

DETAIL SPECIFICATION SHEET

GASKETING MATERIAL, CONDUCTIVE, SHIELDING GASKET, ELECTRONIC,
ELASTOMER, ELECTRICAL, EMI/RFI, WAVEGUIDE

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

The requirements for acquiring the gasketing material described herein shall
consist of this specification sheet and the latest issue of [MIL-DTL-83528](#).

TABLE I. Selection guide (see figures 1-5 for configurations and dimensions).

Frequency range (GHz)	Band	EIA wave- guide size	Waveguide designation per MIL-DTL-85	Flange designation per MIL-DTL-3922			Flange Type	Gasket config- uration	Part or Identifying Number (PIN) M83528/013X
				UG	CPR	CMR			
26.5-40.0	Ka	WR28	RG-96/U (Silver)	UG-599/U			Cover	A	001 1/
				UG-600A/U			Choke	E	002
18.0-26.5	K	WR42	RG-53/U (Brass)	UG-595/U			Cover	A	003 1/
			RG-121/U (Aluminum)	UG-596A/U UG-598A/U			Choke	E	004
12.4-18.0	Ku	WR62	RG-91 (Brass)	UG-419/U			Cover	A	005 1/
			RG-107/U (Silver)	UG-541A/U			Choke	E	006
10.0-15.0		WR75					Cover	A	007
							Choke	E	008
8.2-12.4	X	WR90	RG-52/U (Brass) RG-67/U (Aluminum)	UG-39/U UG-135/U			Cover	A	009
				UG-1736/U UG-1737/U	CPR-90F		Flat contact	A	010 1/
				UG-136A/U UG-40A/U			Choke	E	011
				UG-136B/U UG-40B/U			Choke	E	012
				UG-1360/U UG-1361/U	CPR-90G		Contact	C	013
7.0-11.0		WR102		UG-1494/U			Choke	E	014
7.05-10.0	X ₁	WR112	RG-51/U (Brass) RG-68/U (Aluminum)	UG-51/U UG-138/U			Cover	A	015
				UG-1734/U UF-1735/U	CPR-112F		Flat contact	A	016 1/
				UG-52B/U UG-137B/U			Choke	E	017
				UG-1358/U UF-1359/U	CPR-112G		Contact	C	018

See footnote at end of table.

AMSC N/A

FSC 5999

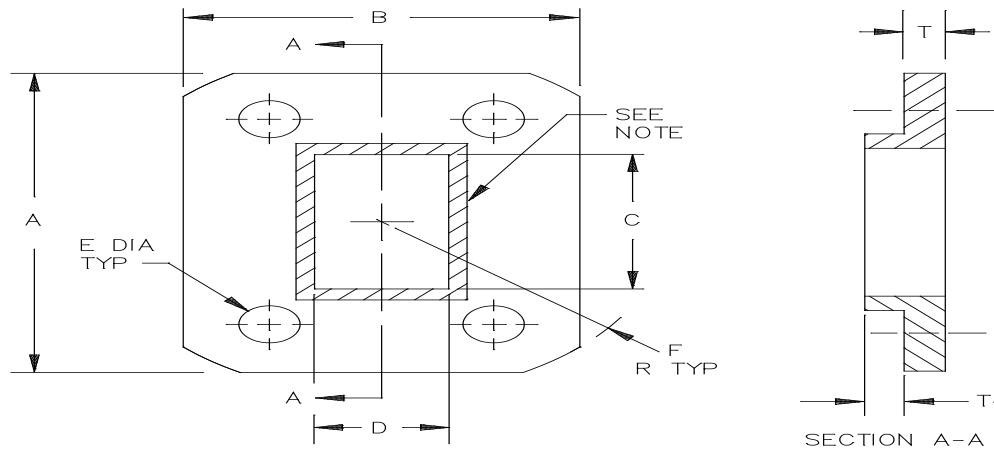
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TABLE I. Selection guide (see [figures 1 - 5](#) for configurations and dimensions) - Continued.

