

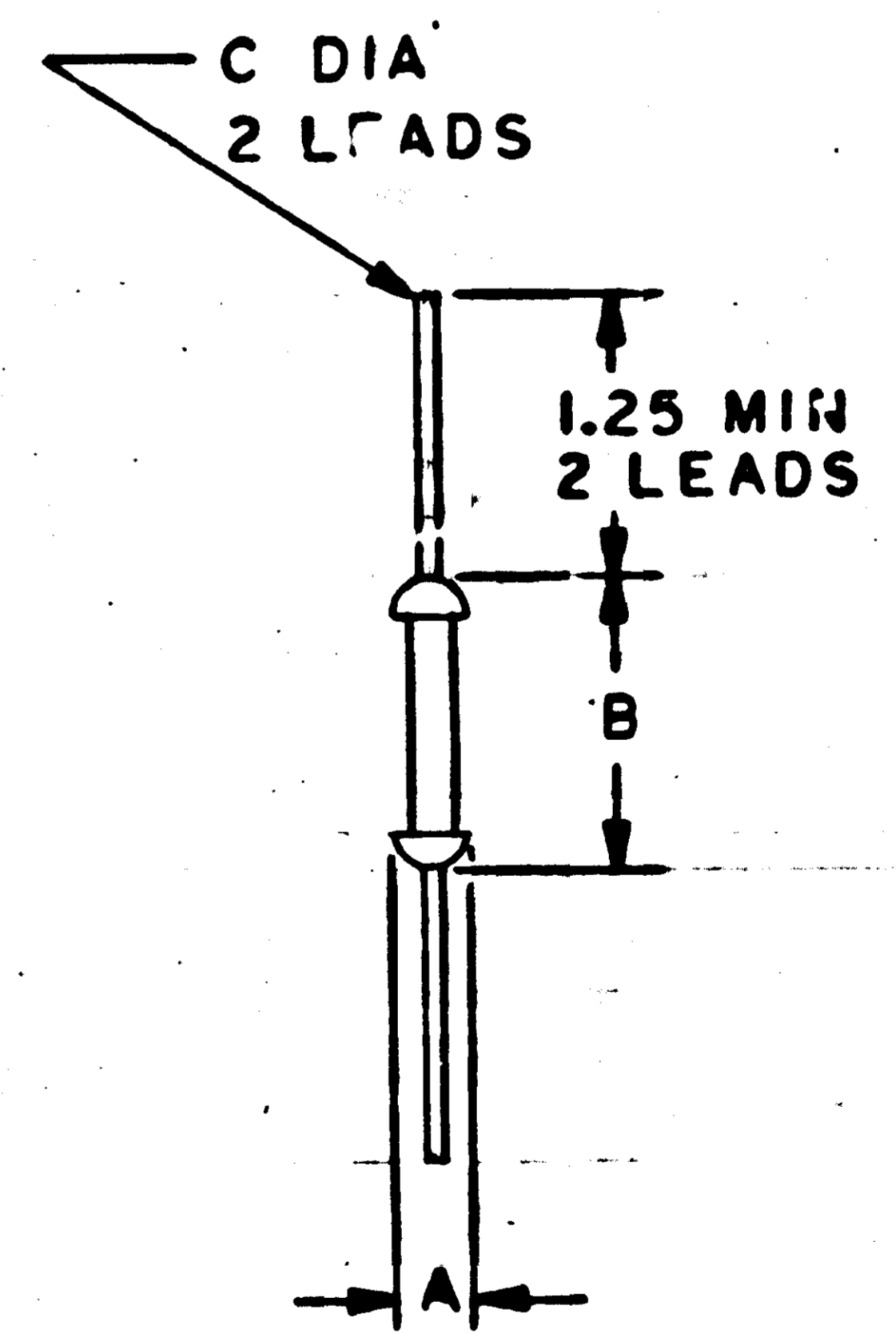
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT 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 THEREIN.

