

REVISIONS


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**1.0 SCOPE:**

**1.1 SCOPE:**

THIS DRAWING DESCRIBES DEVICE REQUIREMENTS FOR CLASS H MICROCIRCUITS TO BE PROCESSED IAW MIL-PRF-38534.

**1.2 PART NUMBER:**

THE PART NUMBER SHALL BE:

**1.2.1 DEVICE TYPE:**

**1.2.2 CASE OUTLINE:**

THE CASE OUTLINE SHALL BE AS DESIGNATED IN FIGURE 1.

**1.3 ABSOLUTE MAXIMUM RATINGS:**

**1.4 RECOMMENDED OPERATING CONDITIONS:**

**1.5 DESIGN INFORMATION:**

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**2.0 APPLICABLE DOCUMENTS:**

**2.1 GOVERNMENT SPECIFICATIONS, STANDARDS AND HANDBOOKS:**

UNLESS OTHERWISE SPECIFIED, THE FOLLOWING SPECIFICATIONS, STANDARDS AND HANDBOOKS IN ISSUE AT THE DATE OF DEVICE PROCUREMENT FORM A PART OF THIS DRAWING TO THE EXTENT SPECIFIED HEREIN.

**SPECIFICATIONS:**

**MILITARY:**

MIL-PRF-38534 - PERFORMANCE SPECIFICATION HYBRID MICROCIRCUITS, GENERAL SPECIFICATION FOR

**STANDARDS:**

**MILITARY:**

MIL-STD-883 - TEST METHODS AND PROCEDURES FOR MICROELECTRONICS

MIL-STD-1686 - ELECTROSTATIC DISCHARGE CONTROL PROGRAM

**HANDBOOKS:**


**MILITARY:**

MIL-HNDBK-263 - ELECTROSTATIC DISCHARGE CONTROL HANDBOOK

( COPIES OF THE MILITARY SPECIFICATIONS AND STANDARDS ARE AVAILABLE FROM THE NAVAL PUBLICATIONS AND FORMS CENTER, [ATTN: LIPODS], 5801 TABOR AVE, PHILADELPHIA, PA 19120-5099.)

**2.2 ORDER OF PRECEDENCE:**

IN THE EVENT OF CONFLICT BETWEEN THIS DRAWING AND THE REFERENCES CITED HEREIN, THIS DRAWING SHALL TAKE PRECEDENCE.

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**3.0 REQUIREMENTS:**

**3.1 ITEM REQUIREMENTS:**

THE INDIVIDUAL ITEM REQUIREMENTS SHALL BE IAW MIL-PRF-38534 AND AS SPECIFIED HEREIN.

**3.2 DESIGN, CONSTRUCTION AND PHYSICAL DIMENSION:**

THE DESIGN, CONSTRUCTION AND PHYSICAL DIMENSIONS SHALL BE IAW MIL-PRF-38534 AND HEREIN.

**3.2.1 CASE OUTLINE:**

THE CASE OUTLINE SHALL BE IAW FIGURE 1.

**3.2.2 TERMINAL CONNECTIONS/ELECTRICAL SCHEMATIC:**

THE TERMINAL CONNECTIONS SHALL BE AS SPECIFIED IN FIGURE 2. THE ELECTRICAL SCHEMATIC SHALL BE AS SPECIFIED IN FIGURE 3.

**3.3 ELECTRICAL PERFORMANCE CHARACTERISTICS:**

UNLESS OTHERWISE SPECIFIED, THE ELECTRICAL PERFORMANCE CHARACTERISTICS ARE AS SPECIFIED IN TABLE I AND APPLY OVER THE FULL OPERATING TEMPERATURE RANGE.


**3.4 ELECTRICAL TEST REQUIREMENTS:**

THE ELECTRICAL TEST REQUIREMENTS SHALL BE THE SUBGROUPS SPECIFIED IN TABLE II. THE ELECTRICAL TEST FOR EACH SUBGROUP ARE DESCRIBED IN TABLE I.