Frequency range (GHz)	Band	EIA wave-guide size	Waveguide designation per MIL-DTL-85	Flange designation per MIL-DTL-3922			Flange type	Gasket configuration	Part or Identifying Number (PIN) M83528/013X
				UG	CPR	CMR			
5.85-8.2	X _b	WR137	RG-50/U (Brass) RG-106/U (Aluminum)	UG-334/U			Cover	B	019
				UG-441/U					
				UG-1732/U	CPR-137F		Flat contact		020 1/
				UG-1733/U					
						CMR-137	Flat contact	A	021 1/
				UG-343B/U			Choke	D	022
4.9-7.05		WR159		UG-440B/U					
				UG-1356/U	CPR-137G		Contact	C	023
				UG-1357/U					
3.95-5.85	C	WR187	RG-49/U (Brass) RG-95/U (Aluminum)	UG-1730/U	CPR-159F		Flat contact	A	024 1/
				UG-1731/U					
						CMR-149	Flat contact	A	025 1/
				UG-149A/U	CPR-187F		Cover	B	026
				UG-407/U					
3.30-4.90		WR229	RG-49/U (Brass) RG-95/U (Aluminum)	UG-1728/U			Flat contact	A	027 1/
				UG-1729/U					
						CMR-187	Flat contact	A	028 1/
							Choke	D	029
				UG-148C/U	CPR-187G		Contact	C	030
				UG-406B/U					
2.6-3.95	S	WR284	RG-48/U (Brass) RG-75/U (Aluminum)	UG-1352/U	CPR-187G				
				UG-1353/U					
2.2-3.3		WR340	RG-112U (Brass) RG-112/U (Aluminum)	UG-1726/U	CPR-229F		Flat contact	A	031 1/
				UG-1727/U					
						CMR-229	Flat contact	A	032 1/
				UG-53/U	CPR-284F		Cover	B	033 1/
				UG-584/U					
1.7-2.6	W	WR340	RG-104/U (Brass) RG-105/U (Aluminum)	UG-1724/U			Flat contact	A	034 1/
				UG-1725/U					
						CMR-284	Flat contact	A	035 1/
				UG-54B/U	CPR-284G		Choke	E	036
				UG-585A/U					
1.12-1.7	L	WR650	RG-69/U (Brass) RG-103/U (Aluminum)	UG-1348/U	CPR-284G		Contact	C	037
				UG-1349/U					
1.12-1.7		WR340	RG-112U (Brass) RG-112/U (Aluminum)	UG-533/U	CPR-340F		Flat contact	A	038 1/
				UG-554/U					
							Flat contact	A	039 1/
1.12-1.7		WR340	RG-104/U (Brass) RG-105/U (Aluminum)	UG-435A/U	CPR-430F		Flat contact	A	040 1/
				UG-437A/U					
							Flat contact	A	041 1/
1.12-1.7		WR650	RG-69/U (Brass) RG-103/U (Aluminum)	UG-417A/U			Flat contact	A	042 1/
				UG-418A/U					

[1/](#) This gasket will seal a maximum pressure of 20 psig.



CONFIGURATION A – DIE CUT SQUARE AND RECTANGULAR

NOTE: Shaded area indicates optional raised lip. When included, the lip shall be a nominal of .187 (4.75 mm) wide. Thickness T_1 shall be .004 (0.10 mm) $\pm$.002 (0.05 mm). Lip is standard on configuration A dash numbers without footnote 1/ reference in table I. For dash numbers in table I with footnote 1/ reference, lip is optional.

