

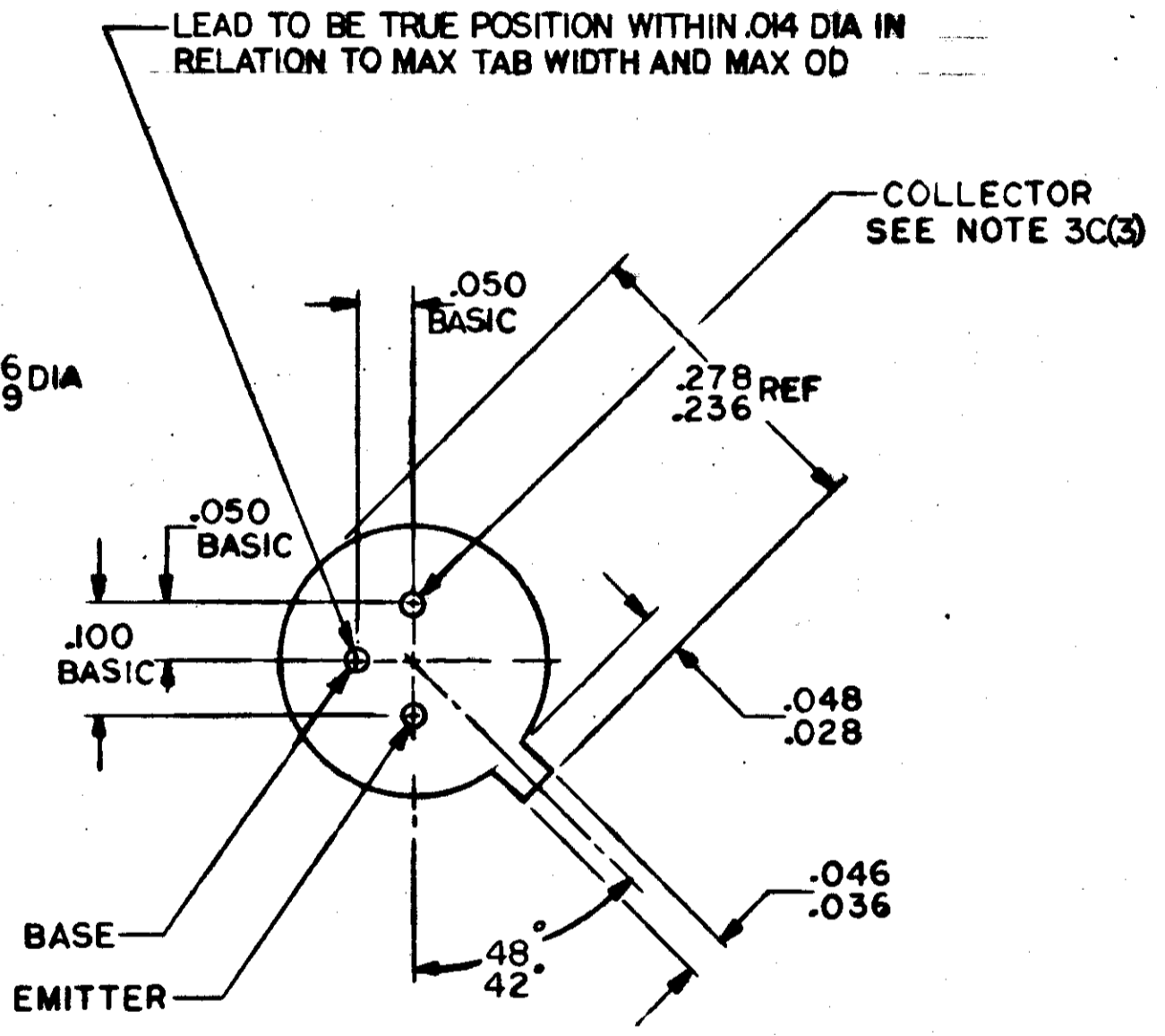
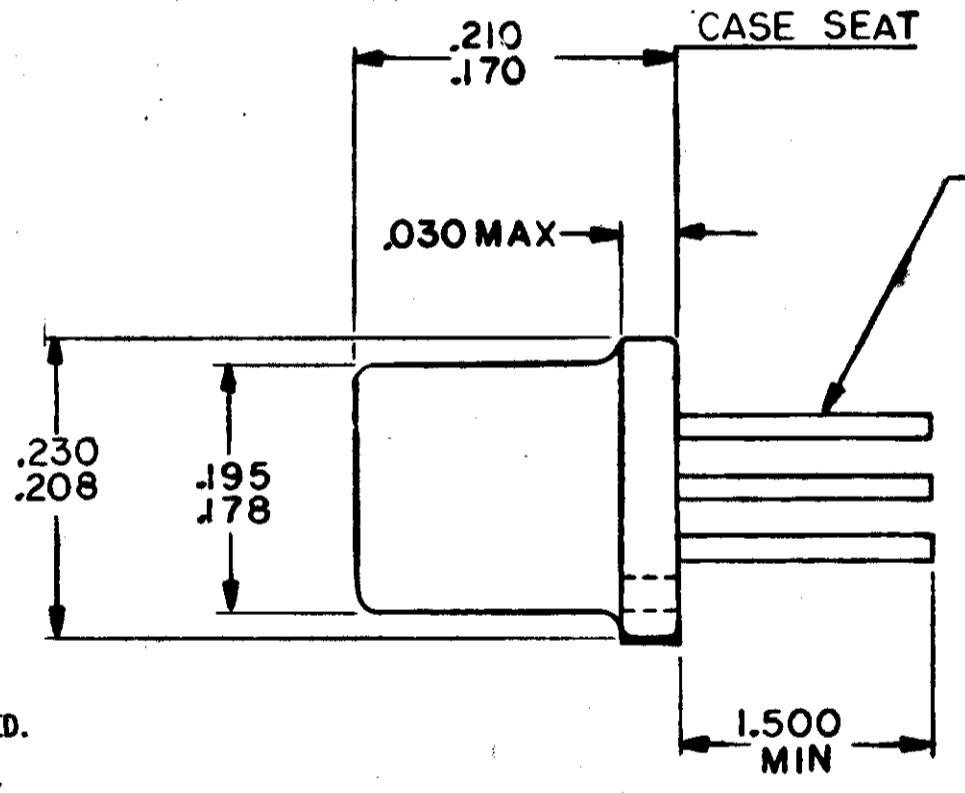
NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT 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.

