

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 INFORMATION 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 CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

#### REQUIREMENTS:

##### 1. GENERAL:

- UNITS SHALL MEET THE GENERAL SPECIFICATION REQUIREMENTS OF MIL-S-19500 EXCEPT AS MODIFIED HEREIN.
- SUPPLIERS SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS OF ND 1015404, CLASS 2.
- UNITS SHALL MEET ALL QUALIFICATION REQUIREMENTS SPECIFIED IN ND 1002054 UNLESS MODIFIED OR AMENDED BY SECTION 3 OF THIS DRAWING.
- UNIT PACKAGING AND PACKING SHALL BE IN ACCORDANCE WITH MIL-P-19491, LEVEL A.
- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

##### 2. INSPECTION & ACCEPTANCE:

###### A. MECHANICAL REQUIREMENTS:

- LEAD DATA: LEADS SHALL BE IRON-NICKEL ALLOY (DUMET) PER ND 1015401. CERTIFICATION OF COMPLIANCE WITH THIS REQUIREMENT SHALL ACCOMPANY EACH SHIPMENT.
- MARKING: UNIT PACKAGES SHALL BE MARKED PER MIL-STD-129 WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, TYPE DESIGNATION, NASA DRAWING NUMBER, REVISION LETTER, DASH NUMBER, AND LOT CODE IDENTIFICATION. THE DIODES SHALL BE MARKED ONLY WITH COLOR CODED IDENTIFYING BANDS IN ACCORDANCE WITH MIL-S-19500 AND MIL-STD-174.

###### B. ELECTRICAL CHARACTERISTICS PER TABLE I:

- ZENER VOLTAGE ( $V_Z$ )
- ZENER IMPEDANCE ( $Z_{ZT}$ ) ( $Z_{ZK}$ )
- LEAKAGE CURRENT ( $I_{R1}$ ) ( $I_{R2}$ )

##### 3. DESIGN REQUIREMENTS:

###### A. MAXIMUM RATINGS:

- POWER DISSIPATION: 400 MILLIWATTS (SEE DERATING CURVE).
- STORAGE TEMPERATURE:  $-65^{\circ}\text{C}$  TO  $+150^{\circ}\text{C}$ .
- OPERATING TEMPERATURE:  $-65^{\circ}\text{C}$  TO  $+125^{\circ}\text{C}$  (AT 7.5 MA).
- TEMPERATURE COEFFICIENT:  $.002\%/^{\circ}\text{C}$  WITH A ZENER CURRENT OF 7.5 ma OVER THE TEMPERATURE RANGE OF  $-55^{\circ}\text{C}$  TO  $+100^{\circ}\text{C}$ .
- ENCLOSURE: GLASS, HERMETICALLY SEALED.

##### 4. SPECIAL CONDITIONING BY SUPPLIER:

- UNITS SHALL BE BURNED IN FOR 240 HOURS AT THE FOLLOWING CONDITIONS:
  - AMBIENT TEMPERATURE  $100^{\circ}\text{C} \pm 5^{\circ}\text{C}$  AT ZENER CURRENT OF 15 MA.
- THE MANUFACTURER SHALL RECORD THE ELECTRICAL CHARACTERISTICS PER TABLE I PRIOR TO AND FOLLOWING BURN IN. DATA SHALL BE SUPPLIED WITH THE PARTS.
- PARAMETRIC CHANGE LIMITS:
  - ZENER VOLTAGE:  $\pm .1\%$  OF INITIAL MEASURED VALUE.
  - DYNAMIC IMPEDANCE:  $\pm 10\%$  OF INITIAL MEASURED VALUE.
  - LEAKAGE CURRENT: SHALL NOT EXCEED 100% OF INITIAL MEASURED VALUE.
- UNITS WHICH FAIL TO MEET ALL INITIAL REQUIREMENTS OR WHICH EXCEED THE SPECIFIED LIMITS FOR PARAMETRIC CHANGES FOLLOWING BURN IN SHALL NOT BE SHIPPED.