Dimensions (Configuration A)							Part or Identifying Number (PIN) M83528/013X	Cross section area (cm ²) 2/
A $\pm .015$ (0.38)	B $\pm .015$ (0.38)	C $\pm .015$ (0.38) -.000 (0.00)	D $\pm .015$ (0.38) -.000 (0.00)	E 1/ $\pm .010$ (0.25)	T $\pm .003$ (0.08)	F Radius $\pm .010$ (0.25)		
.750 (19.05)	.750 (19.05)	.145 (3.68)	.285 (7.24)	.116 (2.95)	.027 (0.69)	.469 (11.91)	001	.0082
.875 (22.23)	.875 (22.23)	.175 (4.45)	.425 (10.80)	.116 (2.95)	.027 (0.69)	.563 (14.30)	003	.0095
1.313 (33.35)	1.313 (33.35)	.630 (16.00)	.320 (8.13)	.140 (3.56)	.027 (0.69)	.875 (22.23)	005	.0095
1.496 (38.00)	1.496 (38.00)	.760 (19.30)	.385 (9.78)	.155 (3.94)	.027 (0.69)	.450 (11.43)	007	.0099
1.625 (41.28)	1.625 (41.28)	.905 (22.99)	.405 (10.29)	.169 (4.29)	.027 (0.69)	.469 (11.91)	009	.0097
1.594 (40.49)	2.094 (53.19)	.405 (10.29)	.905 (22.99)	.169 (4.29)	.027 (0.69)	.250 (6.35)	010	.0161
1.875 (47.63)	1.875 (47.63)	1.130 (28.70)	.505 (12.83)	.180 (4.57)	.027 (0.69)	1.15 (29.21)	015	.0101
1.750 (44.45)	2.500 (63.50)	.505 (12.83)	1.130 (28.70)	.171 (4.34)	.027 (0.69)	.250 (6.35)	016	.076
1.937 (49.20)	2.687 (68.25)	.633 (16.08)	1.380 (35.05)	.206 (5.23)	.027 (0.69)	.250 (6.35)	020	.0176
1.531 (38.89)	2.281 (57.94)	.632 (16.05)	1.382 (35.10)	.150 (3.81)	.027 (0.69)	.125 (3.18)	021	.0121
2.438 (61.93)	3.188 (80.98)	.805 (20.45)	1.600 (40.64)	.257 (6.53)	.027 (0.69)	.313 (7.95)	024	.0220

See footnotes at end of table.

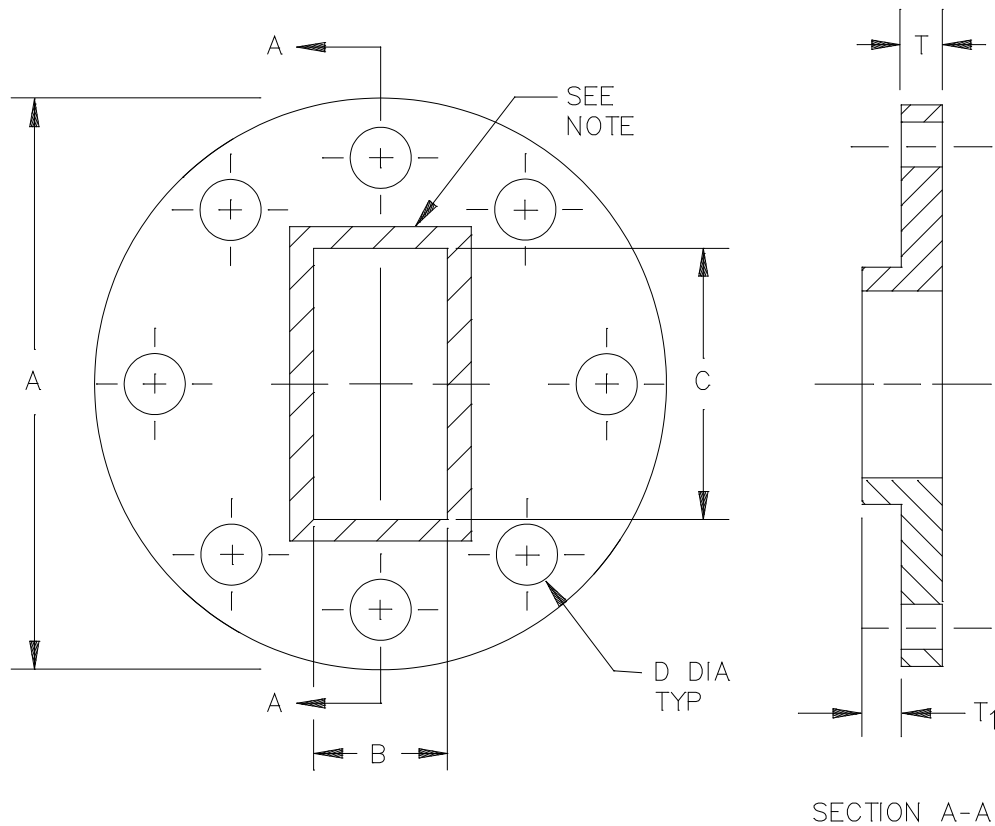
FIGURE 1. Configuration A dimensions.

