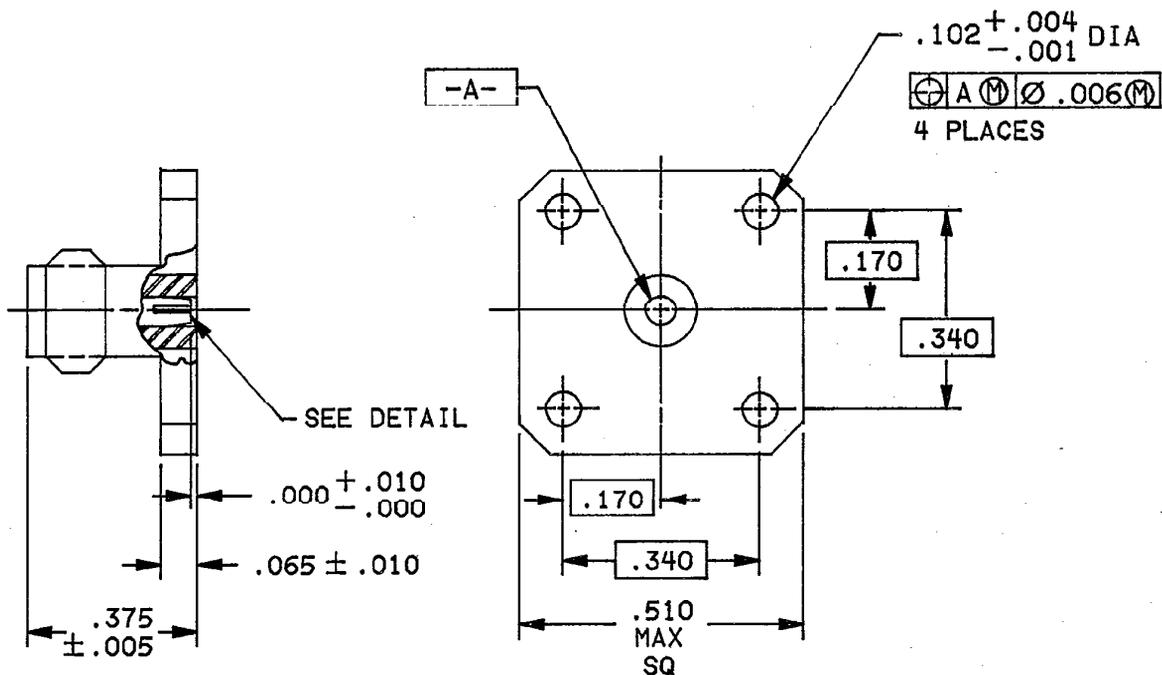


NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon 1.00 inch = 25.4 mm.
3. All undimensioned pictorial configurations are for reference purposes only.
4. Number two screws are suggested for mounting.

FIGURE 2. Series SMA, socket contact 2 hole (.281 inch wide) flange mounted receptacle.



