

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

KL 1006777

1 00165 12-12-62

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
E	REPLACES REV D WITH CHANGES AND UPGRADED TO CLASS A RELEASE PER TDRR 02885	8/28/63	WJ
F	REVISED PER TDRR 03962	10/26/63	WJ
G	REVISED PER TDRR 06749	3/19/64	WJ
H	REVISED PER TDRR 07590	4/21/64	WJ
J	REVISED PER TDRR 10373	6/24/64	WJ
K	REVISED PER TDRR 18629	5/4/65	WJ

REQUIREMENTS:

1. GENERAL:

- D A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 2.
- C. UNITS SHALL BE CAPABLE OF MEETING ALL QUALIFICATION REQUIREMENTS SPECIFIED IN ND 1002045 UNLESS MODIFIED OR AMENDED BY DESIGN REQUIREMENTS SECTION OF THIS DRAWING.
- D. PACKAGING AND PACKING: FOR DASH NUMBERS 1 THRU 32 UNIT PACKAGING AND PACKING SHALL BE IN ACCORDANCE WITH ND 1002129, FOR DASH NUMBERS 33 THRU 38 UNITS SHALL BE PACKED IN SUCH A MANNER AS TO INSURE THE FOLLOWING:
 - 1.) EACH INDIVIDUAL PART SHALL BE SEPARATED FROM ALL OTHERS AND PACKED SECURELY TO PREVENT CONTACT DURING TRANSIT.
 - 2.) LEADS SHALL BE SECURED AGAINST WHIPPING OR VIBRATION DURING TRANSIT.
 - 3.) BODY MOUNTING SHALL BE SUCH THAT CAPACITORS CAN BE EASILY GRIPPED BY THE BODY AND REMOVED FROM THE PACKAGE. HANDLING OF LEADS IS TO BE HELD TO A MINIMUM.
- E. UNITS SHALL MEET ALL REQUIREMENTS OF MIL-C-11015 EXCEPT AS SPECIFIED HEREIN.

2. INSPECTION AND ACCEPTANCE:

A. MECHANICAL REQUIREMENTS:

- 1.) DIMENSIONS PER OUTLINE AND TABLE I
- 2.) LEAD DATA: LEADS PER ND 1015401. A CERTIFICATE OF COMPLIANCE WITH THIS REQUIREMENT SHALL ACCOMPANY EACH SHIPMENT.
- 3.) MARKING: PER ND1002019, EACH CAPACITOR SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE NASA PART NUMBER AND REVISION LETTER AND SERIAL NUMBER TO INDICATE COMPLETION OF BURN-IN. CAPACITANCE, CAPACITANCE TOLERANCE AND VOLTAGE RATING MAY ALSO BE MARKED ON PART. EACH CONTAINER SHALL ALSO CONTAIN THE NASA DRAWING AND DASH NUMBER TOGETHER WITH THE REVISION LETTER. MANUFACTURERS PART OR TYPE NUMBER MAY APPEAR ON THE PART AND PACKAGE.