Dimensions (Configuration A)							Part or Identifying Number (PIN) M83528/013X	Cross section area (cm ²) 2/
A ± .015 (0.38)	B ± .015 (0.38)	C ± .015 (0.38) -.000 (0.00)	D ± .015 (0.38) -.000 (0.00)	E 1/ ± .010 (0.25)	T ± .003 (0.08)	F Radius ± .010 (0.25)		
1.750 (44.45)	2.500 (63.50)	.800 (20.32)	1.600 (40.64)	.160 (4.06) .150 (3.81)	.027 (0.69)	.125 (3.18)	025	.0128
3.500 (88.90)	2.500 (63.50)	1.880 (47.75)	.880 (22.35)	.266 (6.76)	.027 (0.69)	.313 (7.95)	027	.0219
1.784 (45.31)	2.781 (70.64)	.882 (22.40)	1.882 (47.80)	.156 (3.96) .141 (3.58)	.027 (0.69)	.125 (3.18)	028	.0122
2.750 (69.85)	3.875 (98.43)	1.155 (29.34)	2.300 (58.42)	.270 (6.86)	.027 (0.69)	.312 (7.92)	031	.0215
2.000 (50.80)	3.156 (80.16)	1.155 (29.34)	2.300 (58.42)	.150 (3.81)	.027 (0.69)	.125 (3.18)	032	.0114
4.500 (114.30)	3.000 (76.20)	2.850 (72.39)	1.350 (34.29)	.266 (6.76)	.027 (0.69)	.313 (7.95)	034	.0223
3.844 (97.64)	2.344 (59.54)	2.850 (72.39)	1.350 (34.29)	.172 (4.37) .188 (4.78)	.027 (0.69)	.125 (3.18)	035	.0134
3.750 (95.25)	5.440 (138.18)	1.710 (43.43)	3.410 (86.61)	.264 (6.71) .250 (6.35)	.027 (0.69)	.250 (6.35)	038	.0275
3.750 (95.25)	5.438 (138.13)	1.710 (43.43)	3.410 (86.61)	.266 (6.76)	.027 (0.69)	.250 (6.35)	039	.0275
4.188 (106.38)	6.344 (161.14)	2.160 (54.86)	4.310 (109.47)	.266 (6.76) .281 (7.14)	.027 (0.69)	.250 (6.35)	040	.0274
6.344 (161.14)	4.188 (106.38)	4.310 (109.47)	2.160 (54.86)	.266 (6.76)	.027 (0.69)	.250 (6.35)	041	.0275
5.438 (138.13)	8.688 (220.68)	3.260 (82.80)	6.510 (165.35)	.250 (6.35) .328 (8.33)	.027 (0.69)	.250 (6.35)	042	.0294

[1/](#) Number and location of holes conform to holes in standard waveguide flanges identified in [table I](#). Where two hole diameters are given, flange has holes of two different diameters.

[2/](#) For calculation of volume resistivity (surface probe).

FIGURE 1. Configuration A dimensions – Continued.