DETAIL

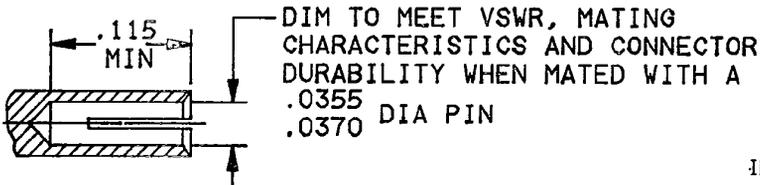
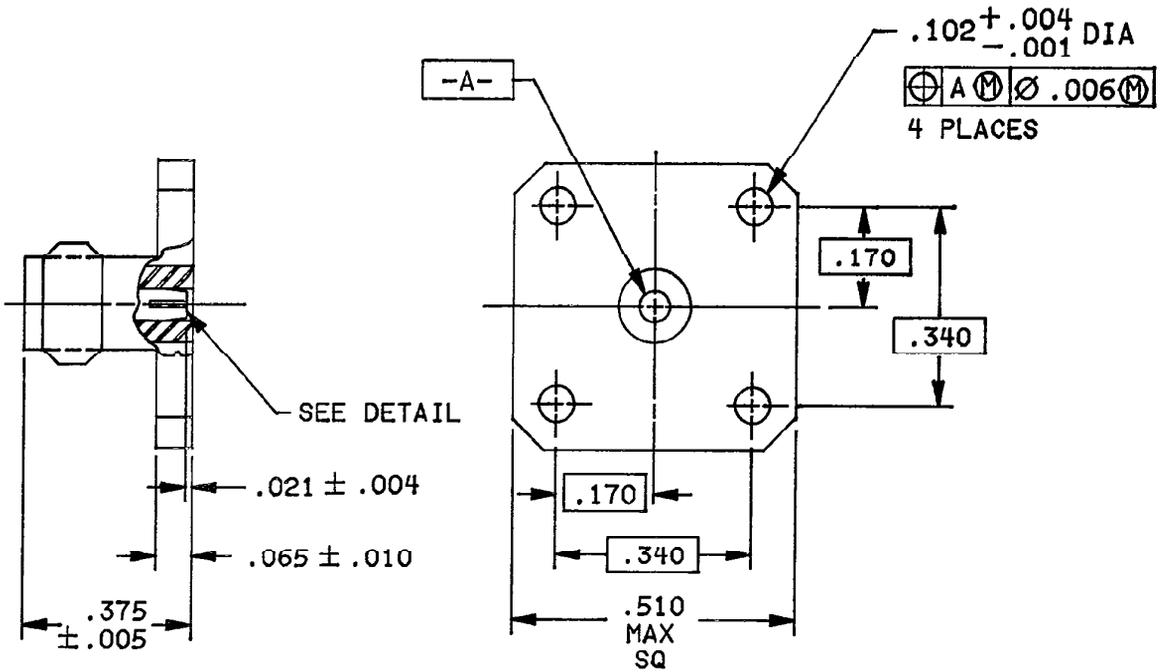
DIM TO MEET VSWR, MATING CHARACTERISTICS AND CONNECTOR DURABILITY WHEN MATED WITH A .0355 .0370 DIA PIN

INCHES	MM	INCHES	MM
.001	.03	.065	1.65
.004	.10	.080	2.03
.005	.13	.102	2.59
.006	.15	.170	4.32
.010	.25	.340	8.64
.0355	.90	.375	9.53
.0370	.940	.510	12.95

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon 1.00 inch = 25.4 mm.
3. All undimensioned pictorial configurations are for reference purposes only.
4. Number two screws are suggested for mounting.

FIGURE 3. Series SMA (.080 inch minimum) socket contact (4 hole) flange mounted receptacle.



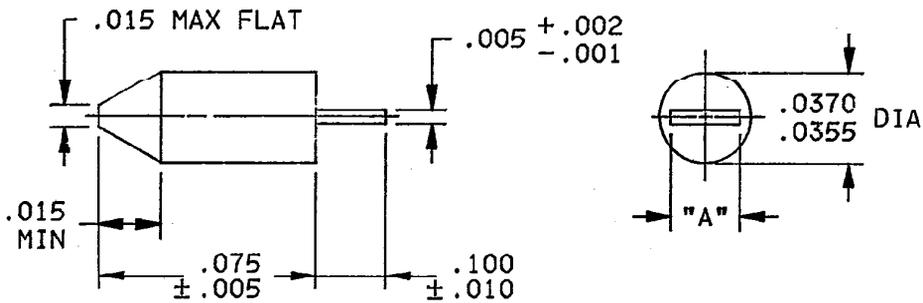
DETAIL

INCHES	MM	INCHES	MM
.001	.03	.0370	.940
.004	.10	.065	1.65
.005	.13	.102	2.59
.006	.15	.115	2.92
.010	.25	.170	4.32
.021	.53	.340	8.64
.0355	.90	.375	9.53
		.510	12.95

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon 1.00 inch = 25.4 mm.
3. All undimensioned pictorial configurations are for reference purposes only.
4. Number two screws are suggested for mounting.

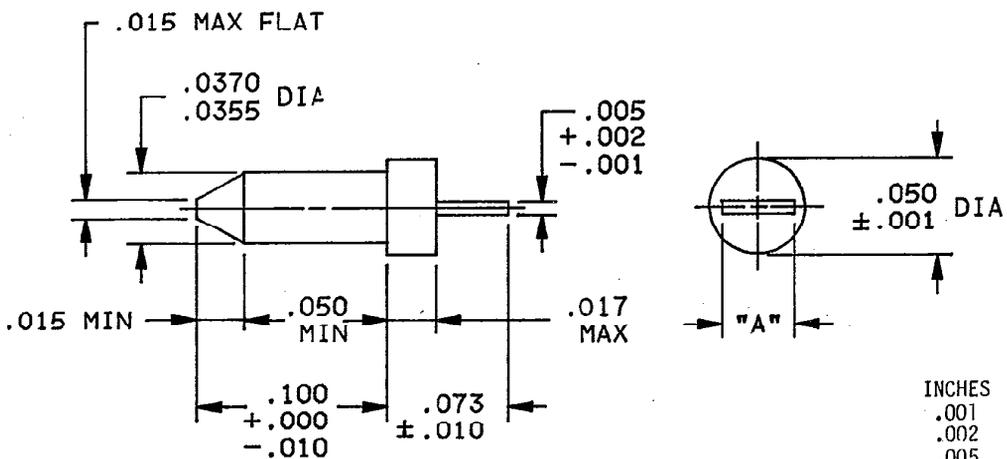
FIGURE 4. Series SMA (.115 inch minimum) socket contact (4 hole) flange mounted receptacle.



