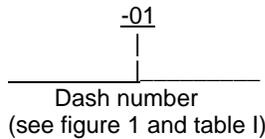
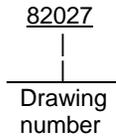


1. SCOPE

1.1 Scope. This drawing describes the requirements for a family of radiofrequency coils and radiofrequency chokes. The chokes consist of rod-type ferrite bodies with axial holes through which wire is threaded to form 1.50 or 2.50 turn radiofrequency coils. The radiofrequency coils are the radiofrequency chokes wound with 1.50 or 2.50 turns of wire.

1.2 Part or Identifying Number (PIN). The complete PIN shall be as follows:



2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

DEPARTMENT OF DEFENSE

DOD-D-1000 - Drawing, Engineering, and Associated List.

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-1285 - Marking of Electrical and Electronic Parts.

(Copies of these documents are available online at <https://assist.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1. Electrical characteristics.

3.1.1 Maximum impedance. The impedance shall be greater than the value specified in table I when measured at the specified test frequency in table I.

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3.1.2 Decrease of impedance versus frequency. The decrease in impedance shall be less than the value in table I when measured over the specified test frequency in table I.

TABLE I. Electrical characteristics.

Dash number 82027	Maximum impedance (kΩ)	Test frequency (MHz)	Decrease of impedance in frequency range	
			(MHz)	(dB)
-01	>.28	120	10 to 300	≤7
-02	>.36	250	80 to 300	≤3
-03	>.60	50	20 to 220	≤7
			35 to 100	≤3
-04	>.68	180	50 to 300	≤6
			80 to 220	≤3
-05	>.72	50	10 to 220	≤7
			30 to 100	≤3

3.2 Design and construction.

3.2.1 Interface and physical dimensions. See figure 1.

3.2.2 Material requirements. See table III.

3.2.3 Body material. Manganese-zinc ferrite in accordance with Ferroxcube specification 3S4 (dash numbers, 01, 03, and 05) and 4B1 (dash numbers 02 and 04), or equivalent manganese-zinc ferrite that will meet all requirements of table II.

3.2.4 Windings and leads. Soft or drawn annealed .024 ± .002 inch (0.61 ± 0.05 mm) diameter copper or copper alloy with tin lead or lead alloy coating.

3.2.5 Operating temperature range. -55°C to +125°C.

3.3 Marking. Marking of the coil is not required; however, each unit package shall be marked in accordance with MIL-STD-1285 and include the PIN as specified herein (see 1.2), the manufacturer's name or Commercial and Government Entity (CAGE) code, and date lot codes.

3.4 Pure Tin. The use of pure tin, as an underplate or final finish, is prohibited both internally and externally. Tin content of coil components and solder shall not exceed 97 percent, by mass. Tin shall be alloyed with a minimum of 3 percent lead, by mass (see 6.3).

3.5 Workmanship. The coil shall be uniform in quality and free from any defects that will affect life, serviceability, or appearance.

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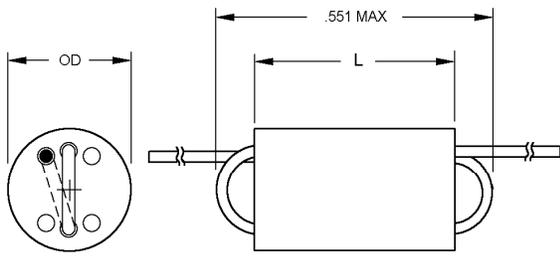


FIGURE A SINGLE CHOKE 1.50 TURNS

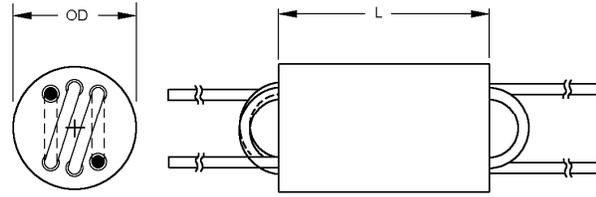


FIGURE C DOUBLE CHOKE 1.50 TURNS

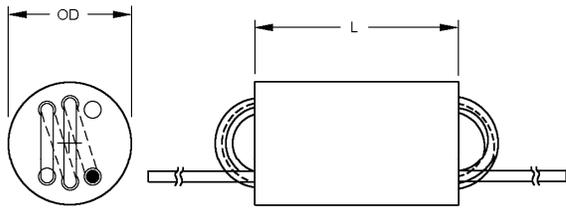


FIGURE B SINGLE CHOKE 2.50 TURNS

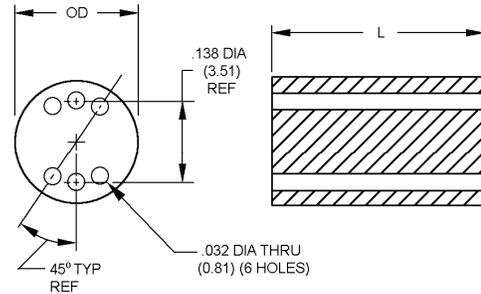


FIGURE D CHOKE CORE

Dash number	Dimensions (inches)		Number of turns	Number of windings	Lead length (inches)	Figure
	OD ±.020 (0.51)	L ±.020 (0.51)				
01	.236 (5.99)	.394 (10.01)	1.50	1	1.563 ± .250 (39.70) (6.32)	A
02	"	"	1.50	1	"	A
03	"	"	2.50	1	"	B
04	"	"	2.50	1	"	B
05	"	"	2 x 1.50	2	"	C

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Metrics are in parentheses.

FIGURE 1. Interface and physical dimensions.

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TABLE II. Material characteristics.

