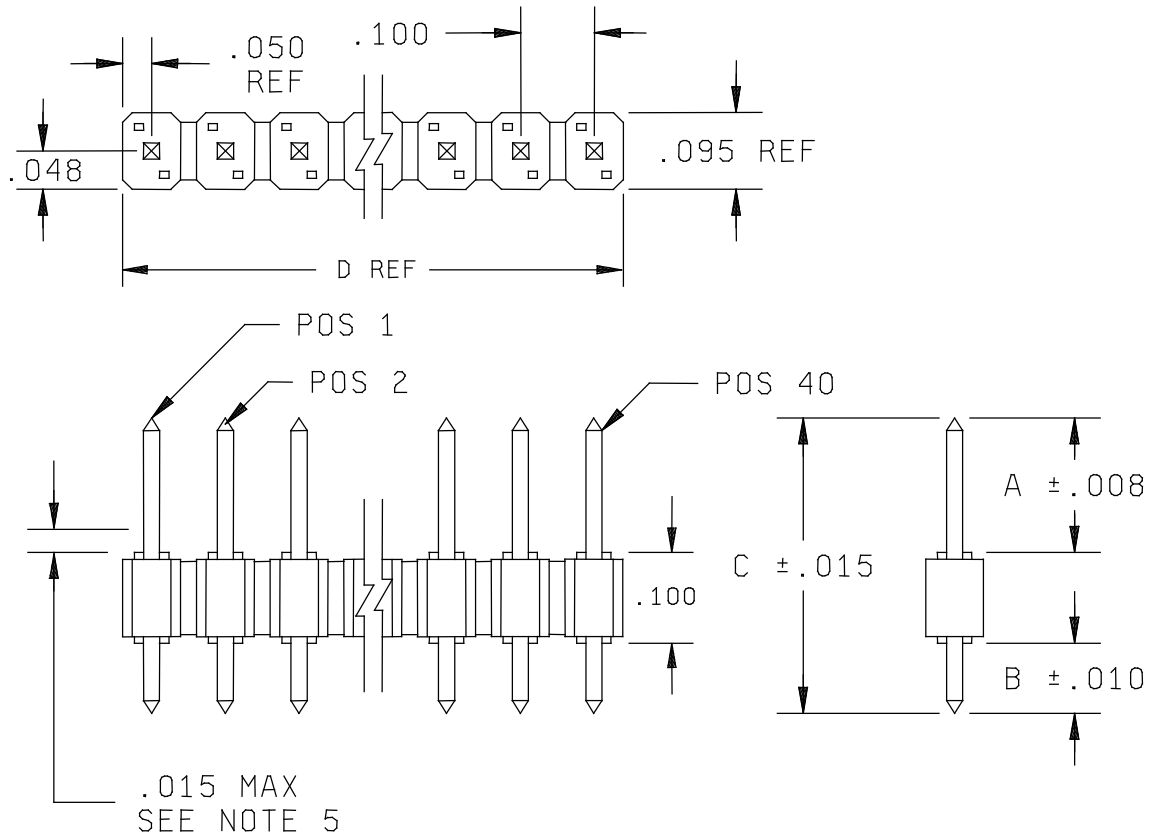


REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
A	Page 2, add tolerance to dimension C. Pages 6 and 7 add vendor CAGE numbers OAKZ5 and 95238.	01/19/88	Richard Marbais
B	Change marking requirement. Change current rating. Add caution note.	11/22/88	Richard Marbais
C	Figure 1, made dimensional changes. Table III, added options up to 40 positions.	06/01/90	Richard Marbais
D	Figure 1, change .050 to a ref dimension. Add resistance to soldering heat test and add temperature range designator table (TABLE IV). Add new designator to part number table. Change CAGE 22526 address.	10/03/92	Randy Larson
E	Add contact finish designator C, table I. Define contact and termination area. Change CAGE 22529 to 8N187 and 95238 address.	03/29/95	Randy Larson
F	Change CAGE 14933 to 037Z3. Added solderless wrappost geometry requirements. Updated material callout. Editorial changes throughout.	04/ 18/ 02	Robert Heber
G	Updating references and CAGE 8N187 PIN's. Editorial changes throughout.	17 May 2010	Abdo Abdouni
H	Update vendor CAGE OAKZ5 name and address. Editorial changes throughout.	6 June 2011	Howard Jenkins
J	Add option for selective plating to plating code "A".	17 October 2012	Abdo Abdouni
K	Change of source CAGE 95238 manufacture's name and location address. Removed source CAGE 8N187. Replace ASTM B488 with MIL-DTL-45204. Removed ASME Y14.100 and source control drawing.	22 January 2014	Abdo Abdouni

<p>CURRENT DESIGN ACTIVITY CAGE CODE 037Z3 HAS CHANGED NAMES TO: DLA LAND AND MARITIME COLUMBUS, OHIO 43218-3990</p>
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REV																				
PAGE																				
REV STATUS OF PAGES	REV	K	H	H	J	H	K	H	H	K	K									
	PAGE	1	2	3	4	5	6	7	8	9	10									
PMIC N/A	PREPARED BY Gail Willis						DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OHIO 43218-3990													
Original date of drawing 7 Nov 1986	CHECKED BY Carl Dello-Stritto						TITLE CONNECTORS, ELECTRICAL, UNSHROUDED HEADERS, PWB TERMINATION, .025, SINGLE ROW, STRAIGHT THRU													
	APPROVED BY Richard Marbais																			
	SIZE A	CAGE CODE 037Z3						DWG. NO.				86101								
	REV		K		PAGE				1		OF		10							



Inches	mm
.008	0.20
