

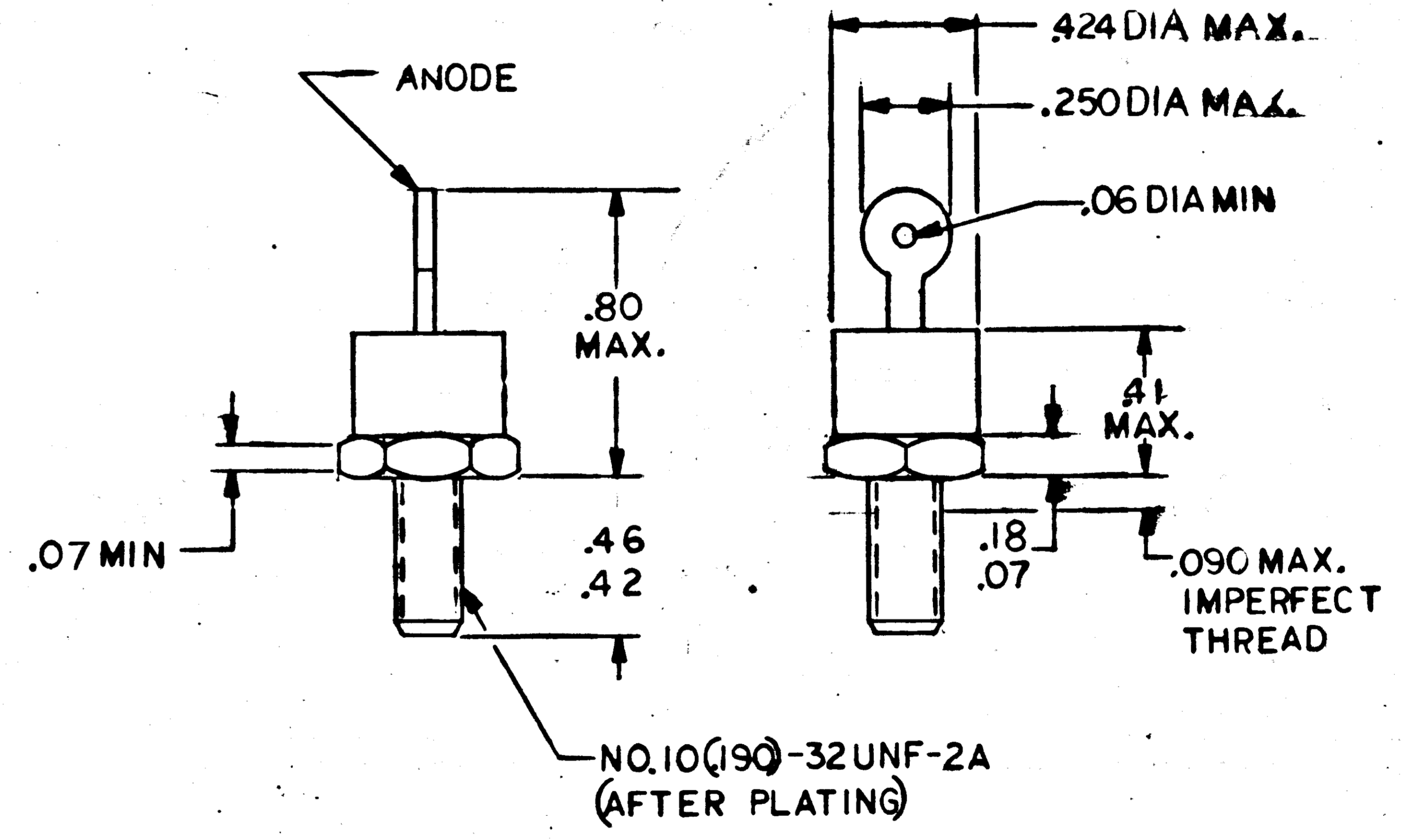
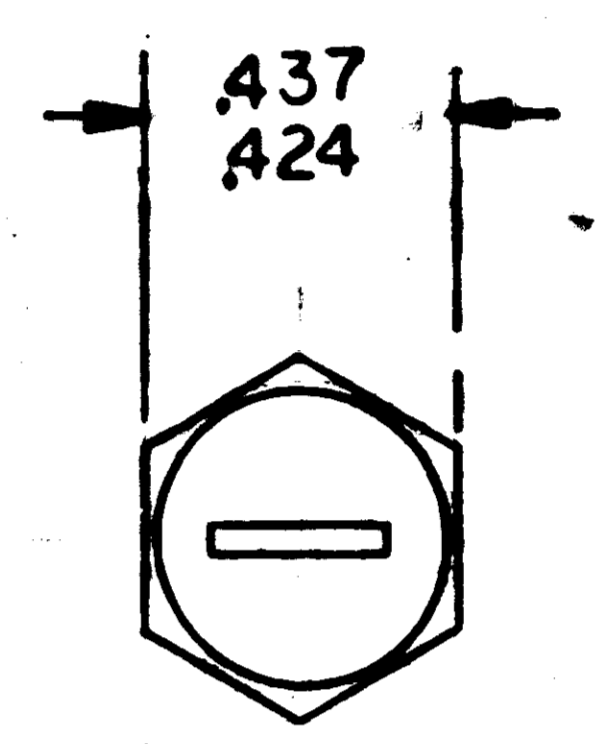
