REQUIREMENTS:

1. GENERAL

   A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70317.
   B. THESE CAPACITORS SHALL CONFORM TO THE REQUIREMENTS OF MIL-C-26655/38 FOR MATERIALS AND CONSTRUCTION EXCEPT AS SPECIFIED IN THIS DRAWING.
   C. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS IN HD 1015404.
   D. CAPACITORS SHALL BE PACKAGED IN ACCORDANCE WITH SUPPLIERS NORMAL COMMERCIAL PRACTICE PER LEVEL C AS DEFINED IN MIL-C-26655.

2. INSPECTION AND ACCEPTANCE:

   A. MECHANICAL DIMENSIONS AND TOLERANCES PER DRAWING.
   B. LEAD MATERIAL SHALL BE NICKEL IN ACCORDANCE WITH HD PS 1015400. C. EACH CAPACITOR SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE MANUFACTURERS UNITS SPECIFIED IN TABLE III SHALL BE SCREENED.
   D. ELECTRICAL REQUIREMENTS (25°C):

      (1) CAPACITANCE VALUE PER TABLE
      (2) DISSIPATION FACTOR AS MAXIMUM VOLTAGE: 15V OR LESS.
      (3) SERIES RESISTANCE (EXTERNAL): 10 OHMS, 1/10 WATT, FUSIBLE CASE
      (4) POWER SUPPLY: 25 AMPERES FOR 1 MINUTE CAPABILITY SIZE

   E. LEAD BEAM AND PULL TEST (DESTRUCTIVE):

      (1) LEADS SHALL WITHSTAND A 4 POUND AXIAL PULL MINIMUM WITHOUT IMPAIRMENT OF PERFORMANCE.
      (2) LEADS SHALL WITHSTAND THE BEND TEST AS SPECIFIED IN MIL-C-26655 EXCEPT THE WEIGHT SHALL BE 2 POUNDS.

3. DESIGN REQUIREMENTS:

   A. UNITS SHALL BE CAPABLE OF MEETING THE REQUIREMENTS OF MIL-C-26655 FOR CONSTRUCTION AND ENVIRONMENT.
   B. OPERATING TEMPERATURE RANGE: -55°C TO +85°C AT FULL RATED VOLTAGE; DERATED TO 2/3 RATED VOLTAGE AT +125°C.
   C. SURGE VOLTAGE: 150% OF RATED VOLTAGE.
   D. STABILITY AT HIGH AND LOW TEMPERATURE: CAPACITANCE SHALL CHANGE FROM 25°C VALUE BY NO MORE THAN ±15% AT +55°C AND BY NO MORE THAN ±15% AT 85°C.
   E. LEAD BEAM AND PULL TEST (DESTRUCTIVE):

      (1) LEADS SHALL WITHSTAND A 4 POUND AXIAL PULL MINIMUM WITH IMPAIRMENT OF PERFORMANCE.
      (2) LEADS SHALL WITHSTAND THE BEND TEST AS SPECIFIED IN MIL-C-26655 EXCEPT THE WEIGHT SHALL BE 2 POUNDS.

SPECIFICATION CONTROL DRAWING

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CAPACITOR FIXED, ELECTROLYTIC, SOLID TANTALUM

REPLACES REV G WITH CHANGES

5. OPERATING TEMPERATURE RANGE: -55°C TO +85°C AT FULL RATED VOLTAGE; DERATED TO 2/3 RATED VOLTAGE AT +125°C.

6. LEAKAGE CURRENT WHEN TESTED AT 25°C ON COMPLETION OF BURN-IN SHALL NOT BE EXCEEDED.

7. EXTRACTION READINGS FOR EACH CAPACITOR TAKEN BEFORE AND AFTER BURN-IN FOR CAPACITANCE, DISSIPATION FACTOR, LEAKAGE CURRENT SHALL BE SUBMITTED WITH EACH LOT.

8. EQUIVALENT SERIES RESISTANCE AT 25°C:

   \[ ESR = \frac{2 \cdot E_{1}^{2} - E_{2}^{2}}{2 \cdot E_{1}} \]

   WHERE:

   \( E_{1} \) = AC COMPONENT ACROSS \( C_{1} \) (RMS)
   \( E_{2} \) = AC COMPONENT ACROSS \( R_{2} \) (RMS)
   \( R_{1} \) = VC VALUE FROM TABLE I

TABLE I

<table>
<thead>
<tr>
<th>CASE SIZE</th>
<th>NOMINAL LEAD SIZE</th>
<th>DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>NO. 24 AWG</td>
<td>1/8</td>
</tr>
<tr>
<td>B</td>
<td>NO. 20 AWG</td>
<td>1/16</td>
</tr>
<tr>
<td>C</td>
<td>NO. 22 AWG</td>
<td>3/32</td>
</tr>
<tr>
<td>D</td>
<td>NO. 20 AWG</td>
<td>1/32</td>
</tr>
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</table>

9. PROCURE ONLY FROM APPROVED SOURCES LISTED IN NO 1002054 FOR THIS DRAWING.
### Table 1

<table>
<thead>
<tr>
<th>Capacitor</th>
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<th>Rated Continuous DC Voltage at 25°C</th>
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<td>5 V DC</td>
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### Table 2

#### Table 3

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<th>C1</th>
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<th>E1</th>
<th>ESM, MAX</th>
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</thead>
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<td>5.00</td>
</tr>
</tbody>
</table>

**Table Note:**
- \*1 = Max Leakage Current at 25°C in Microamperes
- \*2 = Case Size - See Table 1

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**Diagram Notes:**
- Test Circuit
- \( P_I \) = IOK CPS
- \( Q \) = \( C_1 \)

---

**Revision Notes:**
- REVISED PER TORR 03/05
- REVISED PER TORR 03/06
- REVISED PER TORR 03/07
- REVISED PER TORR 03/08
- REVISED PER TORR 03/09
- REVISED PER TORR 03/10
- REVISED PER TORR 03/11
- REVISED PER TORR 03/12
- REVISED PER TORR 03/13

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**Master Notes:**
- REPLACES REV D WITH CHANGES

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**Specifications:**
- Capacitor, Fixed, Electrolytic, Solid Tantalum
- Material: See Notes
- Heat Treatment: See Notes
- Final Finish: See Notes
- Application: See Notes

---

**Drawing Information:**
- Manned Spacecraft Center
- Houston, Texas
- Instrumentation Lab
- Drawing Date: 03/05
- Drawing Control: 1006755
- Designated Master: C
- Scale: None

---

**Notation:**
- INCHES
- DECIMALS
- TOLERANCES ON DIMENSIONS ARE IN INCHES
- DECIMALS
- DRAWN BY
- CHECKED BY
- APPROVED BY
- MANUFACTURED BY
- MANNED SPACECRAFT CENTER
- HOUSTON, TEXAS
- CAPACITOR, FIXED, ELECTROLYTIC, SOLID TANTALUM
- SPECIFICATION CONTROL DRAWING
- INSTRUMENTATION LAB
- CONSTRUCTION BRANCH
- NASA APPROVAL No. 1006755
- SIZE 2 OF 2 Sheet

---

**Photographic Scale:**
- Scale: None
- Not Applicable

---

**Material:**
- Unspecified
- Dimensions Are in Inches
- Tolerances on Fractions Decimals Angles
- Do Not Scale This Drawing
- Material: See Notes

---

**Application:**
- Not Specified
- Heat Treatment: See Notes
- Final Finish: See Notes
- Heat Treatment: See Notes
- Final Finish: See Notes
- Application: See Notes