.010	0.25
.015	0.38
.048	1.22
.050	1.27
.095	2.41
.100	2.54

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified all tolerances are $\pm .005$ (0.13 mm).
4. All dimensioned pictorial representations are for reference purposes only.
5. Plating transition area, contact finish "D" only.

FIGURE 1. Dimensions and configuration.

DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OH 43218-3990	SIZE A	CAGE CODE 037Z3	DWG NO. 86101
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TABLE I. Pin length. 1/ 2/

Dash number	Dimension A Contact area		Dimension B Termination area		Dimension C Overall length	
01	.100	(2.54)	.213	(5.41)	.413	(10.49)
02	.110	(2.79)	.398	(10.11)	.608	(15.44)
03	.110	(2.79)	.423	(10.74)	.633	(16.08)
04	.120	(3.05)	.368	(9.35)	.588	(14.94)
05	.135	(3.43)	.473	(12.01)	.708	(17.98)
06	.200	(5.08)	.095	(2.41)	.395	(10.03)
07	.230	(5.84)	.095	(2.41)	.425	(10.80)
08	.230	(5.84)	.120	(3.05)	.450	(14.43)
09	.230	(5.84)	.150	(3.81)	.480	(12.19)
10	.230	(5.84)	.183	(4.65)	.513	(13.03)
11	.230	(5.84)	.195	(4.95)	.525	(13.34)
12	.230	(5.84)	.213	(5.41)	.543	(13.79)
13	.230	(5.84)	.225	(5.72)	.555	(14.10)
14	.230	(5.84)	.273	(6.93)	.603	(15.32)
15	.230	(5.84)	.285	(7.24)	.615	(15.62)
16	.230	(5.84)	.388	(9.86)	.718	(18.24)
17	.230	(5.84)	.400	(10.16)	.730	(18.54)
18	.230	(5.84)	.413	(10.49)	.743	(18.87)
19	.230	(5.84)	.425	(10.80)	.755	(19.18)
20	.230	(5.84)	.483	(12.27)	.813	(20.65)
21	.230	(5.84)	.583	(14.81)	.913	(23.19)
22	.230	(5.84)	.595	(15.11)	.925	(23.50)
23	.230	(5.84)	.683	(17.35)	1.013	(25.73)
24	.230	(5.84)	.695	(17.65)	1.025	(26.04)
25	.230	(5.84)	.765	(19.43)	1.095	(27.81)
26	.270	(6.86)	.100	(2.54)	.470	(11.94)
27	.275	(6.99)	.213	(5.41)	.588	(14.94)
28	.280	(7.11)	.670	(17.02)	1.050	(26.67)
29	.318	(8.08)	.107	(2.72)	.525	(13.34)
30	.318	(8.08)	.130	(3.30)	.548	(13.92)
31	.318	(8.08)	.150	(3.81)	.568	(14.43)
32	.318	(8.08)	.203	(5.16)	.621	(15.77)
33	.318	(8.08)	.225	(5.72)	.643	(16.33)
34	.318	(8.08)	.273	(6.93)	.691	(17.55)
35	.318	(8.08)	.290	(7.37)	.708	(17.98)
36	.318	(8.08)	.417	(10.59)	.835	(21.21)
37	.335	(8.51)	.120	(3.05)	.555	(14.10)
38	.338	(8.59)	.062	(1.57)	.500	(12.70)
39	.340	(8.64)	.440	(11.18)	.880	(22.35)
40	.350	(8.89)	.353	(8.97)	.803	(20.40)

