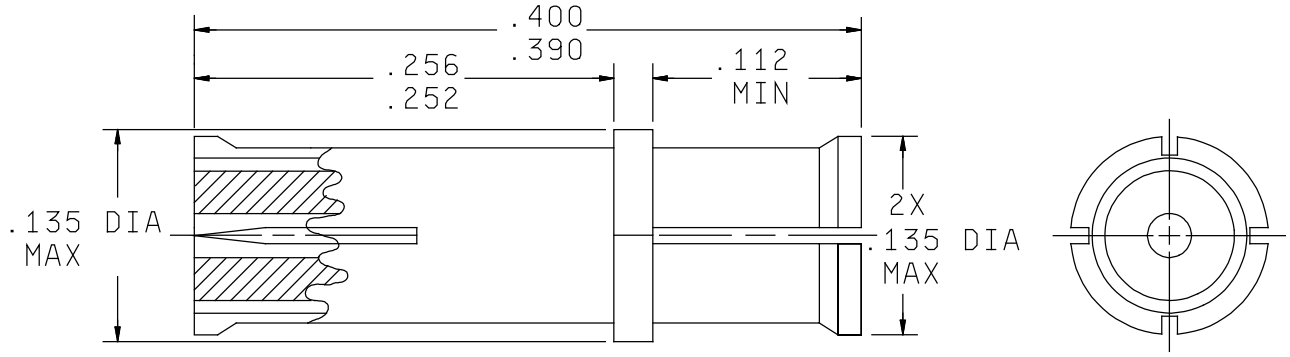
Prepared in accordance with ASME Y14-100.

REV																	
PAGE																	
REV STATUS OF PAGES	**REV**	R	R	R	R	R	R	R	R	R							
	PAGE	1	2	3	4	5	6	7	8	9							

PMIC G	**PREPARED BY** Ron Gary	**DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO 43218-3990**
Original date of drawing 31 March 1994	**CHECKED BY** C. W. Koeller **APPROVED BY** Randy Larson	**TITLE** **CONNECTOR, ELECTRICAL, COAXIAL, RADIO FREQUENCY, SHROUD 2 HOLE PIN AND ADAPTER, ELECTRICAL, COAXIAL, RF, SOCKET CONTACT, SERIES SMP TO SMP**
	SIZE A / **CAGE CODE** 037Z3 / **REV** R	**DWG. NO.** 94007 / **PAGE** 1 OF 9



PIN 94007ZCG-1

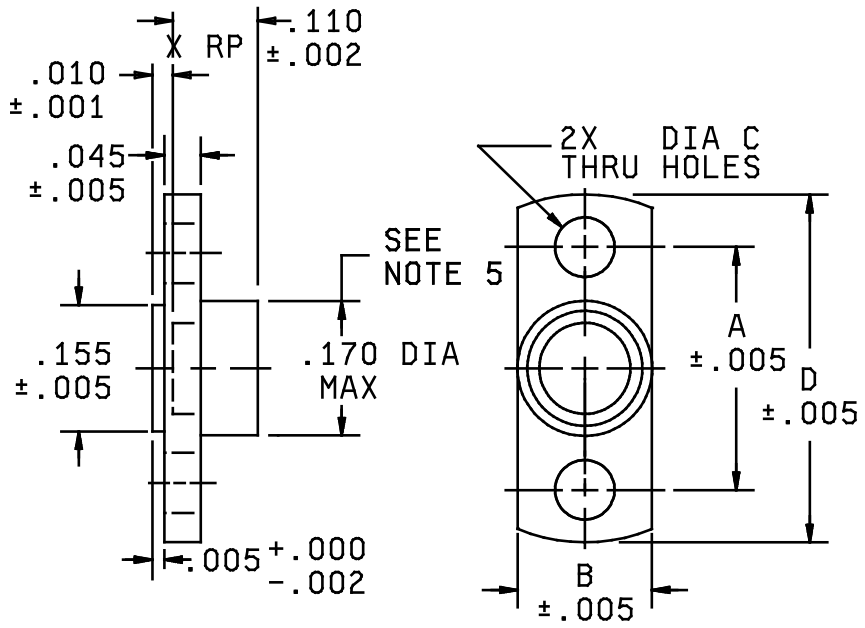


PIN 94007ZCG-2

Inches	mm	Inches	mm
.015	0.38	.2555	6.490
.112	2.79	.256	6.50
.135	3.43	.390	9.91
.252	6.40	.400	10.16
.2525	6.414		

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. All undimensioned pictorial configurations are for reference purposes only.
4. Special tools shall be required for assembly. Contact manufacturer.

FIGURE 1. General configuration, adapter.