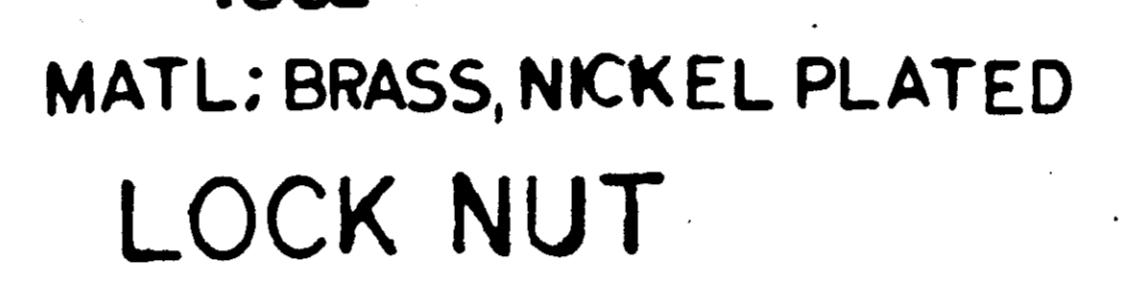
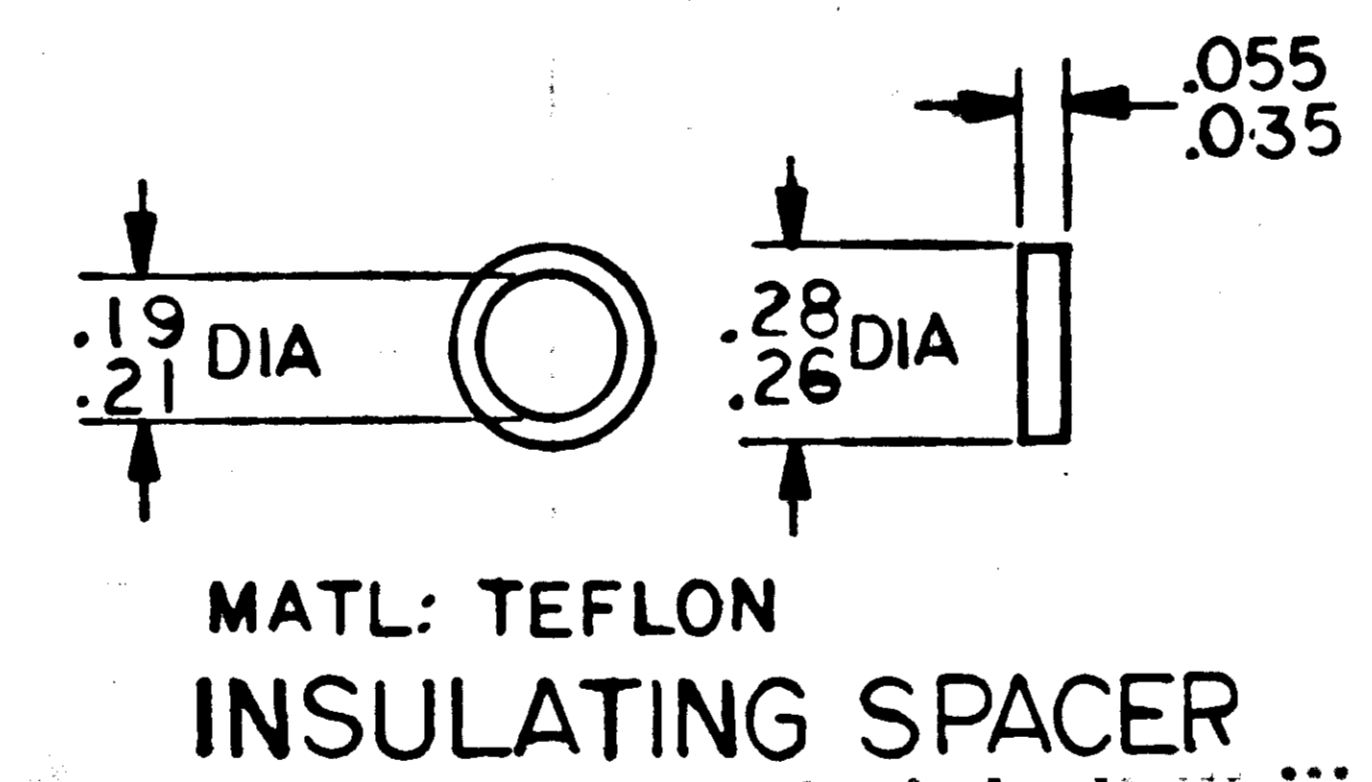