1006715

REVISIONS 03038			
SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TDRR 03038	12/16/63	WHL
A	REVISED PER TDRR 04399		WHL

NOTES:

1. GENERAL REQUIREMENTS:
 - A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
 - B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS CONTAINED IN ND 1015404, CLASS 2.
 - C. UNITS SHALL BE CAPABLE OF MEETING THE QUALIFICATION REQUIREMENTS OF ND 1002057.
 - D. MARKING: UNIT PACKAGES SHALL BE LEGIBLY MARKED PER MIL-STD-129, WITH THE NASA PART NUMBER (DRAWING NUMBER, REVISION LETTER, AND DASH NUMBER), MANUFACTURER'S NAME AND/OR SYMBOL, LOT CODE, AND DATE OF MANUFACTURE.
2. ACCEPTANCE AND INSPECTION REQUIREMENTS (100%):
 - A. MECHANICAL REQUIREMENTS:
 - (1) LEAD MATERIAL: NICKEL (GRADE A) PER ND PS 1015400.
 - (2) PROTECTIVE VARNISH: MOISTURE AND FUNGUS PROOF VARNISH PER MIL-V-173.
 - (3) CERTIFICATE OF COMPLIANCE: COMPLIANCE WITH THE LEAD AND VARNISH MATERIAL REQUIREMENT SHALL BE CERTIFIED WITH EACH SHIPMENT.
 - B. ELECTRICAL CHARACTERISTICS (AT 25° ± 0.1°C):
 - (1) RESISTANCE VALUE: TABLE I VALUE.
 - (2) RESISTANCE-TEMPERATURE CHARACTERISTIC: $R_T = R_{298} \cdot K e^{\beta(\frac{1}{T} - \frac{1}{298})}$
SEE TABLE II FOR β AND TABULATED VALUES OF R_T .
3. DESIGN REQUIREMENTS:
 - A. DISSIPATION CONSTANT: SEE TABLE I FOR THE AMOUNT OF POWER WHICH WILL RAISE THE THERMISTOR ONE DEGREE CENTIGRADE ABOVE AMBIENT.
 - B. TIME CONSTANT: SEE TABLE I FOR THE TIME REQUIRED FOR THE THERMISTOR TEMPERATURE TO CHANGE 63% INTERNALLY FOR A CERTAIN CHANGE IN AMBIENT TEMPERATURE. THE THERMISTOR WILL REACH 98% OF TEMPERATURE CHANGE IN APPROX 5 TIMES THE CONSTANT LISTED.
 - C. STORAGE LIFE: 1 YEAR MINIMUM AT ROOM TEMPERATURE AND HUMIDITY WHEN STORED IN UNOPENED CONTAINERS.
 - D. CONSTRUCTION: RESISTIVE WAFER MATERIAL WITH LEADS SOLDERED IN PLACE.
 - E. ENVIRONMENTAL: CAPABLE OF OPERATION OVER THE AMBIENT TEMPERATURE RANGE OF -55°C TO +105°C.
 - G. LEAD MATERIAL: SOLDERABLE, RELIABLE NICKEL (GRADE A).
 - H. FINISH: ...



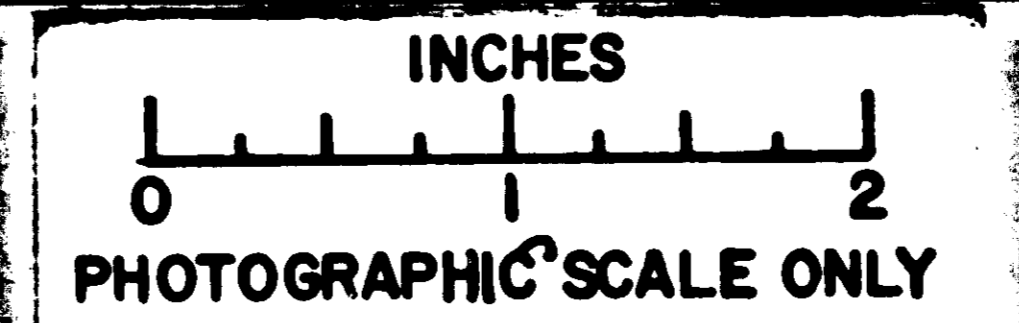
A	A
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

4. SPECIAL CONDITIONING:
 - A. TEMPERATURE CYCLING: RESISTORS SHALL BE TESTED PER MIL-STD-202, METHOD 802, CONDITION C EXCEPT TEMPERATURE EXTREMES OF -55°C AND +105°C. RESISTANCE, ONE HOUR AFTER TESTING, SHALL NOT VARY MORE THAN ± 1% FROM THE INITIAL MEASUREMENT. THERE SHALL BE NO MECHANICAL DAMAGE.
 - B. BURN-IN: RESISTORS SHALL BE BURNED IN NON-OPERATING AT 50°C FOR 100 HOURS. RESISTANCE, ONE HOUR AFTER TESTING SHALL NOT VARY MORE THAN ± 1% FROM THE INITIAL MEASUREMENT. THERE SHALL BE NO MECHANICAL DAMAGE.