INCHES	MM
.001	.03
.002	.05
.005	.13
.010	.25
.015	.38
.020	.51
.0355	.90
.0370	.94
.050	1.27
.075	1.10
.100	2.54

* FIGURE	"A" DIM
5 A	.020 ±.002
5 B	.050 ±.002

FIGURE 5. Transition pin (.075 inch).



INCHES	MM
.001	.03
.002	.05
.005	.13
.010	.25
.015	.38
.017	.43
.020	.51
.0355	.901
.0370	.940
.060	1.27
.073	1.85
.100	2.54

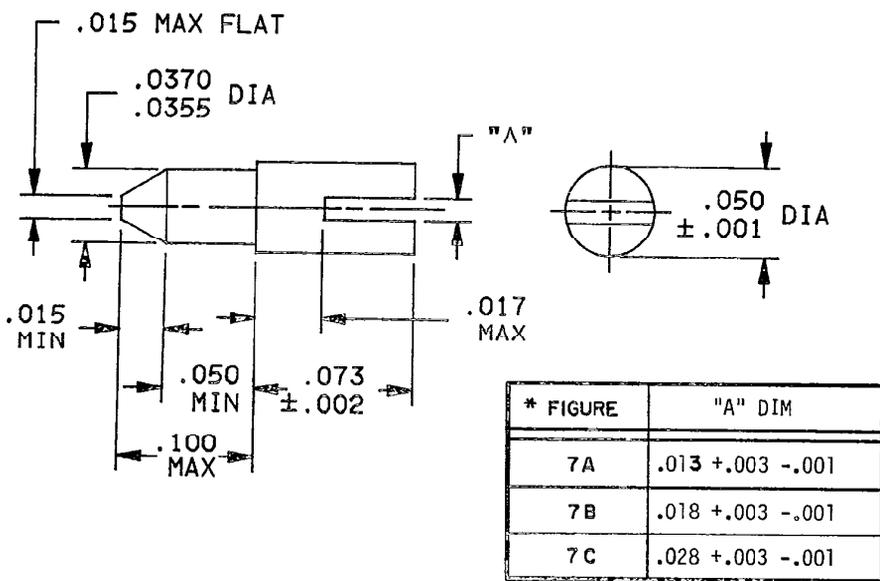
* FIGURE	"A" DIM
6 A	.020 ±.002
6 B	.050 ±.001

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon 1.00 inch = 25.4 mm.
3. All unidimensioned pictorial configurations are for reference purposes only.

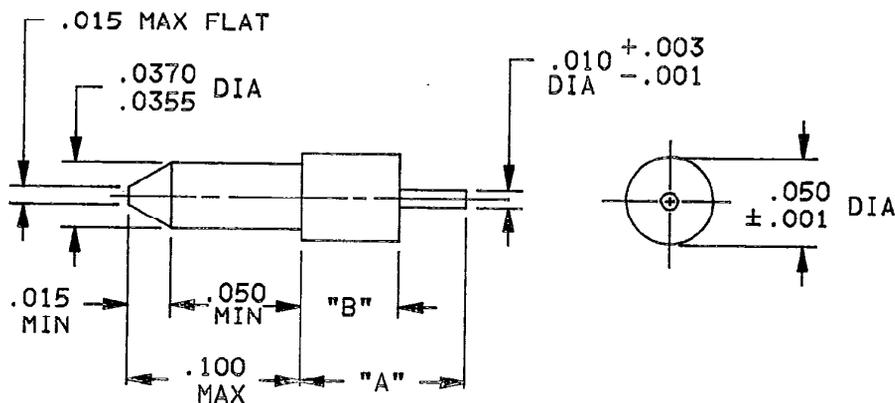
* 4. See Table 1.

FIGURE 6. Transition pin (.100 inch).