See footnotes at end of table.

DEFENSE SUPPLY CENTER, COLUMBUS COLUMBUS, OH 43218-3990	SIZE A	CAGE CODE 037Z3	DWG NO. 86101
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TABLE I. Pin length – Continued. 1/ 2/

Dash number	Dimension A Contact area		Dimension B Termination area		Dimension C Overall length	
41	.380	(9.65)	.120	(3.05)	.600	(15.24)
42	.396	(10.06)	.520	(13.21)	1.016	(25.81)
43	.400	(10.16)	.115	(2.92)	.615	(15.62)
44	.400	(10.16)	.203	(5.16)	.703	(17.86)
45	.400	(10.16)	.413	(10.49)	.913	(23.19)
46	.400	(10.16)	.513	(13.03)	1.113	(28.27)
47	.427	(10.85)	.085	(2.16)	.612	(15.54)
48	.458	(11.63)	.458	(11.63)	1.016	(25.81)
99	.495	(12.57)	.110	(2.79)	.705	(17.91)
50	.533	(13.54)	.533	(13.54)	1.166	(29.62)
51	.540	(13.72)	.095	(2.41)	.735	(18.67)
52	.590	(14.99)	.130	(3.30)	.820	(20.83)
53	.600	(15.24)	.213	(5.41)	.913	(23.19)
54	.610	(15.49)	.115	(2.92)	.825	(20.96)
55	.697	(17.70)	.128	(3.25)	.925	(23.50)
56	.700	(17.78)	.670	(17.02)	1.470	(37.34)

1/ Dimensions are in inches.

2/ Metric equivalents are given for information.

TABLE II. Contact finishes.

Plating	Contact area "A"	Termination area "B"
A <u>1/</u>	Gold	Gold
B	Tin-lead plated	Tin-lead plated
C <u>1/</u>	.200 inch (5.08 mm) gold	Tin-lead plated
D	Gold	Solder dipped
E	Tin-lead plated	Solder dipped
F <u>1/</u>	.200 inch (5.08 mm) gold	Solder dipped

1/ Selective gold plating applicable to contact pin lengths .230 inch (5.84 mm) and longer. Measured from tip of contact pin, remainder of contact post to be plated with nickel in accordance with SAE AMS-QQ-N-290, class 2, 50 microinch (1.27 μm) minimum.