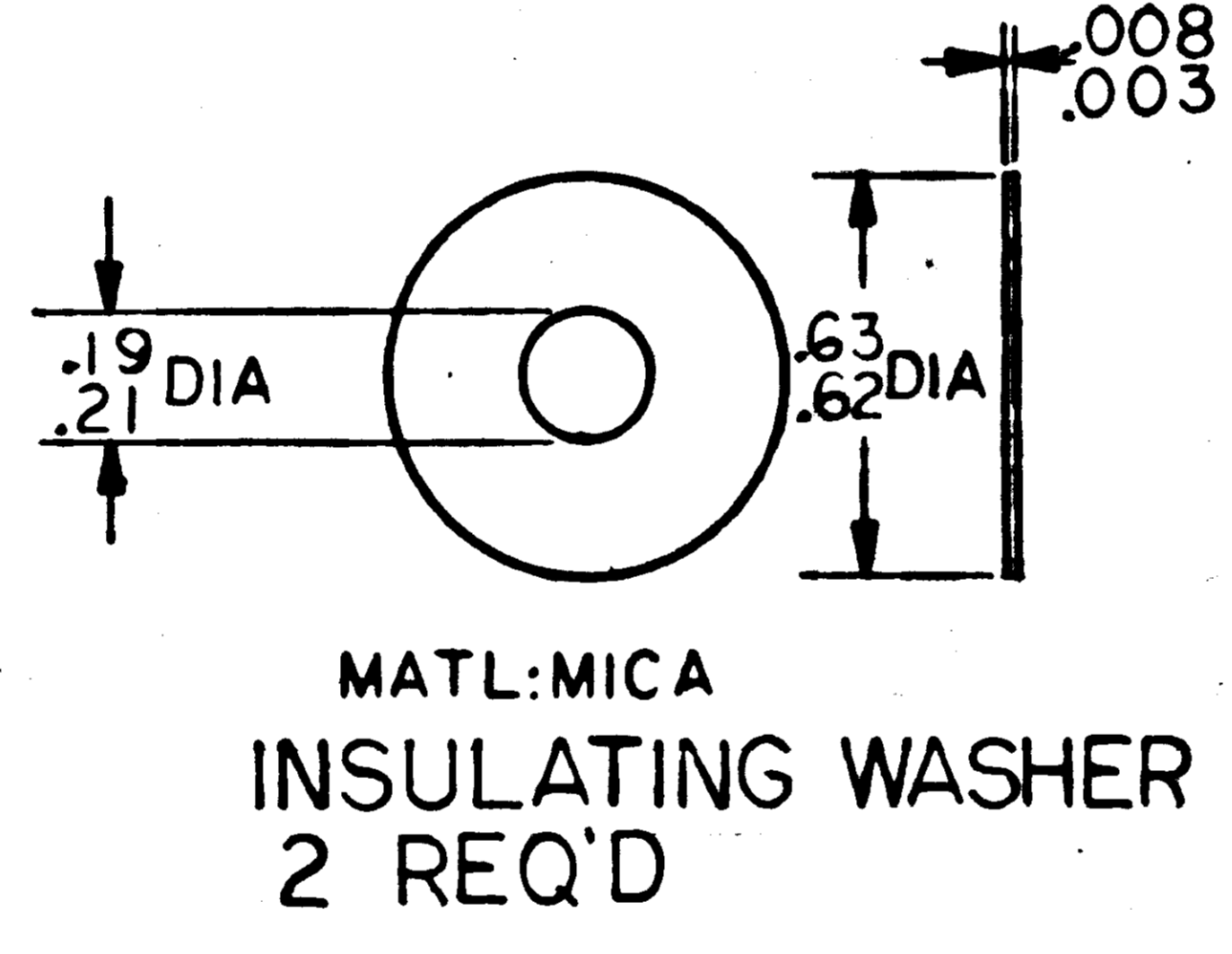