0129001

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	UPGRADED TO CLASS A WITH CHANGE PER TDRR 17369	11/10/65	W. J. ...
B	REVISED PER TDRR 20618	7/27/65	W. J. ...
C	REVISED PER TDRR 24264	11/30/65	W. J. ...
D	REVISED PER TDRR 28254	5/10/66	Person

TABLE I

PRE-ELECTRICAL TEST PROCESSING			
TEST	MIL-STD-750 TEST CONDITIONS	LOT	
		1 TO 500	OVER 500
THERMAL SHOCK*	METHOD 1056, CONDITION B (+150°C TO -65°C, 3 CYCLES)	100%	NO REQUIREMENT
STORAGE LIFE* (HIGH TEMPERATURE STABILIZATION)	METHOD 1031, Tstg = 150° ± 5°C, 72 ⁺⁸ ₋₄ HOURS		
CONSTANT ACCELERATION*	METHOD 2006 (20,000 G) Y, AXIS		
POWER, BURN-IN*	METHOD 1026 P = 350 MILLIWATTS V _{CE} = -20.0 VOLTS MINIMUM T _A = +22°C MIN IN FREE AMBIENT AIR t = 168 ⁺¹² ₋₆ HOURS		
SEAL TEST*	MIL-STD-202C, METHOD 112, CONDITION C 10 ⁻⁸ ATM CC/SEC MAX = ACCEPTANCE		



- * TESTS TO BE PERFORMED IN ORDER INDICATED.
- ** PULSE ≤ 300 U SECS AT ≤ 2% DUTY CYCLE.
- *** LTPD OR PER MIL-S-19500D, TABLE CI OR CII
- **** THE PARAMETER MEASURED MAY NOT CHANGE ANY GREATER THAN THE PERCENTAGE SPECIFIED BETWEEN THE INITIAL VALUE AND THE END OF TEST VALUE. VALUES OF COLLECTOR AND EMITTER CUTOFF CURRENTS LESS THAN 10 NANOAMPERES MAY BE CONSIDERED TO BE 10 NANOAMPERES FOR CALCULATING PERCENTAGE CHANGE.
- CURRENTS TO WITHIN ± 10%.