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TABLE III. Dimensions D. 1/ 2/

Number of positions	Dimensions	Number of positions	Dimensions
1	.100 (2.54)	21	2.100 (53.34)
2	.200 (5.08)	22	2.200 (55.88)
3	.300 (7.62)	23	2.300 (58.42)
4	.400 (10.16)	24	2.400 (60.96)
5	.500 (12.70)	25	2.500 (63.50)
6	.600 (15.24)	26	2.600 (66.04)
7	.700 (17.78)	27	2.700 (68.58)
8	.800 (20.32)	28	2.800 (71.12)
9	.900 (22.86)	29	2.900 (73.66)
10	1.000 (25.40)	30	3.000 (76.20)
11	1.100 (27.94)	31	3.100 (78.74)
12	1.200 (30.48)	32	3.200 (81.28)
13	1.300 (33.02)	33	3.300 (83.82)
14	1.400 (35.56)	34	3.400 (86.36)
15	1.500 (38.10)	35	3.500 (88.90)
16	1.600 (40.64)	36	3.600 (91.44)
17	1.700 (43.18)	37	3.700 (93.98)
18	1.800 (45.72)	38	3.800 (96.52)
19	1.900 (48.26)	39	3.900 (99.06)
20	2.000 (50.80)	40	4.000 (101.60)

1/ Dimensions are in inches.

2/ Metric equivalents are given for information.

TABLE IV. Temperature range.

PIN designator	Temperature range °C
Blank	-40 to +105
M	-55 to +125
H	-65 to +220

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REQUIREMENTS:

Shall meet the requirements of drawing 86100.

Dimensions and configuration: See figures 1, 3 and tables I, II, III.

Temperature range: See table IV.

Dielectric withstanding voltage: 1,000 volts rms (sea level).

Current rating: 3 amperes continuous to 5 amperes maximum.

Insulation resistance: 5,000 megohms.

Resistance to soldering heat: Only applicable for "H" temperature range (see table IV).

Materials:

Insulator: The insulator shall be one of the following types of plastic. All plastic material shall be rated V-0 in accordance with UL-94.

- a. Glass-or mineral-filled nylon in accordance with ASTM D4066.
- b. Glass filled thermoplastic in accordance with ASTM D5927 or MIL-M-24519.
- c. Thermoplastic polyphenylene sulfide type GST-40F in accordance with ASTM D4067.

Contact: Three-fourth hard phosphor bronze in accordance with ASTM B139/B139M.

Contact plating: Contact and termination plating shall be 50 microinches (1.27 μm) gold in accordance with MIL-DTL-45204 or equivalent as approved by the qualifying and preparing activities, type II, grade C, class 1, or 100 microinches (2.54 μm) minimum tin-lead in accordance with SAE AMS-P-81728 over 50 microinches (1.27 μm) minimum nickel in accordance with SAE AMS-QQ-N-290, class 2. The "D" or "E" lead finish shall be hot solder dipped with SN60 or SN63 solder in accordance with J-STD-006 to meet the solderability requirements of MIL-STD-202, method 208.

Selective plating: Selective gold contact plating is for contact pin lengths .230 inch (5.84 mm) and longer. The gold plating is measured from tip of contact pin to pin body and the plating length shall be .200 inch (5.08 mm). The contact shall be plated with gold in accordance with MIL-DTL-45204 or equivalent as approved by the qualifying and preparing activities, type II, grade C, class 1 (50 microinches) over 50 microinches (1.27 μm) of nickel in accordance with SAE AMS-QQ-N-290. Nickel plating shall extend over the entire length of the pin. The recommended use of this finish is for mating with latch housings or PWB housings where the mating depth does not exceed .190 inches (4.83 mm).