INCHES	MM
.001	.03
.002	.05
.003	.08
.012	.30
.015	.38
.017	.43
.018	.46
.028	.71
.0355	.901
.0377	.940
.050	1.27
.073	1.85
.100	2.54

FIGURE 7. Transition pin (slotted).



INCHES	MM
.001	.03
.002	.05
.003	.08
.010	.25
.015	.38
.0355	.901
.0370	.940
.050	1.27
.080	2.03
.100	2.54
.136	3.45
.142	3.61
.198	5.03

* FIGURE	"A" DIM	"B" DIM
8 A	.136 ±.010	.080 ±.002
8 B	.198 ±.010	.142 ±.002
8 C	.073 ±.010	.015 ±.002

- NOTES:
1. Dimensions are in inches.
 2. Metric equivalents are given for general information only and are based upon 1.00 inch = 25.4 mm.
 3. All undimensioned pictorial configurations are for reference purposes only.
 - * 4. See Table 1.

FIGURE 8. Transition pin (.050 inch contact).

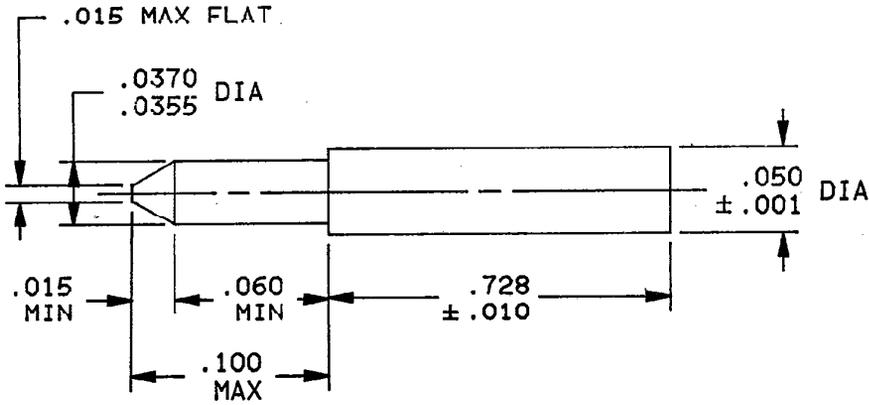
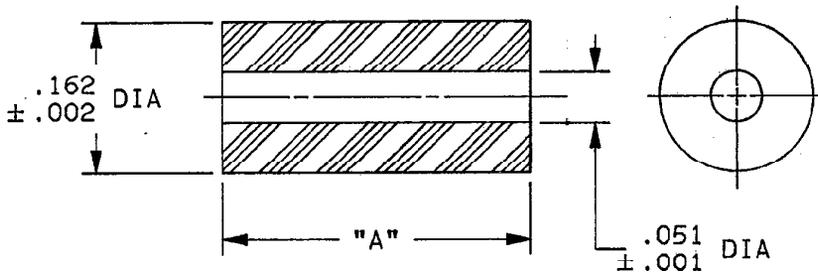


FIGURE 9. Transition Pin (.060 inch contact).