NOTED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
TOLERANCES ON FRACTIONS DECIMALS ANGLES	
± ± ±	
DO NOT SCALE THIS DRAWING	
MATERIAL SEE NOTE	
HEAT TREATMENT NONE	
NEXT ASSY USED ON APPLICATION	
FINAL FINISH NONE	

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 10 DEC 64 CHECKED <i>[Signature]</i> DATE 10 DEC 64	TRANSISTOR, SILICON, TYPE PNP, SWITCHING	
	APPROVAL <i>[Signature]</i> APPROVAL <i>[Signature]</i>	SPECIFICATION CONTROL DRAWING	
	NASA APPROVAL <i>[Signature]</i> 11/24/65 MIT APPROVAL <i>[Signature]</i>	CODE IDENT NO. 80230 SIZE C	NASA DRAWING NO. 1006310
	MIT APPROVAL <i>[Signature]</i>	SCALE NONE	WT
			SHEET 2 OF 3

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 THEREBY.

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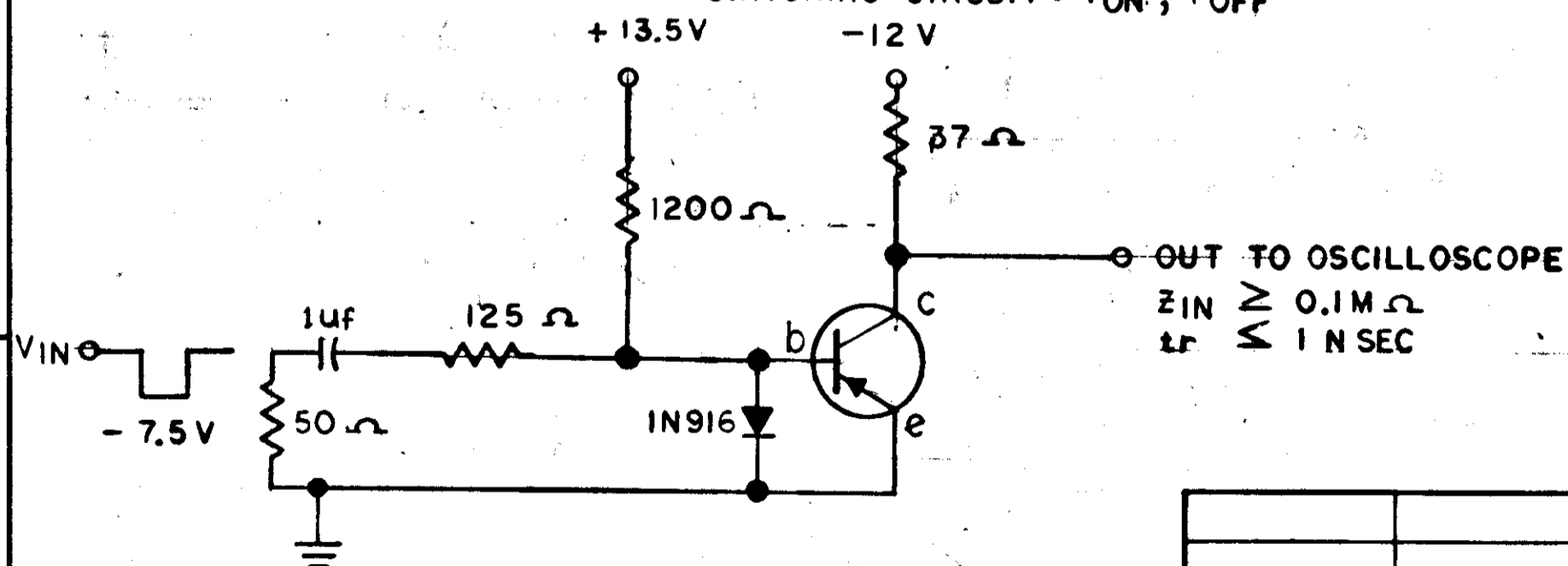
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS B		
A	UPGRADED TO CLASS A WITH CHANGE PER TDRR 17369	1/14/65	W.H.
B	REVISED PER TDRR 20618	7/27/65	W.H.
C	REVISED PER TDRR 24264	11/30/65	W.H.
D	REVISED PER TDRR 28254	5-1-66	W.H.