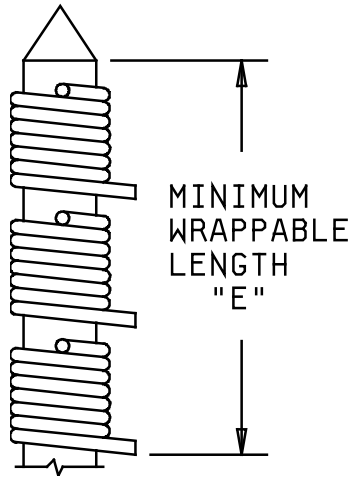
Insulator: The insulator shall be glass-or mineral-filled nylon in accordance with ASTM D4066, glass filled thermoplastic in accordance with ASTM D5927 or MIL-M-24519. All plastic material shall be rated V-0 in accordance with UL-94.

Solderless wrappost geometry: The solderless wrappost geometry shall be in accordance with figures 2 and 3.

Interface: See drawing 86060, 86103, and 93015.

Printed wiring board (PWB) hole size: .040 ± .003 inch (1.02 ± 0.076 mm).

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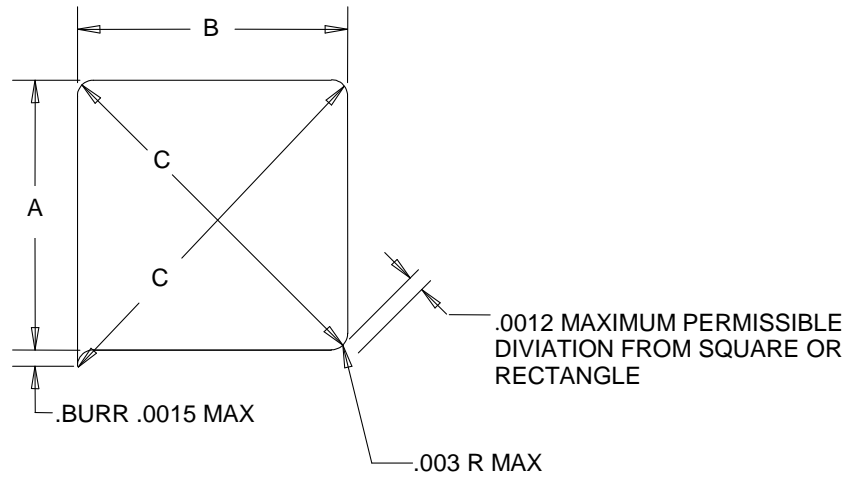
Number of wrapped connections	E length						
	Wire gage 30 (mm)	Wire gage 28 (mm)	Wire gage 26 (mm)	Wire gage 24 (mm)	Wire gage 22 (mm)	Wire gage 20 (mm)	Wire gage 18 (mm)
1	.185 (4.70)	.219 (5.56)	.226 (5.74)	.258 (6.55)	.303 (7.70)	.327 (8.31)	.391 (9.93)
2	.320 (8.13)	.388 (9.86)	.402 (10.21)	.466 (11.84)	.556 (14.12)	.604 (15.34)	.732 (18.59)
3	.455 (11.56)	.557 (14.15)	.578 (14.68)	.674 (17.12)	.809 (20.55)	.881 (22.38)	1.073 (27.25)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.

FIGURE 2. Wrappable length (typical connection).

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Inches	mm
.0012	0.030
.0015	0.038
.003	0.076

A (mm)	B (mm)	C (mm)	Parallelism (mm)	Straightness Inch/inch (mm)
.025 (0.64) nominal	.025 (0.64) nominal	.0355 (0.902) max	.002	.005
.022 (0.56) min	.022 (0.56) min	.0325 (0.826) min	(0.05)	(0.13)

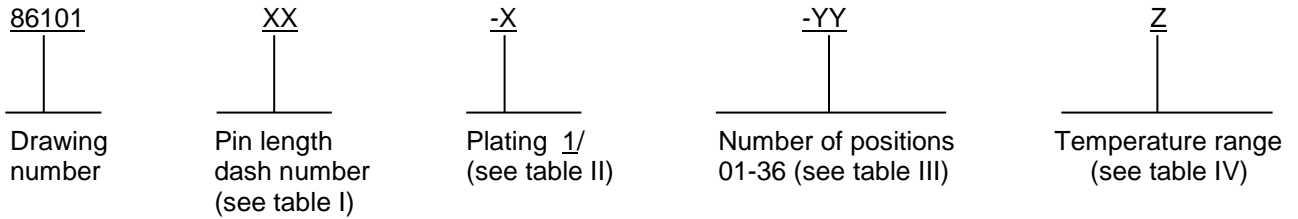
NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.