Requirement	Dash numbers	
	01, 03, and 05	02 and 04
Initial permeability (μ i) at +20°C to +25°C	1700 \pm 20 percent	250 \pm 20 percent
With an applied flux density (in gauss), of: Dynamically measure field intensity (in oersted) at +20°C to +25°C shall be:	3,200 \pm 15 percent	3,600 \pm 15 percent
	12 \pm 15 percent	30 \pm 15 percent
Curie point (°C), minimum	110	250
Minimum specified dc resistance at +20°C to +25°C (ohm-meter)	10 ³	10 ⁵
Linear expansion coefficient	10 to 12 x 10 ⁻⁶ /°C	10 to 12 x 10 ⁻⁶ /°C
Specific weight (g/cm ³)	4.7 to 4.9	4.4 to 4.8

4. VERIFICATION

4.1 Conformance inspection.

4.1.1 Inspection of product for delivery. Inspection of product for delivery shall consist of the group A inspection.

4.1.1.1 Group A inspection. Group A inspection shall consist of the inspections specified in table III in the order shown.

4.1.1.1.1 Sampling plan. A sample of parts shall be randomly selected from each lot in accordance with table IV, if one or more defects are found, the lot shall be rescreened and defects removed. After screening and removal of defects, a new sample of parts shall be randomly selected in accordance with table IV, if one or more defects are found in the second sample, the lot shall be rejected and shall not be supplied to this drawing.

4.1.2 Certification. The acquiring activity, at its discretion, may accept a certificate of compliance with group A requirements in lieu of performing group A inspection (see 6.2).

4.1.3 Inspection of packaging. The inspection of commercial packaging shall be as specified in the contract or purchase order (see 6.2).

TABLE III. Group A inspection.

Inspection	Requirement paragraph
Maximum impedance	3.1.1
Decrease of impedance versus frequency	3.1.2
Visual and mechanical examination Material Dimensions	3.2.2, 3.2.3, and 3.2.4 3.2.1

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TABLE IV. Group A zero defect sampling plan

Lot size		Sample size
1 to	8	5
9 to	15	5
16 to	50	5
51 to	90	7
91 to	150	11
151 to	280	13
281 to	500	16
501 to	1,200	19
1,201 to	3,200	23
3,201 to	10,00	29
10,001 to	35,000	35
35,001 to	150,000	40
150,001 to	500,000	40
500,000 and	over	40

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Intended use. Devices conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for OEM application.

6.2 Ordering data. The contract or purchase order should specify the following:

- a. Complete PIN (see 1.2).
- b. Requirements for delivery of one copy of the conformance inspection data or certificate of compliance that parts have passed conformance inspection with each shipment of parts by the manufacturer.
- c. Whether the manufacturer performs the group A inspection or provides a certificate of compliance with group A requirements.
- d. Requirements for notification of change of product to acquiring activity, if applicable.
- e. Requirements for packaging and packing.

6.3 Tin whisker growth. The use of alloys with tin content greater than 97 percent, by mass, may exhibit tin whisker growth problems after manufacture. Tin whiskers may occur anytime from a day to years after manufacture and can develop under typical operating conditions, on products that use such materials. Conformal coatings applied over top of a whisker-prone surface will not prevent the formation of tin whiskers. Alloys of 3 percent lead, by mass, have shown to inhibit the growth of tin whiskers. For additional information on this matter, refer to ASTM-B545 (Standard Specification for Electrodeposited Coatings of tin).

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6.4 Users of record. Coordination of this document for future revisions is coordinated only with the approved sources of supply and the users of record of this document. Requests to be added as a recorded user of this drawing may be achieved online at <mailto:transformercoil@dla.mil> or if in writing to: DLA Land and Maritime, Columbus, ATTN: VAT, Post Office Box 3990, Columbus, OH 43218-3990 or by telephone (614) 692-0557 or DSN 850-0557.

6.5 Supersession data. Devices covered by this drawing will replace the same commercial device covered by a contractor prepared specification or drawing as specified in table V.

TABLE V. Supersession data.

DSCC drawing PIN 82027-	Contractor drawing numbers			
	CAGE	PIN	CAGE	Drawing number
01	12909 28009	404232 16773775-001	49956	583C55
02	03538 12079	725016A0982-001 51-0343-1	97871 29251	PCL455-4406 W41B96R-0M03E01
03	03640 07397 07421 71313 28009 28009 49671	6116831-1 50-757682-1 331-070-003 22-074 16607799-001 16773775-003 2387097-1	49671 71688 80063 80063 80063 91417 07397	3311153-1 700780 SM-B-505420 SM-B-505390 SM-B-938142 5032030-103 50-701064-01
04	00752 03538 04274 13499 28480 29251	403345-1 77C716339PO2 C11478-001 240-2679-040 9100-1788 W41B96R-0M05E02	50113 65597 80063 96214 97942	136-001-000 039082-001 SM-C-963585 534479-4 583R487H01

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6.6 Approved sources of supply. Approved sources of supply are listed herein. Additional sources will be added as they become available. Assistance in the use of this drawing may be achieved online at <mailto:transformercoil@dla.mil> , or by contacting DLA Land and Maritime, ATTN: VAT, Post Office Box 3990, Columbus, OH 43218-3990 or by telephone (614) 692-0557 or DSN 850-0557.

DLA Land and Maritime drawing PIN 82027-	Vendor similar designation or type number ^{1/}	Vendor CAGE	Vendor name and address
02 03	ICV-1041-49 ICV-1041-54	09969	Vishay Dale Electronics, Inductive Products Div. 1505 East Highway 50 Yankton, SD 57078-1505
01 02 03 04 05	82027-01 82027-02 82027-03 82027-04 82027-05	0EUG1	Vishay HiRel Systems 140 Crosby Road Dover, NH 03820

^{1/} CAUTION: Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.

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