**3.5 MARKING:**

PART MARKING SHALL BE IAW MIL-PRF-38534 AND SHALL INCLUDE THE FOLLOWING AND COMMENSURATE WITH DEVICE SIZE IN THE ORDER OF PRECEDENCE SHOWN:

- 3.5.1 INDEX POINT OR PIN 1 IDENTIFICATION AND ESD IDENTIFIER.
- 3.5.2 PART IDENTIFICATION NUMBER
- 3.5.3 MANUFACTURER'S CAGE CODE, LOGO
- 3.5.4 INSPECTION LOT CODE
- 3.5.5 COUNTRY OF ORIGIN
- 3.5.6 MANUFACTURER'S PART NUMBER IF DIFFERENT THAN PART ID NUMBER.
- 3.5.7 ANY OTHER INFORMATION AT THE MANUFACTURER'S OPTION

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# TABLE I ELECTRICAL PERFORMANCE CHARACTERISTICS

PARAMETER	CONDITIONS <sup>1/</sup>		SGRP	MIN	<sup>3/</sup> TYP	MAX	UNITS

**NOTES:**

- UNLESS OTHERWISE SPECIFIED THE FOLLOWING TEST CONDITIONS SHALL APPLY:
- PARAMETER, IF NOT TESTED SHALL BE GUARANTEED TO THE SPECIFIED LIMITS IN TABLE I.
- TYPICAL PARAMETERS ARE REPRESENTATIVE OF ACTUAL DEVICE PERFORMANCE BUT ARE FOR REFERENCE ONLY.

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	DRAFTING CHECK	DATE		<b>SOURCE CONTROL DRAWING</b>		
MATERIAL <b>N/A</b>	ENGINEERING CHECK	DATE				
FINISH <b>N/A</b>	QUALITY ASSURANCE	DATE		MSK DWG. NO.	REV.	

TABLE II

MIL-PRF-38534 TEST REQUIREMENTS	SUBGROUPS
INTERIM ELECTRICAL PARAMETERS	1
FINAL ELECTRICAL TEST PARAMETERS	1, 2, 3, 4 1/ 2/
GROUP A TEST REQUIREMENTS	1, 2, 3, 4
GROUP C END-POINT ELECTRICAL PARAMETERS	1, 4

**NOTES:** 1/ PERCENT DEFECTIVE ALLOWABLE APPLIES TO SUBGROUP 1.  
2/ INDUSTRIAL GRADE DEVICES (P/N MSK ) SHALL BE TESTED TO SUBGROUPS 1 AND 4 ONLY.  
ANY REFERENCE TO MILITARY DOCUMENTS DOES NOT APPLY TO THE INDUSTRIAL DEVICE.

### 3.7 NOTIFICATION OF CHANGE:

NOTIFICATION OF CHANGE SHALL BE PROVIDED TO THE PROCURING ACTIVITY FOR WRITTEN APPROVAL PRIOR TO IMPLEMENTATION OF DESIGN AND/OR MANUFACTURING CHANGES AFFECTING THE ITEM AS DEFINED BY THE "CHANGE OF QUALIFIED PRODUCT OR QUALITY ASSURANCE PROGRAM" PARA. OF MIL-PRF-38534. BASELINE FOR CHANGES SHALL BE REFERENCED TO THE FIRST LOT OF ITEMS SUCCESSFULLY COMPLETING THE QUALITY CONFORMANCE INSPECTION REQUIRED BY THIS DOCUMENT (SEE 3.1).

### 3.8 CERTIFICATION OF CONFORMANCE AND ACQUISITION TRACEABILITY:

CERTIFICATION OF CONFORMANCE AND ACQUISITION TRACEABILITY SHALL BE PER MIL-PRF-38534 AND THIS DRAWING.

### 4.0 QUALITY ASSURANCE PROVISIONS:

#### 4.1 SAMPLING AND INSPECTION:

SAMPLING AND INSPECTION PROCEDURES SHALL BE IAW MIL-PRF-38534 CLASS H.

#### 4.2 ELEMENT EVALUATION:

ELEMENT EVALUATION SHALL BE IAW MIL-PRF-38534.

#### 4.3 SCREENING:

SCREENING SHALL BE IAW MIL-PRF-38534 CLASS H AND SHALL BE CONDUCTED ON ALL DEVICES PRIOR TO PERIODIC INSPECTION.

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	DRAFTING CHECK	DATE					
	ENGINEERING CHECK	DATE					
	QUALITY ASSURANCE	DATE					
MATERIAL N/A							
FINISH N/A				MSK DWG. NO.	REV.	SHEET 06 OF 12	DEPARTMENT / COPY NO.