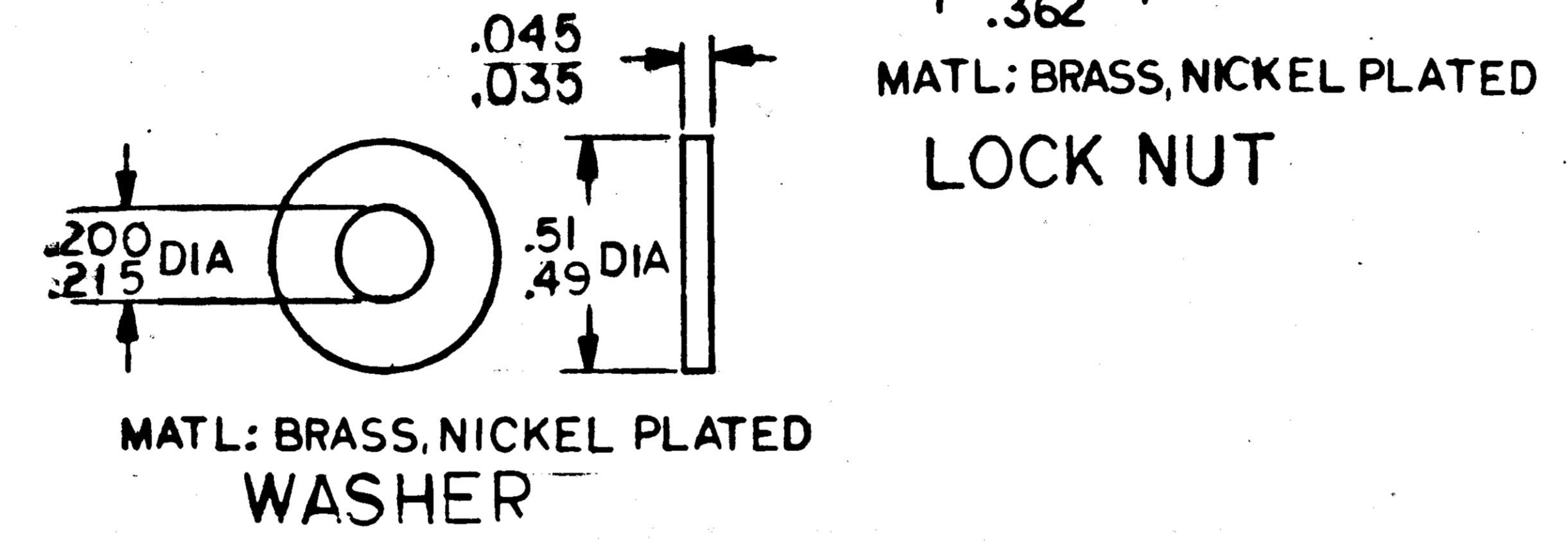
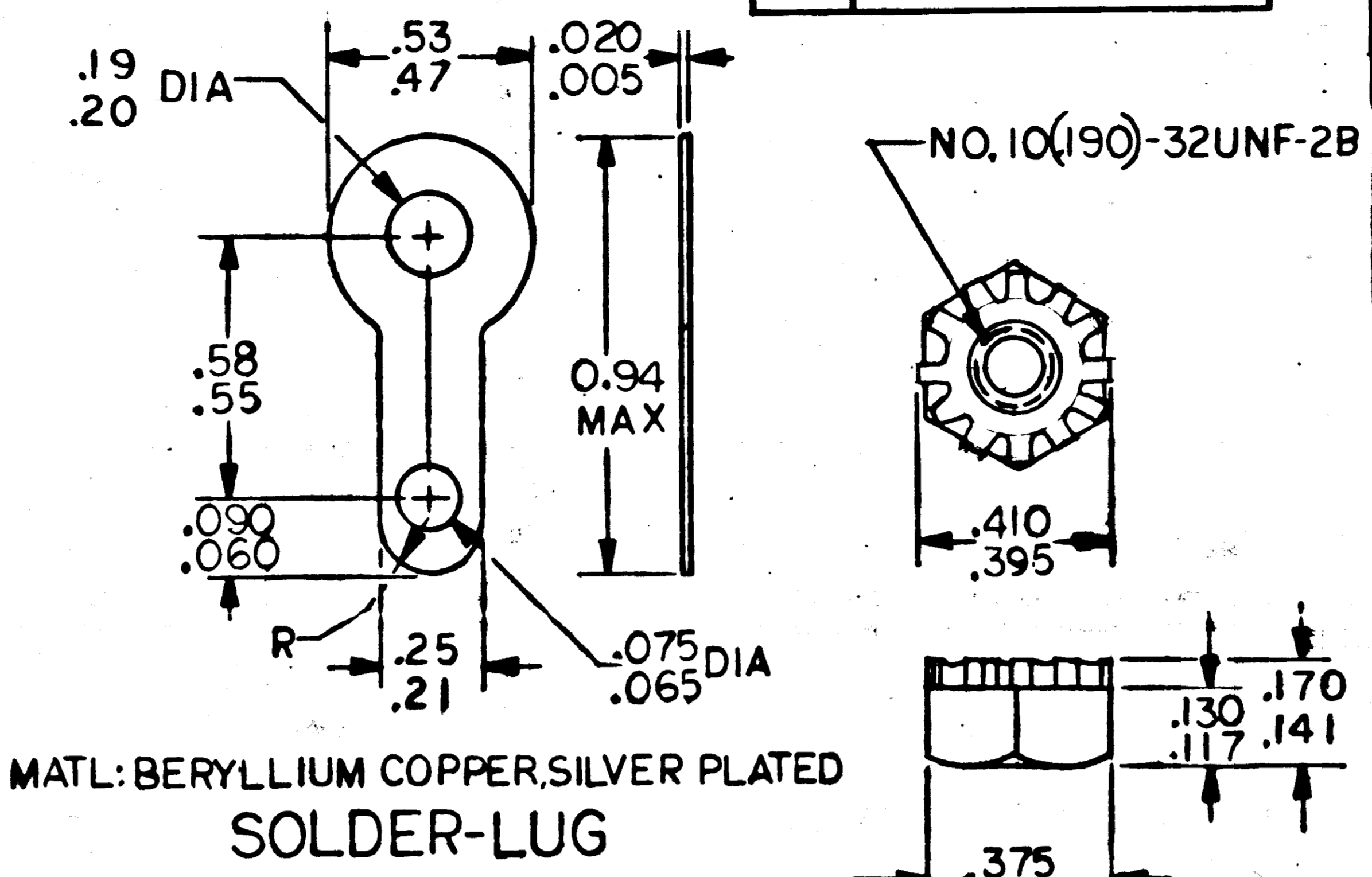
▽ 67E9001