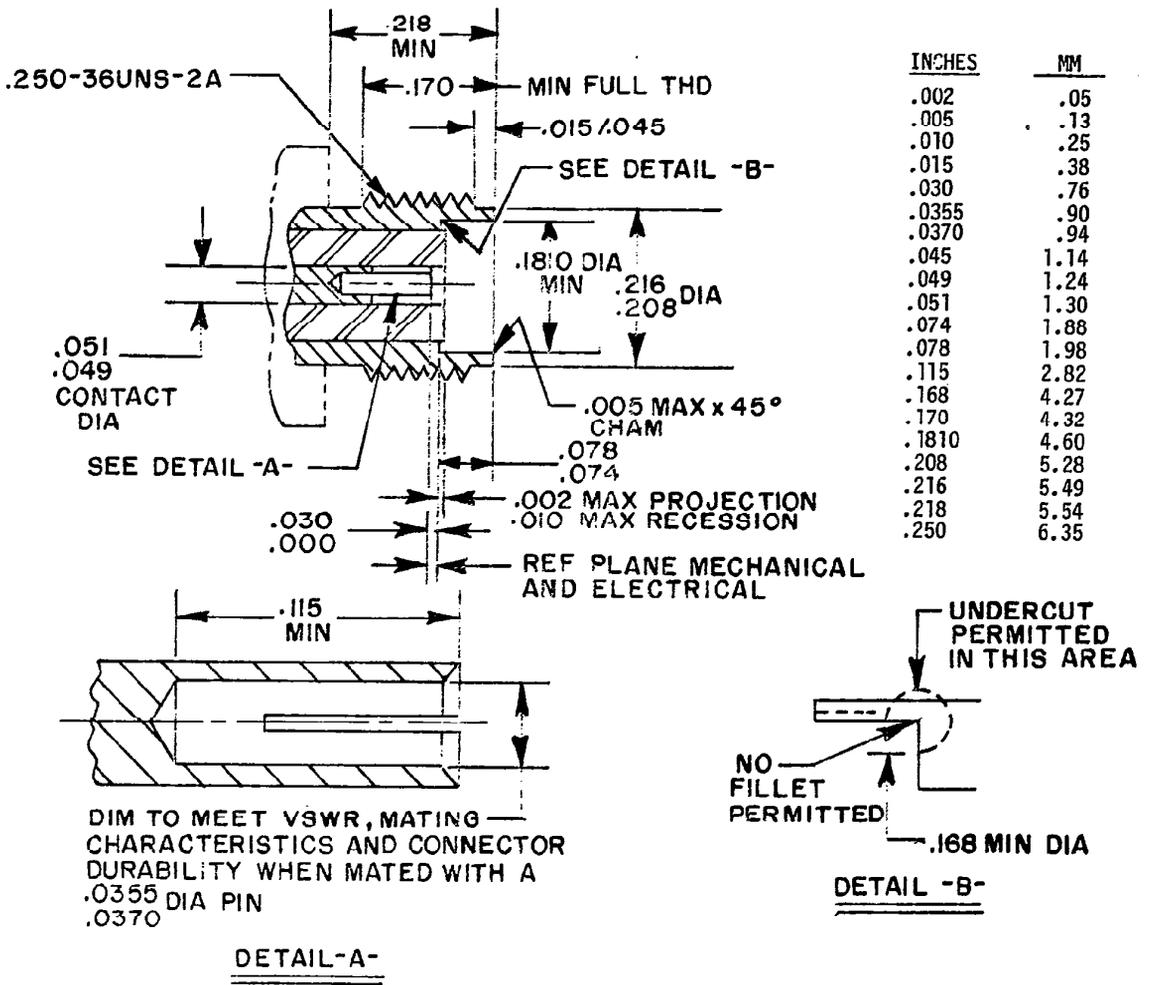
* FIGURE	"A" DIM
IO A	.070 ±.002
IO B	.132 ±.002
IO C	.625 ±.002

INCHES	MM	INCHES	MM
.001	.03	.070	1.78
.002	.05	.132	3.35
.051	1.30	.162	4.1†
		.625	15.88

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon 1.00 inch = 25.4 mm.
3. All undimensioned pictorial configurations are for reference purposes only.
- * 4. See Table 1.

FIGURE 10. Rear dielectric.



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon 1 inch = 25.4 mm.
3. All undimensioned pictorial configurations are for reference purposes only.

FIGURE 11. Mating dimensions for socket termination.

ENGINEERING PARAMETERS:

Nominal impedance: 50 ohms.

Voltage rating: 600 Vrms maximum at sea level.

150 Vrms maximum at 70,000 feet.

Frequency range: 0 to 18.0 GHz.

Temperature rating: -65° to 105°C.

REQUIREMENTS:

Design and construction: See figures 1 through 11 and table I.

Force to engage and disengage:

Torque - 2 inch-pounds maximum.

Longitudinal force - Not applicable.

Coupling proof torque: Not applicable.

Inspection note: For each test of threaded coupling connector where the test is performed on mated pairs, the pairs shall be torqued to 7 to 10 inch-pounds.

Contact gaging: See figure 12.

Contacts with spring members:

Center contact (socket)

Oversize test pin - .0375 +.0001

Test pin finish - 16 microinches.

Insertion depth - .030/.045.

Number of insertions - 3.

Insertion force test: Steel test pin diameter .0370 +.0001.

Insertion depth - .050/.075.

Test pin finish - 16 microinches.

Insertion force - 3 pounds maximum.

Withdrawal force test: Steel test pin diameter .0355 - .0001.

Insertion depth - .050/.075.

Withdrawal force - 1 ounce minimum.

Test pin finish - 16 microinches.

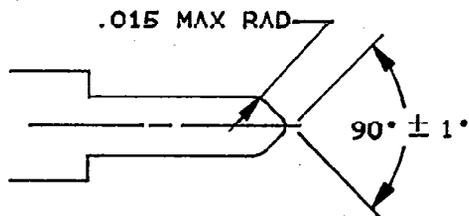


FIGURE 12. Test pin data.