THE FOLLOWING ADDITIONAL CRITERIA SHALL APPLY:

- a. BURN-IN TEST, MIL-STD-883, METHOD 1030, 1015 AND FIGURE 4.
- b. INTERIM AND FINAL ELECTRICAL TEST PARAMETERS SHALL BE AS SPECIFIED IN TABLE II HEREIN, EXCEPT INTERIM ELECTRICAL PARAMETER TESTS PRIOR TO BURN-IN ARE OPTIONAL AT THE DISCRETION OF THE MANUFACTURER.

#### 4.4 CONFORMANCE INSPECTION:

CONFORMANCE INSPECTION SHALL BE IAW MIL-PRF-38534 CLASS H AND AS SPECIFIED HEREIN.

##### 4.4.1 GROUP A INSPECTION:

GROUP A INSPECTION SHALL BE IAW MIL-PRF-38534 AND AS FOLLOWS:

- a. TEST SHALL BE AS SPECIFIED IN TABLE II HEREIN.

#### 4.5 PERIODIC INSPECTION:

##### 4.5.1 GROUP B INSPECTION:

GROUP B INSPECTION SHALL BE IAW MIL-PRF-38534.

##### 4.5.2 GROUP C INSPECTION:

GROUP C INSPECTION SHALL BE IAW MIL-PRF-38534 AND AS FOLLOWS:

- a. END-POINT ELECTRICAL PARAMETERS SHALL BE AS SPECIFIED IN TABLE II HEREIN.
- b. STEADY-STATE LIFE TEST CONDITIONS, METHOD 1005 OF MIL-STD-883.
  1. TEST CONDITION USING THE CIRCUIT SHOWN ON FIGURE 4.
  2.  $T_c = +125^\circ\text{C}$  MINIMUM.
  3. TEST DURATION, 1000 HOURS, EXCEPT AS PERMITTED BY METHOD 1005 OF MIL-STD-883.

##### 4.5.3 GROUP D INSPECTION:

GROUP D INSPECTION SHALL BE IAW MIL-PRF-38534.

#### 5.0 PACKAGING:

##### 5.1 PREPARATION FOR DELIVERY:

THE PARTS SHALL BE SUITABLY PROTECTED FROM ELECTROSTATIC DAMAGE IAW MIL-PRF-38534.

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	DRAFTING CHECK	DATE					
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	QUALITY ASSURANCE	DATE					
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**6.0 NOTES:****6.1 INTENDED USE:**

MICROCIRCUITS CONFORMING TO THIS DRAWING ARE INTENDED FOR USE WHEN MILITARY SPECIFICATIONS FOR CLASS H DEVICES DO NOT EXIST OR CLASS H QUALIFIED MILITARY DEVICES THAT WILL PERFORM THE REQUIRED FUNCTION ARE NOT AVAILABLE OF ORIGINAL EQUIPMENT MANUFACTURER APPLICATION. WHEN A CLASS H MILITARY SPECIFICATION EXISTS AND THE PRODUCT COVERED BY THE DRAWING HAS BEEN QUALIFIED FOR LISTING ON QML-38534, THE DEVICE SPECIFIED HEREIN WILL BE INACTIVATED AND WILL NOT BE USED FOR NEW DESIGN. THE QML-38534 CLASS H PRODUCT SHALL BE THE PREFERRED ITEM FOR ALL APPLICATIONS.

**6.2 APPLICATION(S):**

N/A

**6.3 ELECTROSTATIC DISCHARGE SENSITIVITY (ESDS):**

ELECTROSTATIC DISCHARGE CONTROL PROGRAM FOR PROTECTION OF ELECTRICAL AND ELECTRONIC PARTS. ASSEMBLIES AND EQUIPMENT SHALL BE IAW MIL-STD-1686, CLASS I AND MIL-HDBK-263.

**6.4 APPROVED SOURCES OF SUPPLY:**

IDENTIFICATION OF THE APPROVED SOURCE(S) OF SUPPLY HEREIN IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM(S).

**6.4.1 APPROVAL CRITERIA:**

THE FOLLOWING CRITERIA SHALL BE COMPLIED WITH TO BECOME AN APPROVED SUPPLIER TO THIS DRAWING.

- a. LISTED IN QML-38534 FOR A DEVICE IN A SIMILAR MICROCIRCUIT GROUP.
- b. PRODUCT ASSURANCE PROGRAM AND LINE CERTIFICATION REQUIREMENTS PROCEDURES CONFORM TO MIL-PRF-38534, CLASS H AND AS STATED HEREIN.

