MILITARY SPECIFICATION SHEET

COILS, RADIO FREQUENCY, MOLDED, FIXED, SUBMINIATURE (IRON CORE), TYPES LT10K181 TO LT10K190, INCLUSIVE

Inactive for new design

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

The requirements for acquiring the products described herein shall consist of this specification and MIL-PRF-15305.

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. These coils are intended to be supported by their body.
4. Solderable/weldable lead wire, number 21 AWG.

FIGURE 1. Dimensions and configuration.
REQUIREMENTS:

Design, construction, and physical dimensions: See figure 1.

Style: LT10

Grade: 1
Class: A

Weight: 3.9 grams, maximum.

Operating temperature range: -55°C to +105°C.

Ambient temperature: +90°C ±5°C.

Temperature rise: 15 °C, maximum.

Terminal pull: 5 pounds, minimum.

Altitude: 70,000 feet.


Dielectric withstanding voltage:

At sea level: Method 301 of MIL-STD-202, test voltage 1,000 V rms for a minimum of 60 seconds.


Electrical characteristics: See tables I and II.

Inductance: See table I.

Q values: See table I.

Self-resonant frequency (SRF): See table I.

DC resistance (DCR): See table I.

Part or Identifying Number (PIN): MS75103 - (dash number from table I).
### TABLE I. Electrical characteristics (initial).

<table>
<thead>
<tr>
<th>1/ Dash Number</th>
<th>Superseded MS PIN</th>
<th>Inductance (μH) ±10%</th>
<th>Q (min)</th>
<th>Test Frequency (MHz)</th>
<th>SRF Minimum (MHz)</th>
<th>DC resistance Max. (ohms)</th>
<th>Rated DC current (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1</td>
<td>91189-29</td>
<td>22.0</td>
<td>50</td>
<td>2.5</td>
<td>24</td>
<td>0.295</td>
<td>725</td>
</tr>
<tr>
<td>-2</td>
<td>91189-30</td>
<td>27.0</td>
<td>45</td>
<td>2.5</td>
<td>22</td>
<td>0.350</td>
<td>660</td>
</tr>
<tr>
<td>-3</td>
<td>91189-31</td>
<td>33.0</td>
<td>60</td>
<td>2.5</td>
<td>19</td>
<td>0.550</td>
<td>525</td>
</tr>
<tr>
<td>-4</td>
<td>91189-32</td>
<td>39.0</td>
<td>55</td>
<td>2.5</td>
<td>18</td>
<td>0.650</td>
<td>465</td>
</tr>
<tr>
<td>-5</td>
<td>91189-33</td>
<td>47.0</td>
<td>65</td>
<td>2.5</td>
<td>16</td>
<td>1.00</td>
<td>390</td>
</tr>
<tr>
<td>-6</td>
<td>91189-34</td>
<td>56.0</td>
<td>65</td>
<td>2.5</td>
<td>14</td>
<td>1.15</td>
<td>360</td>
</tr>
<tr>
<td>-7</td>
<td>91189-35</td>
<td>68.0</td>
<td>75</td>
<td>2.5</td>
<td>13</td>
<td>1.85</td>
<td>285</td>
</tr>
<tr>
<td>-8</td>
<td>91189-36</td>
<td>82.0</td>
<td>75</td>
<td>2.5</td>
<td>12</td>
<td>2.10</td>
<td>265</td>
</tr>
<tr>
<td>-9</td>
<td>91189-37</td>
<td>100.0</td>
<td>75</td>
<td>2.5</td>
<td>12</td>
<td>2.50</td>
<td>245</td>
</tr>
<tr>
<td>-10</td>
<td>91189-38</td>
<td>120.0</td>
<td>95</td>
<td>0.790</td>
<td>10</td>
<td>4.10</td>
<td>195</td>
</tr>
</tbody>
</table>

1/ The coils are directly interchangeable with former PIN’s (MS91189-29 thru -38). The decrease in maximum operating temperature from 125°C to 105°C does not downgrade these coils but assures satisfactory operation at 105°C for a minimum of 2,000 hours of life, rather than a shorter period of operation at 125°C.

### TABLE II. Electrical characteristics (final).

<table>
<thead>
<tr>
<th>Inspection group</th>
<th>Allowable variation from Initial measurement</th>
<th>Allowable percent from specified minimum value in electrical characteristics (initial) table</th>
<th>Inductance (percent)</th>
<th>DC resistance</th>
<th>Self-resonant frequency</th>
<th>Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualification inspection group II</td>
<td></td>
<td></td>
<td>±2</td>
<td></td>
<td></td>
<td>-10</td>
</tr>
<tr>
<td>Group III</td>
<td></td>
<td></td>
<td>±5</td>
<td>±(3% + .001 ohm)</td>
<td>-8</td>
<td>-10</td>
</tr>
<tr>
<td>Group IV</td>
<td></td>
<td></td>
<td>±5</td>
<td>±(2% + .001 ohm)</td>
<td>-10</td>
<td>-15</td>
</tr>
<tr>
<td>Conformance inspection group C</td>
<td></td>
<td></td>
<td>±2</td>
<td></td>
<td></td>
<td>-10</td>
</tr>
<tr>
<td>Subgroup I</td>
<td></td>
<td></td>
<td>±2</td>
<td></td>
<td></td>
<td>-10</td>
</tr>
<tr>
<td>Subgroup II</td>
<td></td>
<td></td>
<td>±5</td>
<td>±(2% + .001 ohm)</td>
<td>-10</td>
<td>-15</td>
</tr>
<tr>
<td>Subgroup III</td>
<td></td>
<td></td>
<td>±5</td>
<td>±(3% + .001 ohm)</td>
<td>-8</td>
<td>-10</td>
</tr>
</tbody>
</table>

Application notes:
1. The polarizing voltage during the moisture resistance tests is applied with the positive lead connected to the coil terminals tied together, and the negative lead connected to the metal strap.
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 last previous issue.

Referenced documents.

MIL-PRF-15305
MIL-STD-202

Custodians: Preparing activity:
Army – CR DLA – CC
Navy - EC
Air Force - 11
DLA – CC

Review activities:
Army – AR, MI
Navy – AS, MC, OS, SH
Air Force – 19

Project 5950-2007-043

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 http://assist.daps.dla.mil.