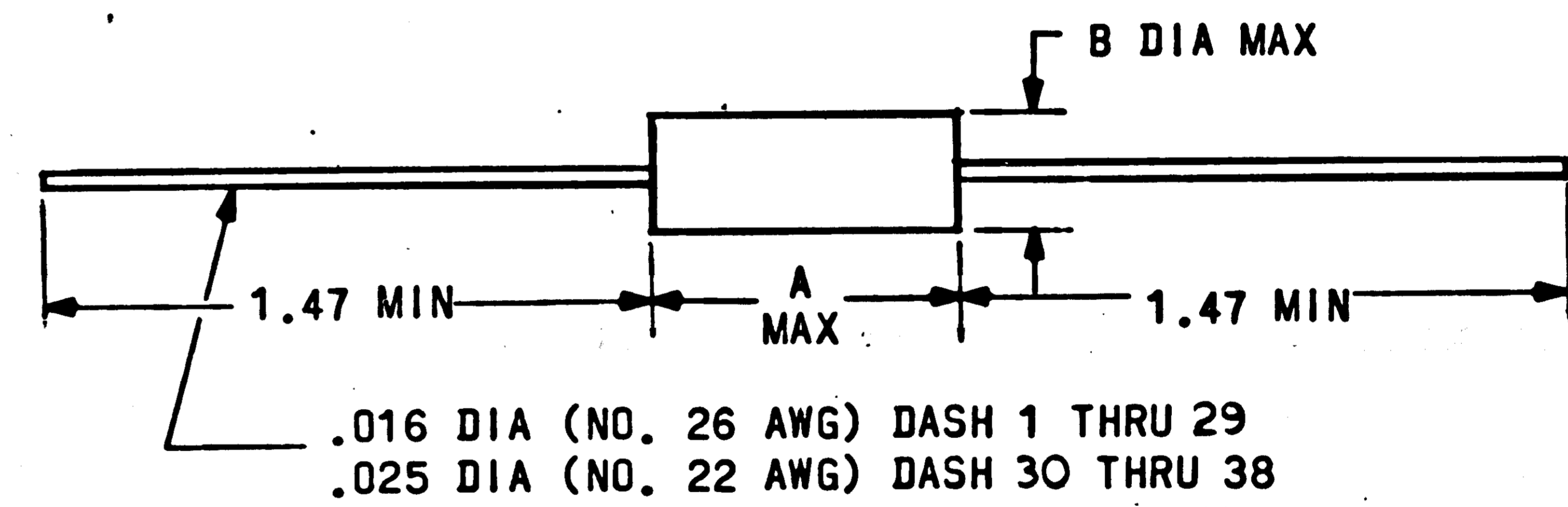
B. ELECTRICAL REQUIREMENTS:

- 1.) CAPACITANCE: PER TABLE I AT +25°C AND 1MC/SEC ± 100 KC/SEC FOR CAPACITANCE VALUES OF 100 UUF OR LESS AND AT 1KC/SEC ± 100 CPS FOR CAPACITANCE VALUES GREATER THAN 100 UUF.
- 2.) CAPACITANCE TOLERANCE: ± 10% AT +25°C AND 1MC/SEC ± 100 KC/SEC FOR CAPACITANCE VALUES OF 100 UUF OR LESS AND AT 1KC/SEC ± 100 CPS FOR CAPACITANCE VALUES GREATER THAN 100 UUF.

- 3.) INSULATION RESISTANCE: THE PRODUCT OF MEGOHM AND MICROFARADS SHALL BE 100 MEGOHM-MICROFARADS MIN, NEED NOT EXCEED 10,000 MEGOHMS.
- 4.) POWER FACTOR: 0.025 MAX. MEASURED AT +25°C AND 1MC/SEC ± 100 MC/SEC FOR CAPACITANCE VALUES OF 100 UUF OR LESS AND AT 1MC/SEC ± 100 CPS FOR CAPACITANCE VALUES GREATER THAN 100 UUF.

3. DESIGN REQUIREMENTS:

- A. PER MIL-C-11015/20 IN ADDITION TO THE REQUIREMENTS SPECIFIED HEREIN.
- B. DC WORKING VOLTAGE: 100 VOLTS AT +85°C. DERATED TO 50 VOLTS AT +125°C.
- C. OPERATING AND STORAGE TEMPERATURE RANGE: -55°C TO +125°C WITH DERATING. ALLOWANCE SHOULD BE MADE FOR CAPACITANCE CHANGE DUE TO HIGH TEMPERATURE EXPOSURE AS INDICATED IN TABLE II.
- D. LEAD STRENGTH: LEADS SHALL WITHSTAND A 4 POUND AXIAL PULL FOR ONE MINUTE. THEY SHALL ALSO WITHSTAND THE FOLLOWING TEST TWICE-WITH A 2 POUND LOAD SUSPENDED FROM THE LEAD IN A VERTICAL AXIAL POSITION, BEND THE CAPACITOR BODY IN A PLANE 90°, THEN BACK 180° TO THE OPPOSITE EXTREME, AND THEN BACK TO THE STARTING POSITION. THE LEAD SHALL BE BENT AT THE POINT OF EGRESS FROM THE CAPACITOR BODY AROUND A 1/16 INCH RADIUS. THERE SHALL BE NO PHYSICAL DAMAGE OR LOSS OF ELECTRICAL PERFORMANCE.
- E. ENVIRONMENTAL:
 - 1.) REDUCED PRESSURE: UNITS SHALL BE OPERATIVE DURING AND AFTER AND SHALL SUSTAIN NO DAMAGE AS A RESULT OF EXPOSURE TO 10⁻⁴ MM OF MERCURY FOR 96 HOURS.
 - 2.) LIFE: MAXIMUM CAPACITANCE CHANGE DURING LIFE TEST PER ND 1002045 SHALL BE ± 10%.