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

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
±	±	±
DO NOT SCALE THIS DRAWING		
MATERIAL SEE NOTES		
HEAT TREATMENT		
FINAL FINISH		
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>[Signature]</i> DATE 13/1/63		RESISTOR, TEMPERATURE VARIABLE, NEGATIVE COEF	
CHECKED <i>[Signature]</i> DATE 1/2/63		SPECIFICATION CONTROL DRAWING	
APPROVAL <i>[Signature]</i> DATE 9/1/63		CODE IDENT NO.	NASA DRAWING NO.
NASA APPROVAL <i>[Signature]</i> DATE 9/1/63		SIZE C	100 6715
MIT APPROVAL <i>[Signature]</i> DATE 10/1/63		SCALE NONE	WT
		SHEET 1 OF 2	



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REVISIONS 03038			
SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TDRR 03038	1/1/63	WK
A	REVISED PER TDRR 04399		WK

TABLE I

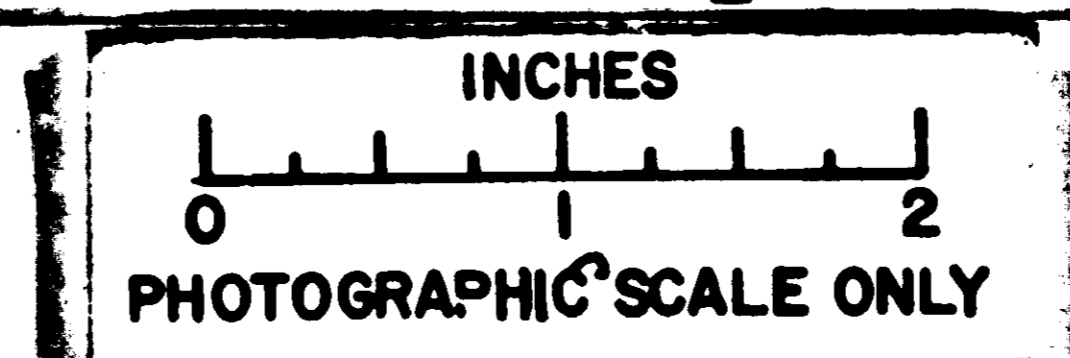
DASH NO.	NOMINAL RESISTANCE OHMS	RESISTANCE-TEMPERATURE CHARACTERISTIC AT 25°C NOTE 2.8(2)	DISSIPATION CONSTANT MW/°C	TIME CONSTANT SECONDS	DIMENSIONS		
					A MAX	B MAX	C
-1	100K ± 1%	CURVE D	± 10% 2.3 MIN	12 MIN	.120	.625	.017 .015
-2	10K ± 10%	CURVE B	2.3 MIN	12 MIN	.120	.625	.017 .015

TABLE II

TEMP °C	NOMINAL RATIO $R_T/R_{25°C}$	
	CURVE "D" $\beta = 3900 \pm 55$	CURVE "B" $\beta = 3450 \pm 80K$
-60	145.2	77.0
-50	68.9	40.2
-40	34.3	22.0
-30	17.9	12.5
-20	9.79	7.42
-10	5.56	4.54
0	3.27	2.85
+10	1.99	1.84
+20	1.25	1.22
+25	1.000	1.000
+30	.805	.825
+40	.532	.570
+50	.360	.402
+60	.248	.289
+70	.175	.212
+80	.125	.157
+90	.091	.119
+100	.0675	.0910
+110	.0508	.0705
+120	.0387	.0552
+130	.0299	.0437
+140	.0233	.0350
+150	.0184	.0265

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Ray Wheeler</i> DATE <i>20 Aug 62</i>		RESISTOR, TEMPERATURE VARIABLE, NEGATIVE COEF	
CHECKED <i>J. P. ...</i>			
DO NOT SCALE THIS DRAWING		SPECIFICATION CONTROL DRAWING	
MATERIAL		CODE IDENT NO.	NASA DRAWING NO.
HEAT TREATMENT		SIZE	1006715
FINAL FINISH		SCALE NONE	SHEET 2 OF 2
APPLICATION		WT	



1006715