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
--	INITIAL RELEASE CLASS A PER TDRR	17476	18/1/65 WIL
A	REVISED PER TDRR 21591		9/16/65 WIL

REQUIREMENTS:

1. GENERAL:

- A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- B. UNITS SHALL MEET THE GENERAL SPECIFICATION REQUIREMENTS OF MIL-S-19500 EXCEPT AS MODIFIED HEREIN.
- C. SUPPLIERS SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS OF ND 1015404, CLASS 2.
- D. THE PARTS SHALL BE CAPABLE OF MEETING THE QUALIFICATION REQUIREMENTS OF ND 1002054
- E. PART MARKING: UNITS SHALL BE MARKED, IN ACCORDANCE WITH ND 1002019 WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, TYPE DESIGNATION, LOT CODE, AND NASA PART NUMBER (DRAWING NUMBER AND REVISION LETTER). POLARITY SHALL ALSO BE MARKED.
- F. PREPARATION FOR DELIVERY: UNIT PACKAGING AND PACKING SHALL BE IN ACCORDANCE WITH MIL-P-19491, LEVEL A. UNITS SHALL NOT BE PACKED IN ANY MANNER WHICH MAY CAUSE DAMAGE TO LEADS. PACKAGE MARKING SHALL BE IN ACCORDANCE WITH ND 1002215.