FIGURE 3. Wrappost geometry.

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Marking: The Part or Identifying Number (PIN) shall be marked on the package in accordance with MIL-STD-1285. The PIN shall include the complete DLA Land and Maritime PIN, manufacturer's name or CAGE code, and date code. The marking shall be permanent and legible in accordance with method 215 of MIL-STD-202. The PIN shall be constructed using the following format:



1/ Plating designator "C", selective plating, is not suitable for wire wrap applications.

Approved source of supply: An approved source of supply is listed herein. Additional sources will be added as they become available. The vendor listed on the requirements drawing has agreed to this drawing and a certificate of compliance has been submitted to DLA Land and Maritime-VAI.

DLA Land and Maritime drawing PIN	Vendor CAGE number	
	OAKZ5 <u>1/</u>	95238 <u>1/</u>
86101-01-X-YYZ	SPEG101Z-01-XYY-MIL	H110-YY-01-XZ
86101-02-X-YYZ	SPEG101Z-02-XYY-MIL	H110-YY-02-XZ
86101-03-X-YYZ	SPEG101Z-03-XYY-MIL	H110-YY-03-XZ
86101-04-X-YYZ	SPEG101Z-04-XYY-MIL	H110-YY-04-XZ
86101-05-X-YYZ	SPEG101Z-05-XYY-MIL	H110-YY-05-XZ
86101-06-X-YYZ	SPEG101Z-06-XYY-MIL	H110-YY-06-XZ
86101-07-X-YYZ	SPEG101Z-07-XYY-MIL	H110-YY-07-XZ
86101-08-X-YYZ	SPEG101Z-08-XYY-MIL	H110-YY-08-XZ
86101-09-X-YYZ	SPEG101Z-09-XYY-MIL	H110-YY-09-XZ
86101-10-X-YYZ	SPEG101Z-10-XYY-MIL	H110-YY-10-XZ
86101-11-X-YYZ	SPEG101Z-11-XYY-MIL	H110-YY-11-XZ
86101-12-X-YYZ	SPEG101Z-12-XYY-MIL	H110-YY-12-XZ
86101-13-X-YYZ	SPEG101Z-13-XYY-MIL	H110-YY-13-XZ
86101-14-X-YYZ	SPEG101Z-14-XYY-MIL	H110-YY-14-XZ
86101-15-X-YYZ	SPEG101Z-15-XYY-MIL	H110-YY-15-XZ
86101-16-X-YYZ	SPEG101Z-16-XYY-MIL	H110-YY-16-XZ
86101-17-X-YYZ	SPEG101Z-17-XYY-MIL	H110-YY-17-XZ
86101-18-X-YYZ	SPEG101Z-18-XYY-MIL	H110-YY-18-XZ
86101-19-X-YYZ	SPEG101Z-19-XYY-MIL	H110-YY-19-XZ
86101-20-X-YYZ	SPEG101Z-20-XYY-MIL	H110-YY-20-XZ
86101-21-X-YYZ	SPEG101Z-21-XYY-MIL	H110-YY-21-XZ
86101-22-X-YYZ	SPEG101Z-22-XYY-MIL	H110-YY-22-XZ
86101-23-X-YYZ	SPEG101Z-23-XYY-MIL	H110-YY-23-XZ
86101-24-X-YYZ	SPEG101Z-24-XYY-MIL	H110-YY-24-XZ
86101-25-X-YYZ	SPEG101Z-25-XYY-MIL	H110-YY-25-XZ
86101-26-X-YYZ	SPEG101Z-26-XYY-MIL	H110-YY-26-XZ
86101-27-X-YYZ	SPEG101Z-27-XYY-MIL	H110-YY-27-XZ
86101-28-X-YYZ	SPEG101Z-28-XYY-MIL	H110-YY-28-XZ
86101-29-X-YYZ	SPEG101Z-29-XYY-MIL	H110-YY-29-XZ
86101-30-X-YYZ	SPEG101Z-30-XYY-MIL	H110-YY-30-XZ
86101-31-X-YYZ	SPEG101Z-31-XYY-MIL	H110-YY-31-XZ