Inches	mm	Inches	mm	Inches	mm
.002	0.05	.155	3.94	.352	8.94
.005	0.13	.187	4.75	.400	10.16
.045	1.14	.223	5.66	.470	11.94
.073	1.85	.235	5.97	.480	12.19
.098	2.49	.282	7.16	.481	12.22
.102	2.59	.328	8.33	.625	15.88

Part or Identifying Number (PIN)	Dimension A	Dimension B	Dimension C	Dimension D	Shroud design 1/
94007ZSP-3	.328	.187	.098	.480	Full detent
94007ZSP-3L					Limited detent
94007ZSP-3S					Smooth bore
94007ZSP-4	.481	.223	.102	.625	Full detent
94007ZSP-4L					Limited detent
94007ZSP-4S					Smooth bore
94007ZSP-5	.282	.165	.073	.400	Full detent
94007ZSP-5L					Limited detent
94007ZSP-5S					Smooth bore
94007ZSP-6SC	.352	.235	.073	.470	Smooth bore

1/ See MIL-STD-348 for interface dimensions.

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. All undimensioned pictorial configurations are for reference purposes only.
4. Special tools shall be required for assembly. Contact manufacturer.
5. Dimension to be .235 (5.79 mm) ±.005 (0.13 mm) when using 94007ZSP-6SC.

FIGURE 2. General configuration, shroud.

ENGINEERING DATA:

Nominal impedance: 50 ohms.

Frequency range:

DC to 40 GHz.

RF leakage: -80 dB to 3 GHz. -65 dB from 3 to 26.5 GHz minimum.

Voltage rating: 335 V rms maximum at sea level.
65 V rms at 70,000 feet.

Operating temperature: -65°C to +165°C.

REQUIREMENTS: (All electrical and mechanical requirements shall be maintained during radial misalignment. Requirements of drawing 84148 are applicable.)

Dimensions and configurations: See figures 1and 2.

Interface dimensions: In accordance with MIL-STD-348A.

Force to engage:

Full detent: 15 pounds maximum.

Limited detent: 10 pounds maximum.

Smooth bore: 2 pounds maximum.

Force to disengage: 5 pounds minimum (full detent), 2 pounds minimum (limited detent), and .5 pound minimum (smooth bore).

Center contact inspection conditions (after heat treat)

Oversize test pin:

Test pin diameter: .0165 inch +.0001/-.0000 inch.

Insertion depth: .065 inch minimum, .070 inch maximum.

Number of insertions: 10.

Insertion force test:

Test pin diameter: .0160 inch +.0001/-.0000 inch.

Insertion force: 24 ounces, maximum.

Insertion depth: .055 inch minimum, .065 inch maximum.

Withdrawal force test:

Test pin diameter: .0140 +0000/-.0001 inch.

Withdrawal force: 0.5 ounce, minimum.

Insertion depth: .055 inch minimum, .065 inch maximum.

Radial misalignment: Total radial misalignment between centerlines of connector shroud or mating planes, .010 inch

(0.25 mm), min (.020 min (0.51 mm), total for 94007ZSP-6SC).

Axial misalignment: .000/.010 (0.00/0.25 mm).

Coupling proof torque: Not applicable.

Hermetic seal: Not applicable.

Leakage (pressurized connectors): Not applicable.

Center contact retention: 1.5 pounds minimum axial force (Socket contact adapter only).

Radial torque: Not applicable.

Voltage standing wave ratio:

DC to 23 gigahertz: 1.10:1 maximum.

23 to 26.5 gigahertz: 1.15:1 maximum.

26.5 to 40 gigahertz: 1.7:1 maximum.

VSWR procedure.

The VSWR shall be measured in accordance with the following procedure or a method acceptable to the Government.

Part should be tested using a Network Analyzer with the Time Domain (TDR) option installed. This is essential to allow the effect of the adapters to be "gated" out. The recommended network analyzer systems include Hewlett Packard HP 8510. Wiltron 360 or equivalent. The printer/plotter and the computer should be any unit compatible to the system.

The device under test (DUT) shall consist of DSCC PIN 94007ZCG-1 or PIN 94007ZCG-2 mated at both ends with adapters capable of performing to 40 GHz such as CDI PIN 225-135-1CC (male). 224-135-1CC (female) or M/A Com PIN 224-135-1CC or equivalent.

Calibration of the system should be performed using the manufacturer's calibration kits and the recommended calibration procedures. The frequency range shall be DC to 40 GHz. The VSWR calibration test setup shall be verified using the manufacturers verification kits. The calibrated system VSWR shall be less than 1.02 + .001F (F in GHZ).

The VSWR of the DUT shall be measured using the procedures described in the manufacturer's operating instructions. The time domain shall then be used to remove the effects of the test adapter.

The output shall be generated using the appropriate printer/plotter.

Moisture resistance: MIL-STD-202, method 106, except step 7b shall be omitted. Resistance shall be 1,000 megohms within 5 minutes after removal from humidity (Socket contact adapter only).

Contact resistance (in milliohms, maximum):

	Initial
Center contact	6.0
Outer contact	2.0

Dielectric withstanding voltage at sea level: 500 V rms minimum. 125 V rms at 70,000 feet. (Socket contact adapter only).