2. INSPECTION AND ACCEPTANCE:

A. MECHANICAL REQUIREMENTS:

- (1) DIMENSIONS: AS DELINEATED HEREIN.
- (2) TERMINAL: LEAD SHALL BE ALLOY NO. 52 SOLDER DIPPED.
- (3) MARKING: AS SPECIFIED HEREIN.

B. ELECTRICAL CHARACTERISTICS: PER TABLE I.

- (1) REVERSE CURRENT (I_R)
- (2) FORWARD VOLTAGE (V_F)
- (3) RECOVERY TIME (T_{RR})
- (4) REVERSE BREAKDOWN (P_{IV})

C. VENDOR SUPPLIED DATA: EACH SHIPMENT OF PARTS SHALL BE ACCOMPANIED BY THE FOLLOWING DATA:

- (1) CERTIFICATE OF COMPLIANCE WITH LEAD MATERIAL.

3. DESIGN REQUIREMENTS:

A. ELECTRICAL RATINGS AT 25°C.

- (1) MAXIMUM RMS VOLTAGE (V_{AC}): 140 VOLTS (INTO RESISTIVE LOAD).
- (2) MAXIMUM AVERAGE FORWARD CURRENT: 14 AMPERES.
- (3) MAXIMUM FORWARD SURGE CURRENT: 150 AMPS, 1/2 CYCLE, 60 CPS, OPERATING AT CASE TEMPERATURE (T_C) 100°C.

B. TEMPERATURE RATINGS:

- (1) OPERATING CASE TEMPERATURE (T_C) WITHOUT DERATING: -65°C TO +100°C.
- (2) STORAGE TEMPERATURE: -65°C TO +175°C.
- (3) THERMAL RESISTANCE: JUNCTION TO CASE: 2°C/WATT

C. CONSTRUCTION:

- (1) SEMICONDUCTOR MATERIAL: SILICON.
- (2) CASE MATERIAL: NICKEL PLATED STEEL.
- (3) STUD MATERIAL: NICKEL PLATED COPPER ALLOY.
- (4) STUD TORQUE: SHALL BE CAPABLE OF 30 INCH-POUNDS MAXIMUM.

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

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
TOLERANCES ON	DECIMALS	ANGLES
	.xx	.xxx
	*	*
DO NOT SCALE DRAWING		
MATERIAL		
NEXT ASSY	USED ON	
APPLICATION		

QTY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
CONTRACT NO.			
DRAWN <i>[Signature]</i> DATE 11 FEB 65		SEMICONDUCTOR DEVICE, RECTIFIER, POWER-FAST SWITCHING SPECIFICATION CONTROL DRAWING	
CHECKED <i>[Signature]</i> 11 FEB 65			
APPROVAL <i>[Signature]</i>			
APPROVAL <i>[Signature]</i>			
NASA APPROVAL <i>[Signature]</i> 3/1/65		CODE IDENT NO. 80230	SIZE C
MIT APPROVAL <i>[Signature]</i>		NASA DRAWING NO. 1006329	
MIT APPROVAL		SCALE NONE	WT
		SHEET 1 OF 2	

1006329

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	INITIAL RELEASE CLASS A PER TDRR 17476	1/18/65	WR
A	REVISED PER TDRR 21591	9/18/65	WIC

TABLE I - ELECTRICAL CHARACTERISTICS

PARAMETER	MIL-STD-750 TEST CONDITIONS $T_C = 25^\circ \pm 3^\circ\text{C}$ UNLESS SPECIFIED	SYMBOL	LIMITS		UNIT
			MIN	MAX	
REVERSE VOLTAGE, PEAK	$I_R = 10 \text{ MA}$	V_R	200	-	VOLTS
REVERSE CURRENT	$V_R = 30 \text{ VDC}, T_C = 100^\circ\text{C}$	I_R	-	10	MA
FORWARD VOLTAGE	$I_F = 14 \text{ ADC}$	V_F	-	1.3	VDC
	$I_F = 7 \text{ ADC}$	V_F	-	1.0	VDC
RECOVERY TIME, REVERSE	FROM $I_F = 1.0 \text{ A}$ TO $V_R = 30 \text{ VDC}$ SEE FIGURE 2	t_{rr}	-	160	NANO-SEC