ⓔ REPLACES REV (D) WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE MASS DWG NO. CONTRACT 9-497		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN BY <i>W. Wilson</i> DATE 13 AUG 63 CHECKED <i>WILSON</i> 14 AUG 63		CAPACITOR, FIXED, CERAMIC DIELECTRIC	
APPROVAL <i>E. C. Hall</i> 29 Aug 63		SPECIFICATION CONTROL DRAWING	
NASA APPROVAL <i>F. M. ...</i> 7/24/63		CODE IDENT NO.	NASA DRAWING NO.
MIT APPROVAL <i>L. ...</i> 7/24/63		SIZE C	1006777
APPLICATION		SCALE NONE	WT SHEET 1 OF 2

MASTER

1006777

K 1006777

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4. SPECIAL CONDITIONING BY SUPPLIER:
A. BURN-IN: ALL UNITS SHALL BE SUBJECTED TO 2 TIMES RATED VOLTAGE AT 85°C FOR A MINIMUM OF 100 HOURS AND A MAXIMUM OF 300 HOURS...
B. THE MANUFACTURER SHALL DETERMINE AND RECORD THE FOLLOWING ELECTRICAL CHARACTERISTICS PRIOR TO AND FOLLOWING BURN-IN...
C. BURN-IN DATA SHALL BE INCLUDED WITH EACH SHIPMENT...

NOTES:
1.* THESE DASH NUMBERS ARE NONSTANDARD VALUES PER MIL-C-11015/20.

TABLE II
MAXIMUM CAPACITANCE CHANGE DUE TO HIGH TEMPERATURE EXPOSURE
Table with columns: DASH NO., CAPACITANCE CHANGE (%), and rows for temperature ranges (1-10, 11-18, 19-24, 25-39) and exposure temperatures (+55, +75, +85, +125).

TABLE I
Table with columns: DASH NO., CAPACITANCE (UUF), DIMENSIONS A, B. Rows include dash numbers from -1 to -39 with corresponding capacitance and dimension values.

REVISIONS
Table with columns: SYM, DESCRIPTION, DATE, APPROVAL. Lists revisions E through K with descriptions like 'THIS SHEET ADDED AND UPGRADED TO CLASS A RELEASE PER TDRR 02FF5'.

THIS SHEET ADDED

THE COMPLETE PART NUMBER IS THE DRAWING NUMBER PLUS THE APPLICABLE DASH NUMBER.

PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND 1002034 FOR THIS DRAWING.

Table with columns: NEXT ASSY, USED ON, APPLICATION. Includes fields for HEAT TREATMENT and FINAL FINISH.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING MATERIAL
MIT INSTRUMENTATION LAB
CAMBRIDGE MASS
CONTRACT 9-497
DRAWN: J. Foster DATE: 13 AUG 63
CHECKED: Wilson DATE: 14 AUG 63
APPROVAL: E. C. Hall 28 Aug 63
NASA APPROVAL: P. M. Hall 9/24/63
MIT APPROVAL: J. H. Hall 9/24/63

LIST OF MATERIALS
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
CAPACITOR, FIXED, CERAMIC DIELECTRIC
SPECIFICATION CONTROL DRAWING
NASA DRAWING NO. 1006777
SCALE NONE WT SHEET 2 OF 2

D
C
B
A

1006777 K