CONFIGURATION B – DIE CUT CIRCULAR

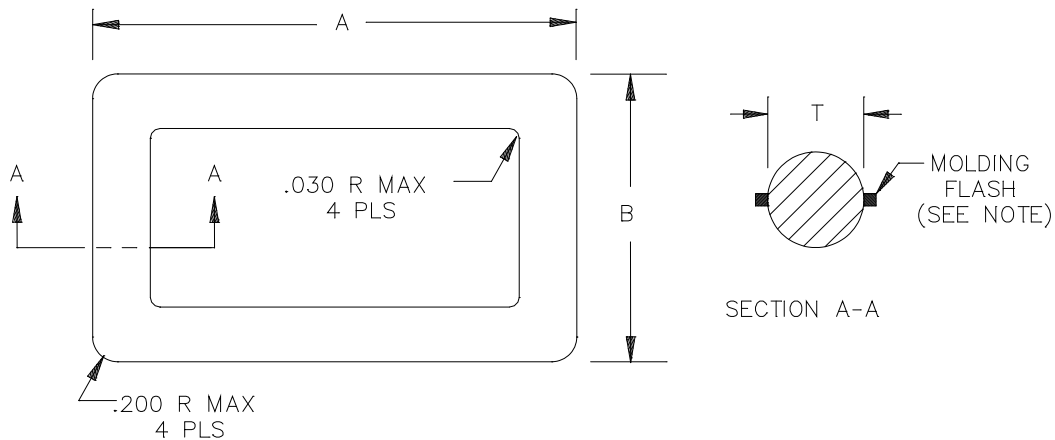
NOTE: Shaded area indicates optional raised lip. When included, the lip shall be a nominal of .187 (4.75 mm) wide. Thickness T_1 shall be $.004$ (0.10 mm) $\pm .002$ (0.05 mm). Lip is standard on configuration B dash numbers without footnote [1/](#) reference in [table I](#). For dash numbers in [table I](#) with footnote [1/](#) reference, lip is optional.

Dimensions (Configuration B)					Part or Identifying Number (PIN) M83528/013X	Cross section area (cm ²) 2/
A $\pm .015$ (0.38)	B $\pm .015$ (0.38) -0.000 (0.00)	C $\pm .015$ (0.38) -0.000 (0.00)	D 1/ $\pm .010$ (0.25)	T $\pm .005$ (0.13)		
3.125 (79.38)	.632 (16.05)	1.382 (35.10)	.234 (5.94)	.027 (0.69)	019	.0337
3.625 (92.08)	.882 (22.40)	1.882 (47.80)	.234 (5.94)	.027 (0.69)	026	.0370
5.312 (134.92)	1.350 (34.29)	2.850 (72.39)	.290 (7.37)	.027 (0.69)	033	.0535

[1/](#) Number and location of holes conform to holes in standard waveguide flanges identified in [table I](#).

[2/](#) For calculation of volume resistivity (surface probe).

FIGURE 2. Configuration B dimensions.