**6.4.2 APPROVED SUPPLIERS:**

ADDITIONAL SOURCES WILL BE ADDED AS THEY BECOME AVAILABLE. THE SUPPLIERS LISTED HEREIN HAVE AGREED TO THIS DRAWING.

VENDOR CAGE CODE	VENDOR PART NUMBER	SCREENING
51651	MSK 1450	INDUSTRIAL GRADE
51651	MSK 1450H	MIL-PRF-38534

VENDOR CAGE CODE	VENDOR NAME AND ADDRESS
51651	M.S. KENNEDY CORPORATION 4707 DEY ROAD LIVERPOOL, NY 13088

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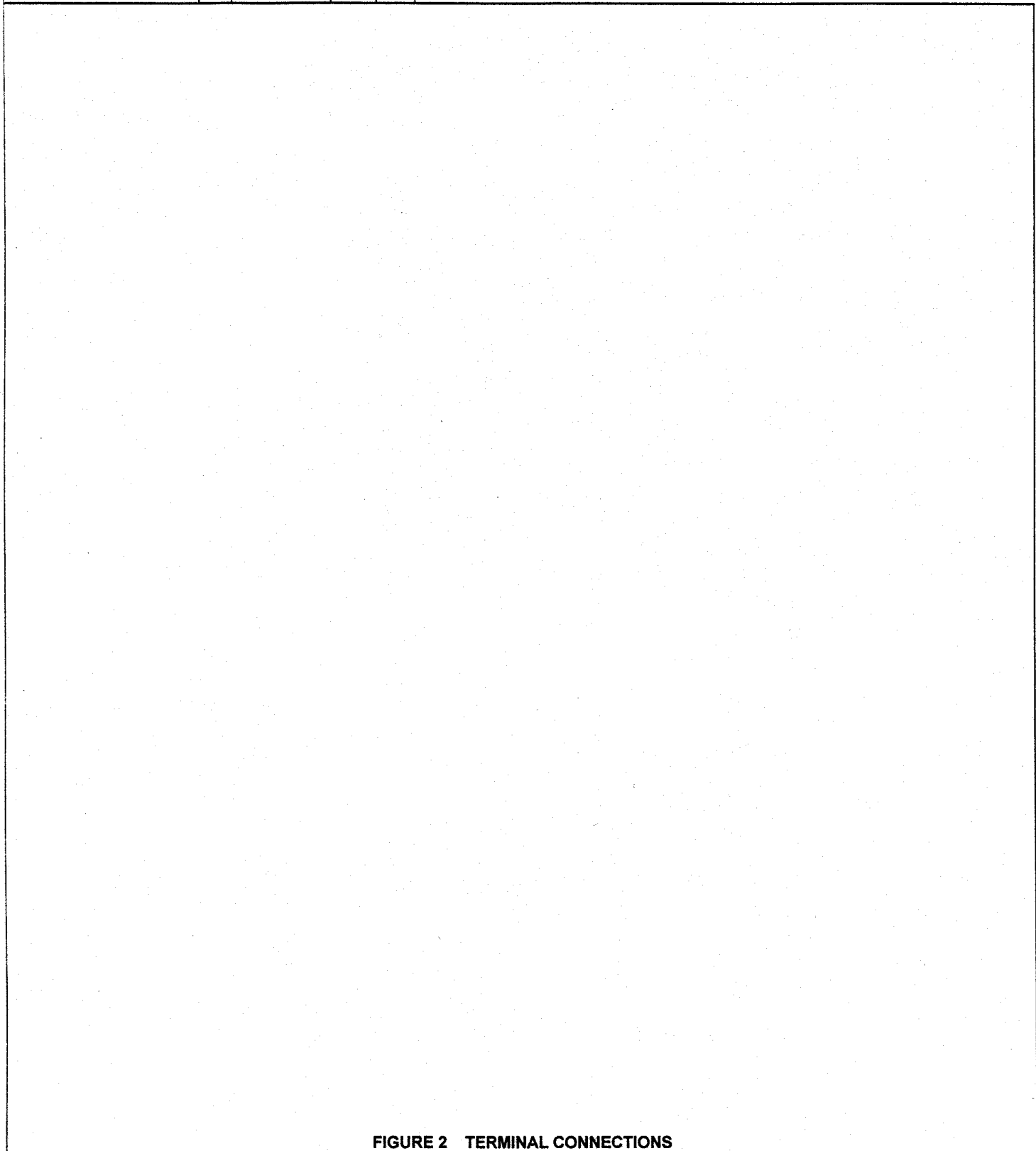