See footnotes at end of table.

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DLA Land and Maritime drawing PIN	Vendor CAGE number	
	OAKZ5 <u>1/</u>	95238 <u>1/</u>
86101-32-X-YYZ	SPEG101Z-32-XYY-MIL	H110-YY-32-XZ
86101-33-X-YYZ	SPEG101Z-33-XYY-MIL	H110-YY-33-XZ
86101-34-X-YYZ	SPEG101Z-34-XYY-MIL	H110-YY-34-XZ
86101-35-X-YYZ	SPEG101Z-35-XYY-MIL	H110-YY-35-XZ
86101-36-X-YYZ	SPEG101Z-36-XYY-MIL	H110-YY-36-XZ
86101-37-X-YYZ	SPEG101Z-37-XYY-MIL	H110-YY-37-XZ
86101-38-X-YYZ	SPEG101Z-38-XYY-MIL	H110-YY-38-XZ
86101-39-X-YYZ	SPEG101Z-39-XYY-MIL	H110-YY-39-XZ
86101-40-X-YYZ	SPEG101Z-40-XYY-MIL	H110-YY-40-XZ
86101-41-X-YYZ	SPEG101Z-41-XYY-MIL	H110-YY-41-XZ
86101-42-X-YYZ	SPEG101Z-42-XYY-MIL	H110-YY-42-XZ
86101-43-X-YYZ	SPEG101Z-43-XYY-MIL	H110-YY-43-XZ
86101-44-X-YYZ	SPEG101Z-44-XYY-MIL	H110-YY-44-XZ
86101-45-X-YYZ	SPEG101Z-45-XYY-MIL	H110-YY-45-XZ
86101-46-X-YYZ	SPEG101Z-46-XYY-MIL	H110-YY-46-XZ
86101-47-X-YYZ	SPEG101Z-47-XYY-MIL	H110-YY-47-XZ
86101-48-X-YYZ	SPEG101Z-48-XYY-MIL	H110-YY-48-XZ
86101-49-X-YYZ	SPEG101Z-49-XYY-MIL	H110-YY-49-XZ
86101-50-X-YYZ	SPEG101Z-50-XYY-MIL	H110-YY-50-XZ
86101-51-X-YYZ	SPEG101Z-51-XYY-MIL	H110-YY-51-XZ
86101-52-X-YYZ	SPEG101Z-52-XYY-MIL	H110-YY-52-XZ
86101-53-X-YYZ	SPEG101Z-53-XYY-MIL	H110-YY-53-XZ
86101-54-X-YYZ	SPEG101Z-54-XYY-MIL	H110-YY-54-XZ
86101-55-X-YYZ	SPEG101Z-55-XYY-MIL	H110-YY-55-XZ
86101-56-X-YYZ	SPEG101Z-56-XYY-MIL	H110-YY-56-XZ

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

2/ Vendor PIN covers "Blank" and "M" temperature ranges only.

Vendor CAGE number

Vendor name and address

OAKZ5

Muller-Crane
1280 Massillon Road
Building G Suite 1500n
Akron, OH 44306

95238

Winchester Electronics Corp.
199 Park Road Extension
Suite 104
Middlebury, CT 06762

**DEFENSE SUPPLY CENTER, COLUMBUS
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