TABLE II

ACCEPTANCE INSPECTION

TEST	SYMBOL	MIL-STD-750 TEST CONDITIONS	LIMIT		UNITS	LOT	
			MIN	MAX		1 TO 500	OVER 500
SUBGROUP 1							
VISUAL AND MECHANICAL EXAMINATION		METHOD 2071 (SEE NOTE 2 A (3))				LTPD*** = 10 MAX ACC NO. = 3	LTPD*** = 10 MAX ACC NO. = 3
SUBGROUP 2							
COLLECTOR CUTOFF CURRENT	ICBO	V _{CB} = -50 V; I _E = 0		10	NA	100%	LTPD*** = 2 (COMBINED) MAX ACC NO. = 3
COLLECTOR CUTOFF CURRENT 150°C	ICBO	V _{CB} = -50 V; I _E = 0		10	μA		
COLLECTOR-BASE BREAKDOWN VOLTAGE	BV _{CB0}	I _C = -10 μA; I _E = 0	60		V		
EMITTER-BASE REVERSE CURRENT	IEBO	V _{EB} = -3 V; I _C = 0		0.1	μA		
EMITTER-BASE BREAKDOWN VOLTAGE	BV _{EB0}	I _E = -10 μA; I _C = 0	5		V		
COLLECTOR-EMITTER SUSTAINING VOLTAGE**	V _{CEO} SUST	I _C = -10 mA PULSED I _B = 0	60				
COLLECTOR-EMITTER CURRENT RES. RETURN	ICER	V _{CE} = -20 V; R _{BE} = 180 K		10	μA		
COLLECTOR-EMITTER THRESHOLD CURRENT	ICES	V _{BE} = -0; V _{CE} = -50 V		10	NA		
DC CURRENT GAIN**	h _{FE}	I _C = -150 mA; V _{CE} = -10 V	80	240			
DC CURRENT GAIN**	h _{FE}	I _C = -10 mA; V _{CE} = -10 V	100				
DC CURRENT GAIN**	h _{FE}	I _C = -1 mA; V _{CE} = -10 V	100				
DC CURRENT GAIN**	h _{FE}	I _C = -500 μA; V _{CE} = -10 V	30				
BASE-EMITTER SATURATION VOLTAGE**	V _{BE(sat)}	I _C = -50 mA; I _B = -2.5 mA	0.7	-1.0	V		
COLLECTOR-EMITTER SATURATION VOLTAGE**	V _{CE(sat)}	I _C = -50 mA; I _B = -2.5 mA		0.25	V		
COLLECTOR-EMITTER SATURATION VOLTAGE**	V _{CE(sat)}	I _C = -150 mA; I _B = -15 mA		0.4	V		
COLLECTOR CAPACITANCE	C _{ob}	V _{CB} = -10 V; I _E = 0; F = 0.14 mc		8	PF		
TURN ON TIME	t _{on}	I _{B1} ≈ 30 mA; I _C ≈ 300 mA t _w > 400 nsec 2% DUTY CYCLE		40	NSEC	LTPD*** = 5 MAX ACC = 0	LTPD*** = 5 MAX ACC = 0
TURN OFF TIME	t _{off}	I _{B1} = I _{B2} ≈ 30 mA; I _C ≈ 300 mA t _w > 400 nsec 2% DUTY CYCLE		120	NSEC		

SWITCHING CIRCUIT: T_{ON}; T_{OFF}



VOLTAGE IN: V_{IN} = 7.5V
 PULSE WIDTH: PW = 0.5 μSEC
 TOTAL RISE, FALL: tr + tf ≤ 6 N SEC
 IMPEDANCE IN: Z_{IN} = 50 Ω

FIGURE I

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: 1/14/65 CHECKED: <i>[Signature]</i> DATE: 1/14/65		TRANSISTOR, SILICON, TYPE PNP, SWITCHING SPECIFICATION CONTROL DRAWING	
APPROVAL: <i>[Signature]</i>			
HEAT TREATMENT: NONE		NASA APPROVAL: <i>[Signature]</i>	CODE IDENT NO. SIZE
FINAL FINISH: NONE		MIT APPROVAL: <i>[Signature]</i>	80230 C
APPLICATION		MIT APPROVAL: <i>[Signature]</i>	NASA DRAWING NO. 1006310
		SCALE: NONE	WT
		SHEET 3 OF 3	