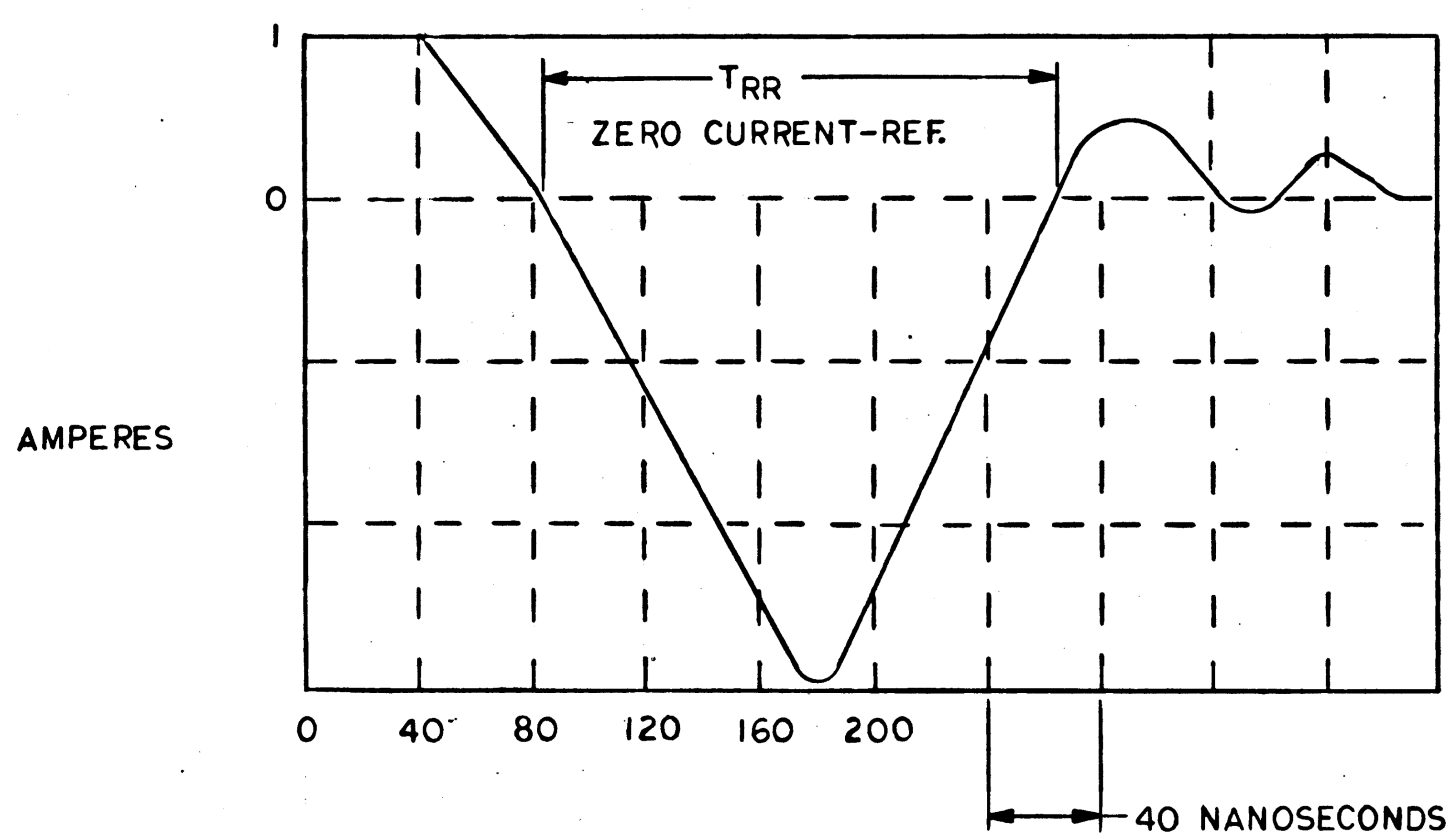


FIG. 1 TYPICAL RECOVERY PATTERN

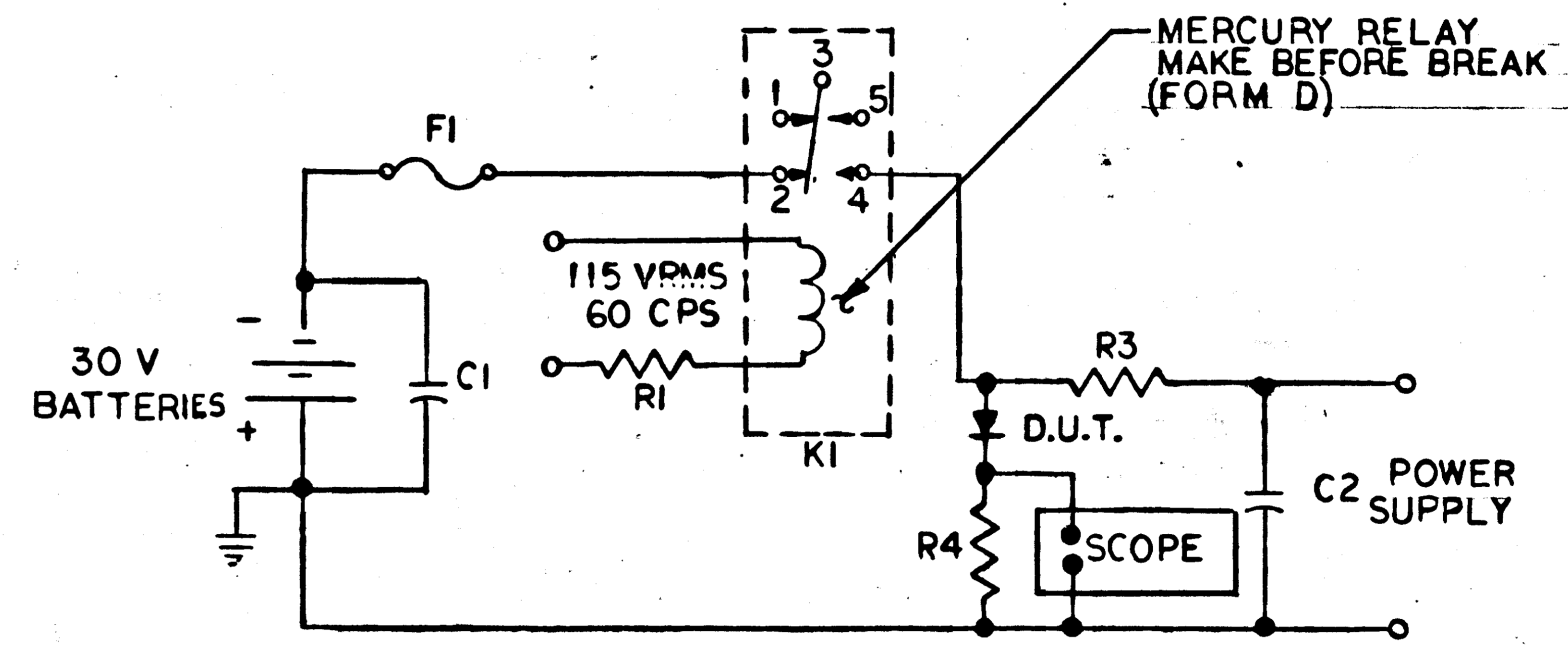


FIG. 2 RECOVERY TIME TEST CIRCUIT

- BATTERIES - 5 BURGESS 4F4H (6 VOLT) SERIES
- C1, C2 - 1 UF $\pm 10\%$ 300 VDC OIL FILLED
- R1 - 10 K 2-W 5%
- R3 - 30 OHM 30 WATTS, 10% CARBON FILM, NON-INDUCTIVE
- R4 - 1 OHM 10 W 1% NON-INDUCTIVE
- K1 - HGP-1002 CLARE
- F1 - SLO-BLO-1 AMP
- SCOPE - TEXTRONIX 541 OR 545 WITH 53/54 K PREAMPLIFIER;
P-6000 1:10 ISOLATION PROBE OR EQUIVALENT.
- POWER SUPPLY - 35 VOLTS AT 1.0 AMPERS MINIMUM, RIPPLE 3 MILLIVOLTS OR LESS, OUTPUT IMPEDANCE 1/2 OHM MAXIMUM, DC TO 2000 CPS.

NOTED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON	
DECIMALS DECIMALS ANGLES	
.xx .xxx °	
± ± ±	
DO NOT SCALE DRAWING	
MATERIAL	
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	
	CONTRACT NO.		
	DRAWN <i>B. K. J.</i> DATE 11 FEB 65		
	CHECKED <i>W. J. H.</i> 11 FEB 65		
	APPROVAL		
	APPROVAL <i>E. J. H.</i>		
	APPROVAL		
	NASA APPROVAL <i>W. J. H.</i>	CODE IDENT NO. 80230	SIZE C
	MIT APPROVAL <i>W. J. H.</i>		NASA DRAWING NO. 1006329
	MIT APPROVAL	SCALE NONE	WT
			SHEET 2 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

1006329