Vibration, high frequency: MIL-STD-202, method 204, test condition D.

Vibration, random: MIL-STD-202, method 214, test condition F, duration 15 minutes, minimum.

Corona level (Socket contact adapter only):
:

Altitude: 70,000 feet.

190 V rms, minimum.

Insulation resistance: 5,000 megohms minimum when tested in accordance with MIL-PRF-39012 (Socket contact adapter only).

Altitude: Sea level to 70,000 feet.

Solderability (when applicable): Not applicable.

Shock (specified pulse): MIL-STD-202, method 213, test condition I (Socket contact adapter only).

Thermal shock: MIL-STD-202, method 107, test condition B (except high temperature to be +165°C).

RF high potential withstanding voltage:

325 V rms minimum at sea level.

Frequency: 5 MHz.

Leakage current: Not applicable.

Cable retention: Not applicable.

Coupling mechanism retention force: Not applicable.

Durability:

Full detent: 100 cycles.

Limited detent: 500 cycles.

Smooth bore: 1,000 cycles.

RF insertion loss: $.10\sqrt{\text{Frequency (GHz)}}$ dB

Part or Identifying Number (PIN): 94007ZCG-* or 94007ZSP-* (see figures 1 and 2).

Materials:

Contacts and adapter housing: Beryllium copper in accordance with ASTM B196, gold plated to a minimum thickness of 50 microinches (1.27 μm) in accordance with MIL-DTL-45204, type II, grade C, class 1, over 50 microinches (1.27 μm) minimum of nickel in accordance with SAE-QQ-N-290, class 1.

Shroud: Stainless steel passivated.

The Government has determined that the DSCC drawing PIN's listed below are interchangeable with Gilbert Engineering Co,'s "push on" style RF connectors.

Approved sources of supply. Additional sources will be added as they become available and demonstrate to the Government through testing at this facility that their product meets all the requirements of this drawing and is intermateable with the approved sources below. The vendors listed on this drawing have reviewed the requirements of this drawing, determined that their product meets all of those requirements and a certificate of compliance has been submitted to DSCC-VAI.

DSCC drawing PIN 1/	Vendor CAGE number	Vendor reference PIN
94007ZCG-1	30990 82316 2J899 00779 95077	P650-135-1CC 0119-945-1 1100-2020-5450 1056703-1 1290-4008
94007ZCG-2	30990 82316 2J899 00779 95077	P650-135-2CC 0119-969-1 1100-2020-5495 1757023-1 1290-4009
94007ZSP-3	30990 82316 2J899 00779 95077	P670-135-1SF 0119-946-3 9-21802 1056740-1 SF1254-6000
94007ZSP-3L	30990 82316 2J899 00779 95077	P672-135-1SF 0119-957-3 9-21702 1757024-1 SF1254-6001
94007ZSP-3S	30990 82316 2J899 00779 95077	P673-135-1SF 0119-954-03 9-21902 1757025-1 SF1254-6002
94007ZSP-4	30990 82316 2J899 00779 95077	P670-135-2SF 0119-948-3 9-21804 1056741-1 SF1254-6003
94007ZSP-4L	30990 82316 2J899 00779 95077	P672-135-2SF 0119-833-3 9-21720 1757026-1 SF1254-6004
94007ZSP-4S	30990 82316 2J899 00779 95077	P673-135-2SF 0119-955-3 9-21908 1757027-1 SF1254-6005

1/ Parts must be purchased to this DSCC PIN to assure that all performance requirements and tests are met.

DSCC drawing PIN 1/	Vendor CAGE number	Vendor reference PIN
94007ZSP-5	30990 82316 2J899 00779 95077	P670-135-3SF 0119-950-3 9-21801 1056742-1 SF1254-6006
94007ZSP-5L	30990 82316 2J899 00779 95077	P672-135-3SF 0119-821-3 9-21701 1757028-1 SF1254-6007
94007ZSP-5S	30990 82316 2J899 00779 95077	P673-135-3SF 0119-953-3 9-21905 1757029-1 SF1254-6008
94007ZSP-6SC	30990 82316 2J899 00779 95077	P671-135-1SF 0119-844-3 9-21935 1757030-1 SF1254-6009

1/ Parts must be purchased to this DSCC PIN to assure that all performance requirements and tests are met.

Vendor CAGE number	Vendor name and address
30990	Carlisle Interconnect Technologies 2400 Grand Avenue Long Beach, CA 90815
82316	Corning Gilbert, Inc. 5310 W. Camelback Road Glendale, AZ 85301
2J899	Dynawave Incorporated 135 Ward Hill Avenue Haverhill, MA 01835
00779	TYCO Electronics P.O. Box 3608 Harrisburg, PA 17105
95077	SV Microwave, Inc. 2400 Centrepark West Dr. WPB, FL 33409