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

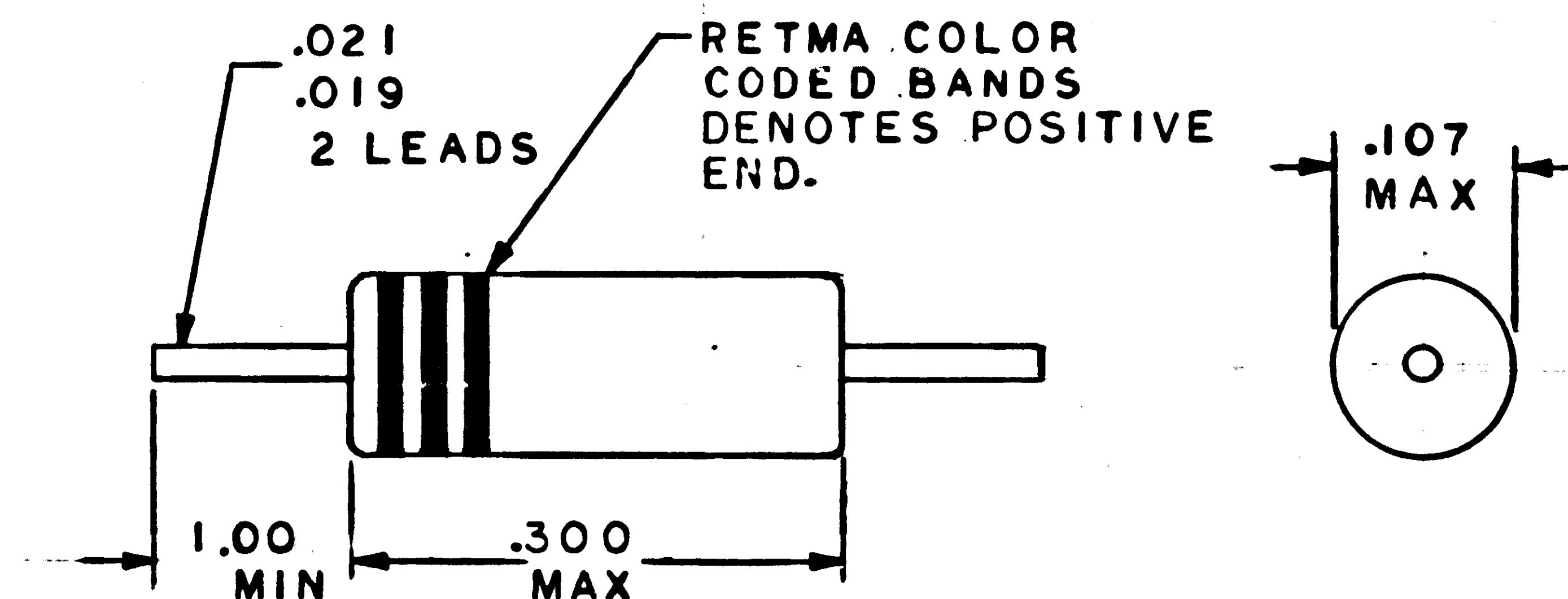
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8289001

#### REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
B	REDRAWN AND UPGRADED TO CLASS "A" WITH CHANGES PER TDRR 1637	4/19/63	S.F.A.

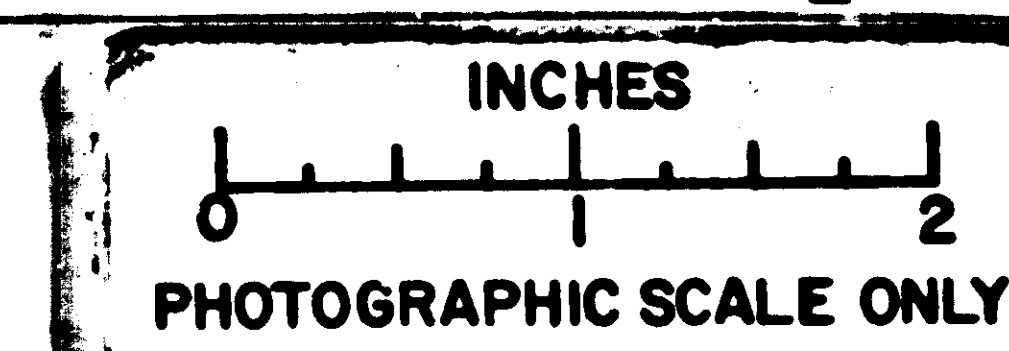


ⓑ REPLACES REV A WITH CHANGES

B	B
A	A
-	-
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
		FRACTIONS DECIMALS ANGLES
		$\pm$ $\pm$ $\pm$
		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	
		SEMICONDUCTOR DEVICE, DIODE	
		SPECIFICATION CONTROL DRAWING	
		NASA APPROVAL <i>[Signature]</i> 4/19/63	
		MIT APPROVAL <i>[Signature]</i> 4/19/63	
		CODE IDENT NO. SIZE	NASA DRAWING NO.
		C	1006838
		SCALE NONE WT	SHEET 1 OF 2