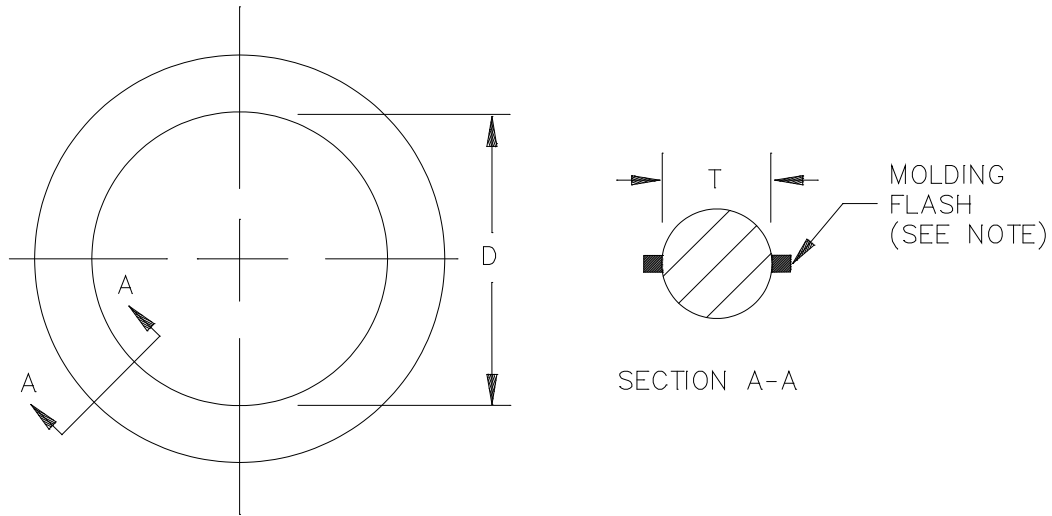
CONFIGURATION C – MOLDED RECTANGULAR WITH “O” CROSS SECTION

NOTE: Molding flash of .003 (0.08 mm) in width (maximum) and .005 (0.13 mm) in thickness (maximum) is allowed.

Dimensions (Configuration C)			Part or Identifying Number (PIN) M83528/013X	Cross section area (cm ²) 1/
A	B	T dia.		
1.368 (34.75) ± .012 (0.30)	.868 (22.05) ± .010 (0.25)	.103 (2.62) ± .003 (0.08)	013	.0538
1.616 (41.05) ± .015 (0.38)	.991 (25.17) ± 0.010 (0.25)	.103 (2.62) ± .003 (0.08)	018	.0538
1.866 (41.05) ± .015 (0.38)	1.116 (28.35) ± .012 (0.30)	.103 (2.62) ± .003 (0.08)	023	.0538
2.449 (62.20) ± .020 (0.51)	1.449 (36.80) ± .013 (0.33)	.139 (3.53) ± .004 (0.10)	030	.0979
3.451 (87.67) ± .024 (0.61)	1.951 (49.56) ± .018 (0.46)	.139 (3.53) ± .004 (0.10)	037	.0979

[1/](#) For calculation of volume resistivity (surface probe).

FIGURE 3. Configuration C dimensions.



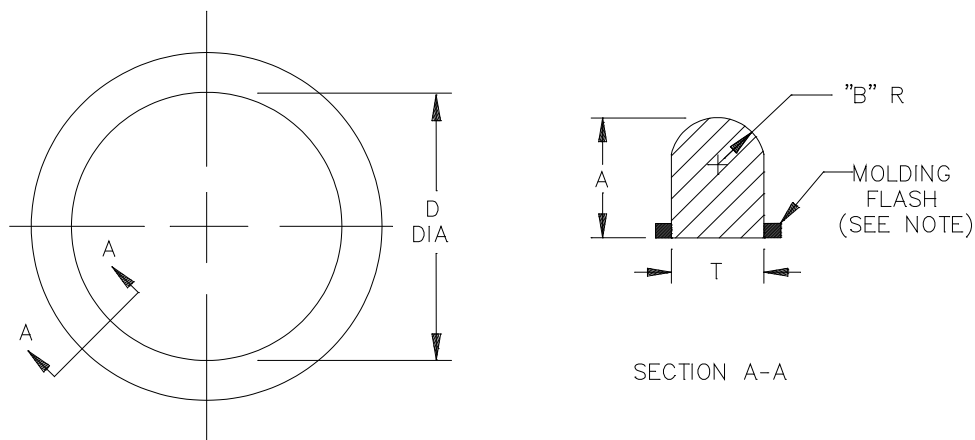
CONFIGURATION D – MOLDED CIRCULAR WITH “O” CROSS SECTION

NOTE: Molding flash of .003 (0.08 mm) in width (maximum) and .005 (0.13 mm) in thickness (maximum) is allowed.