FIGURE 2 TERMINAL CONNECTIONS

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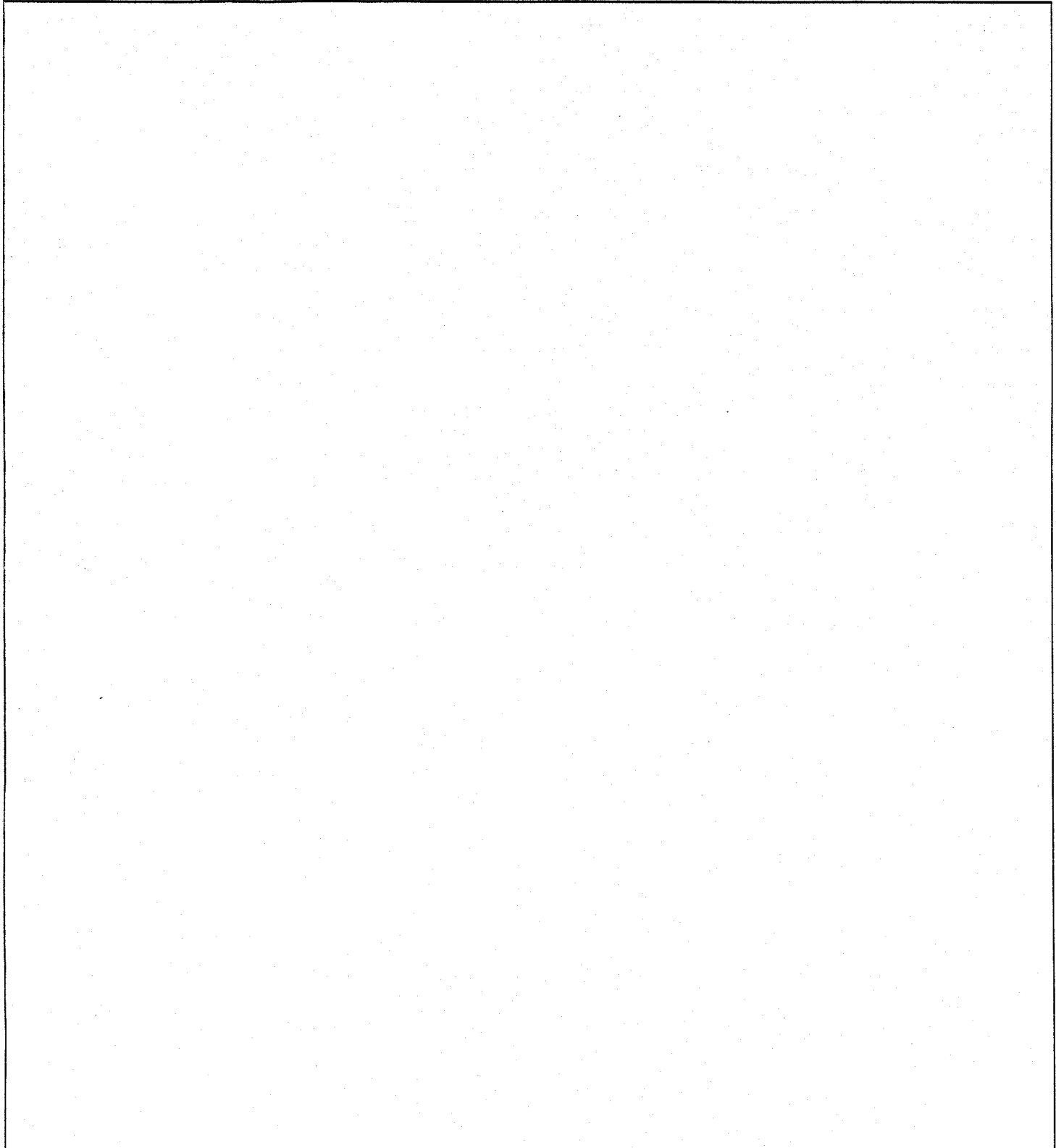
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FIGURE 3 ELECTRICAL SCHEMATIC (FOR REFERENCE ONLY)

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**FIGURE 4 BURN-IN SCHEMATIC**

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