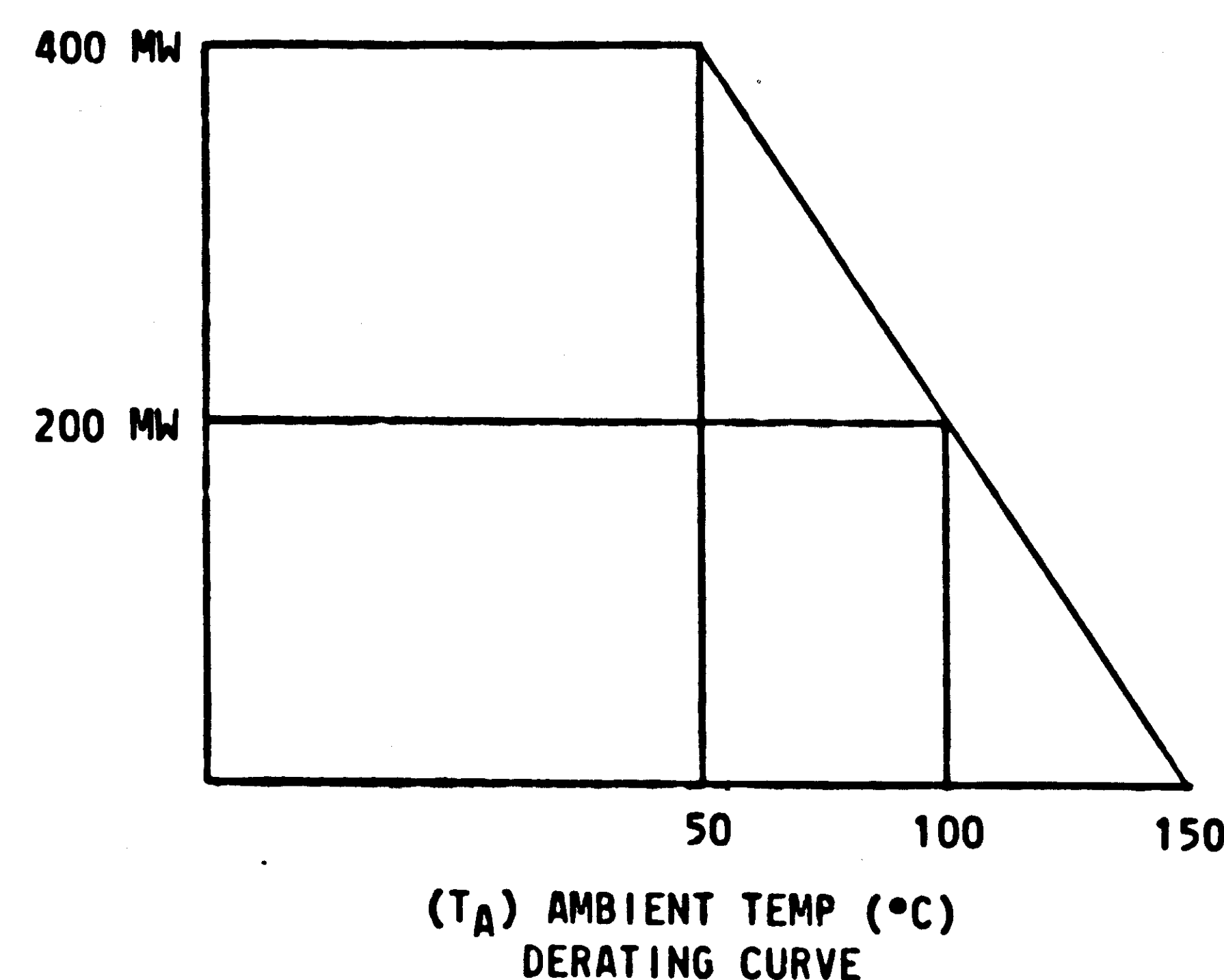
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REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
B	REDRAWN AND UPGRADED TO CLASS "A" WITH CHANGES PER TDRR 1637	4/19/63	X.S.L.

TABLE I

ELECTRICAL CHARACTERISTICS AT AMBIENT TEMPERATURE = 29°C (UNLESS OTHERWISE SPECIFIED)					
PARAMETER	CONDITIONS	SYMBOL	SPECIFICATION LIMITS		
			MIN	MAX	UNITS
ZENER VOLTAGE	$I_{ZT} = 7.5 \text{ MA}$	$V_Z$	5.9	6.5	VOLTS
ZENER IMPEDANCE	$I_{ZT} = 7.5 \text{ MA}$	$Z_{ZT}$	-	10	OHMS
ZENER IMPEDANCE	$I_{ZK} = 1 \text{ MA}$	$Z_{ZK}$	-	150	OHMS
LEAKAGE CURRENT	$V_Z = 5.0 \text{ VOLTS}$	$I_{R1}$	-	100	ua
LEAKAGE CURRENT	$V_Z = 3.0 \text{ VOLTS @ } 100^\circ\text{C}$	$I_{R2}$	-	200	ua



Ⓑ REPLACES REV A WITH CHANGES

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 <u>G. Gresh</u> DATE <u>4/11/63</u> CHECKED <u>J. R. Gresh</u> DATE <u>4/11/63</u> APPROVAL <u>Edmund C. Hall</u> DATE <u>4/11/63</u>		SEMICONDUCTOR DEVICE, DIODE	
MATERIAL		SPECIFICATION CONTROL DRAWING	
HEAT TREATMENT		CODE IDENT NO.	NASA DRAWING NO.
FINAL FINISH		SIZE	1006838
NEXT ASSY	USED ON	SCALE NONE	WT
APPLICATION		SHEET 2 OF 2	