Dimensions (Configuration D)		Part or Identifying Number (PIN) M83528/013X	Cross section area (cm ²) <u>1/</u>
D (ID)	T		
2.011 (51.08) ± .018 (0.46)	.139 (3.53) ± .004 (0.10)	022	.0979
2.683 (68.15) ± .024 (0.61)	.115 (2.92) ± .004 (0.10)	029	.0670

1/ For calculation of volume resistivity (surface probe).

FIGURE 4. Configuration D dimensions.



CONFIGURATION E – MOLDED CIRCULAR WITH “D” CROSS SECTION

NOTE: Molding flash of .003 (0.08 mm) in width (maximum) and .005 (0.13 mm) in thickness (maximum) is allowed.

Dimensions (Configuration E)				Part or Identifying Number (PIN) M83528/013X	Cross section area (cm ²) ^{1/}
A	B	D (ID)	T		
.056 (1.42)	.041 (1.04)	.410 (10.41)	.082 (2.08)	002	.025
.048 (1.22)	.039 (0.99)	.587 (14.91)	.078 (1.98)	004	.020
.125 (3.18)	.078 (1.98)	.885 (22.48)	.155 (3.94)	006	.109
.065 (1.65)	.049 (1.24)	1.122 (28.50)	.099 (2.51)	008	.035
.088 (2.24)	.048 (1.22)	1.340 (34.04)	.095 (2.41)	011	.048
.077 (1.96)	.058 (1.47)	1.310 (33.27)	.115 (2.92)	012	.048
.085 (2.16)	.048 (1.22)	1.392 (35.36)	.095 (2.41)	014	.046
.078 (2.16)	.053 (1.35)	1.550 (39.37)	.105 (2.67)	017	.045
.188 (4.78)	.120 (3.05)	3.910 (99.31) ± .026 (0.66)	.240 (6.10)	036	.251

^{1/} For calculation of volume resistivity (surface probe).

NOTES:

- Dimensions are in inches/ metric equivalents are given in parenthesis and are for general information only.
- Unless otherwise indicated, tolerances shall be as follows:

Dimensions		Tolerance
Under	.101 (2.57)	± .005 (0.13)
	.101 to .200 (2.57 to 5.08)	± .008 (0.20)
	.201 to .300 (5.11 to 7.62)	± .010 (0.25)
	.301 to .500 (7.65 to 12.70)	± .015 (0.38)
Over	.500 (12.70)	± .020 (0.51)

FIGURE 5. Configuration E dimensions.

SELECTION GUIDE: See [table I](#).

REQUIREMENTS:

Design and interface: See [figures 1-5](#) and [table I](#).

Materials:

Configuration A: Type G.

Configuration B: Type G.

Configuration C: Types C, F, H, or K.

Configuration D: Types C, F, H, or K.

Configuration E: Types C, F, H, or K.

Part or Identifying Number (PIN): See [table I](#) and [figures 1-5](#). An "X" in the PIN represents the material type (see above). PIN example: M83528/013G001. Gaskets with optional high-pressure raised lip (see [table I](#) and [figures 1-5](#)) will have a "Z" added to their PIN's. Example: M83528/013G001Z.

Supersession information: See [table II](#).

TABLE II. [Supersession information](#). [1/](#)

MIL-G-83528/13B PIN M83528/013X	Superseded MIL-G-83528/13A PIN M83528/013X	Superseded DESC drawing PIN 85118X
002	001	001
004	002	002
006	003	003
008	004	004
012	005	005
011	006	006
014	007	007
017	008	008
036	009	009

[1/](#) "X" in the PIN indicates the applicable material type.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue 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 and relationship to the previous issue.

Referenced documents. In addition to [MIL-DTL-83528](#), this document references the following:

[MIL-DTL-85](#) [MIL-DTL-3922](#)

Custodians:
Army – CR
Navy – EC
Air Force – 85
DLA – CC

Preparing activity:
DLA – CC

(Project 5999-2023-014)

Review activities:
Air Force – 19
NASA – NA

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/>.