TABLE I. Part number and characteristics.

Part no. M83517/10-	Basic connector figure no.	Transition pin figure no.	Rear dielectric figure no.	Remarks
31001	1	----	---	---
31002	2	----	---	---
31003	3	----	---	---
31004	4	----	---	---
31005	1	5A	---	.020 wide tab
31006	1	5B	---	.050 wide tab
31007	2	6A	---	.020 wide tab
31008	2	6B	---	.050 wide tab
31009	2	7A	---	.012 slot
31010	2	7B	---	.018 slot
31011	2	7C	---	.028 slot
31012	2	8A	10A	.010 dia. terminal for 1/16 panel
31013	2	8B	10B	.010 dia. terminal for 1/8 panel
31014	2	9	10C	.050 dia. terminal
31015	3	5A	---	.020 wide tab
31016	3	5B	---	.050 wide tab
31017	4	6A	---	.020 wide tab
31018	4	6B	---	.050 wide tab
31019	4	7A	---	.012 slot
31020	4	7B	---	.018 slot
31021	4	7C	---	.028 slot
31022	4	8A	10A	.010 dia. terminal for 1/16 panel
31023	4	8B	10B	.010 dia. terminal for 1/8 panel
31024	4	9	10C	.050 dia. terminal

Permeability of nonmagnetic materials: Applicable.

Seal:

Hermetic-sealed connectors: Not applicable.

Pressurized and weatherproof connectors: Not applicable.

Insulation resistance: 5,000 megohms minimum.

Center contact retention:

Axial force: 6 pounds minimum.

Torque: Not applicable.

Dielectric withstanding voltage: Applicable, test condition I.

Test voltage 1,000 Vrms.

Corrosion: Applicable, test condition B.

Voltage standing wave ratio (VSWR):

Test frequency range: From .5 to 18.0 GHz.

Swept frequency VSWR test setup:

Step 1: See basic specification.

Step 2: VSWR shall be less than 1.080 +.005 frequency (frequency in GHz).

Item 11p VSWR shall be less than 1.025 + .002 frequency (frequency in GHz).

Item 11j VSWR shall be less than 1.025 + .002 frequency (frequency in GHz).

Step 3: VSWR shall be less than 1.05 + .005.

Test fixture - See Figure 1 of basic specification.

Step 4: VSWR test shall be less than 1.05 + .005.

RF transmission loss: 0.15dB MAX @ 6 GHz.

RF leakage: Not applicable.

Connector durability:

Interface:

500 cycles minimum at 12 cycles/minute maximum rate.

Connector shall meet contact gaging and force to engage and disengage requirements.

Transition pin:

100 cycles minimum at 12 cycles/minute maximum rate.

Contact shall meet contact gaging requirements.

Contact resistance: In milliohms maximum.

	<u>Initial</u>	<u>After environment</u>
Center contact:	6.0	8.0
Outer contact:	2.0	Not applicable

Thermal shock: Applicable, test condition A.

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.

RF high potential withstanding voltage:

At a frequency between 5 to 7.5 MHz.

Leakage current - Not applicable.

RF voltage - 1,000 Vrms.

Coupling mechanism retention force: Not applicable.

Part number: M83517/10-(dash number from table I.)

Group qualification: See table II.

TABLE II. Group qualification.

Group	Submission and qualification of any of the following connectors <u>1/2/</u>	Qualifies the following connectors
I	M83517/10-3+005	M83517/10-3+001 3+003 3+005 3+006 3+015 3+016
II	M83517/10-3+007	M83517/10-3+002 3+004 3+007 3+008 3+017 3+018
III	M83517/10-3+009	M83517/10-3+002 3+004 3+009 3+010 3+011 3+019 3+020 3+021
IV	M83517/10-3+012	M83517/10-3+002 3+004 3+012 3+013 3+022 3+023
V	M83517/10-3+014	M83517/10-3+002 3+004 3+014 3+024

1/ Individual connectors other than listed are self qualifying only.

2/ Qualification of connectors qualifies connectors of the same material only.

+ Denotes finish.

Custodians:

Army - CR
Navy - EC
Air Force - 85

Preparing activity:

Air Force - 85
(Project 5935-3159-10)

Review activities:

Army - AR, MI, AT
Navy - SH, AS
Air Force - 11, 99
DLA - ES

User activities:

Navy - MC
Air Force - 19