

MSK DWG. NO.

REV.

SHEET

SCALE

SIZE

01 OF 12

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8218.1 Rev -

## REVISIONS

REV.	ECO NO.	APPROVED	DATE

# MSK

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DO NOT SCALE DRAWING	APPROVALS		FSCM NO.	MSK	M.S. KENNEDY CORPORATION LIVERPOOL, NEW YORK 13088	DOCUMENT CONTROL STAMP	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE INCHES TOLERANCES ARE	DRAFTER	DATE	5	TITLE	CLASS K SOURCE CONTROL DRAWING		
FRACTIONS    DECIMALS    ANGLE ±                ±                ±	DRAFTING CHECK	DATE	1				
MATERIAL N/A	ENGINEERING CHECK	DATE	5				
FINISH N/A	QUALITY ASSURANCE	DATE	1				
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**1.0 SCOPE:**

**1.1 SCOPE:**

THIS DRAWING DESCRIBES DEVICE REQUIREMENTS FOR CLASS K 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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	DRAFTING CHECK	DATE					
MATERIAL N/A	ENGINEERING CHECK	DATE					
FINISH N/A	QUALITY ASSURANCE	DATE					
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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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FRACTIONS    DECIMALS    ANGLE ±                *                ±	DRAFTING CHECK	DATE	1				
MATERIAL	ENGINEERING CHECK	DATE	6				
N/A			5				
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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 AND SERIAL NUMBER
- 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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FRACTIONS    DECIMALS    ANGLE ± -            ± -            ± -	DRAFTING CHECK	DATE					
MATERIAL N/A	ENGINEERING CHECK	DATE					
FINISH N/A	QUALITY ASSURANCE	DATE					
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**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 K.

**4.2 ELEMENT EVALUATION:**

ELEMENT EVALUATION SHALL BE IAW MIL-PRF-38534 CLASS K.

**4.3 SCREENING:**

SCREENING SHALL BE IAW MIL-PRF-38534 CLASS K 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							
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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 K AND AS SPECIFIED HEREIN.

**4.4.1 GROUP A INSPECTION:**

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

- a. TESTS 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.  $T_c = +125=C$  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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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE INCHES TOLERANCES ARE	DRAFTER	DATE	<b>5</b> <b>1</b> <b>6</b> <b>5</b> <b>1</b>				
FRACTIONS    DECIMALS    ANGLE ± -            ± -            ± -	DRAFTING CHECK	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 K DEVICES DO NOT EXIST OR CLASS K QUALIFIED MILITARY DEVICES THAT WILL PERFORM THE REQUIRED FUNCTION ARE NOT AVAILABLE OF ORIGINAL EQUIPMENT MANUFACTURER APPLICATION. WHEN A CLASS K 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 K PRODUCT SHALL BE THE PREFERRED ITEM FOR ALL APPLICATIONS.

**6.2 APPLICATION(S):**

**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 K 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		INDUSTRIAL GRADE
51651		MIL-PRF-38534 CLASS K

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

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TOLERANCES ARE	DRAFTING CHECK	DATE			<b>CLASS K</b>	
FRACTIONS DECIMALS ANGLE ± - ± - ± -	ENGINEERING CHECK	DATE			<b>SOURCE CONTROL DRAWING</b>	
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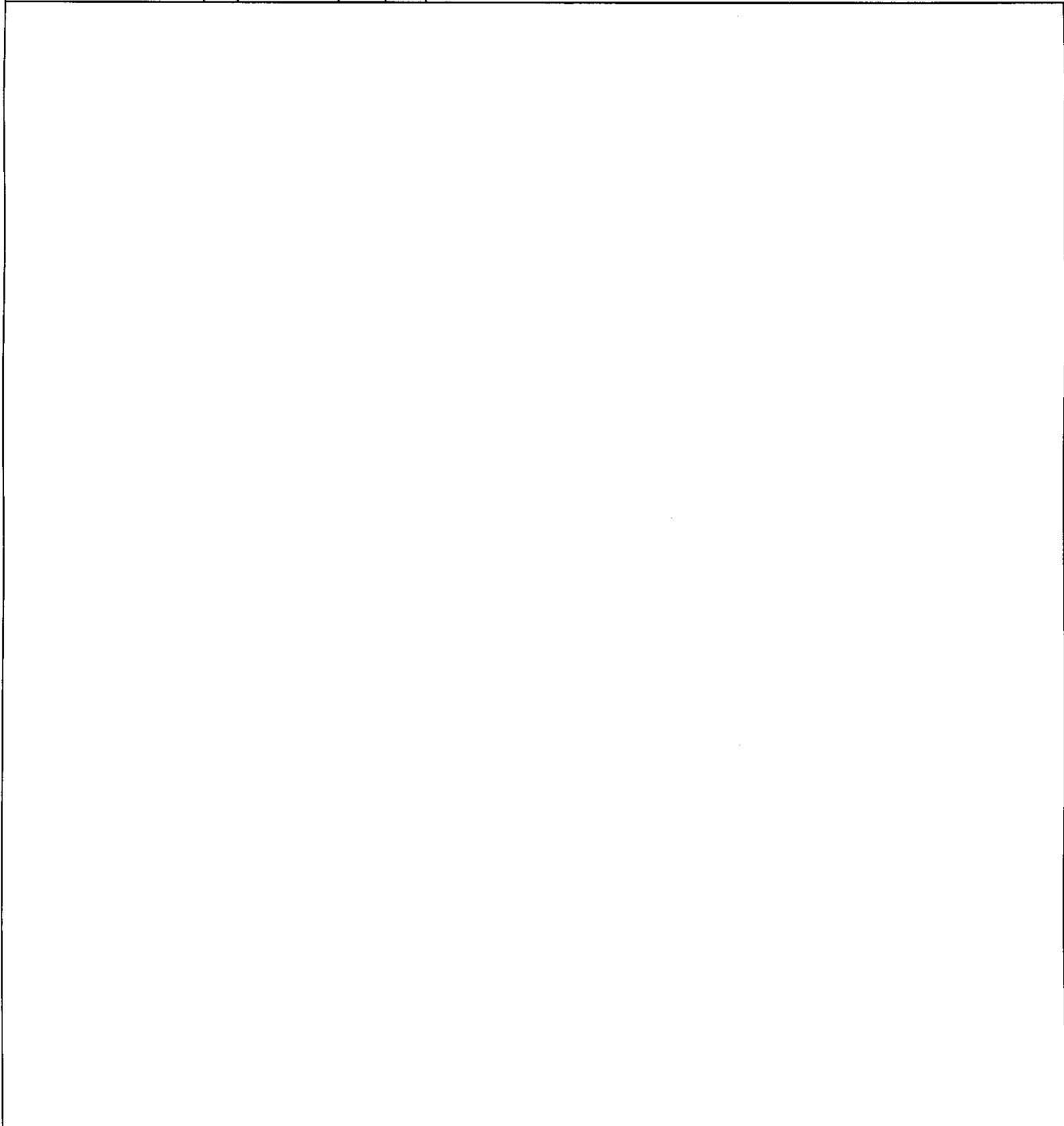
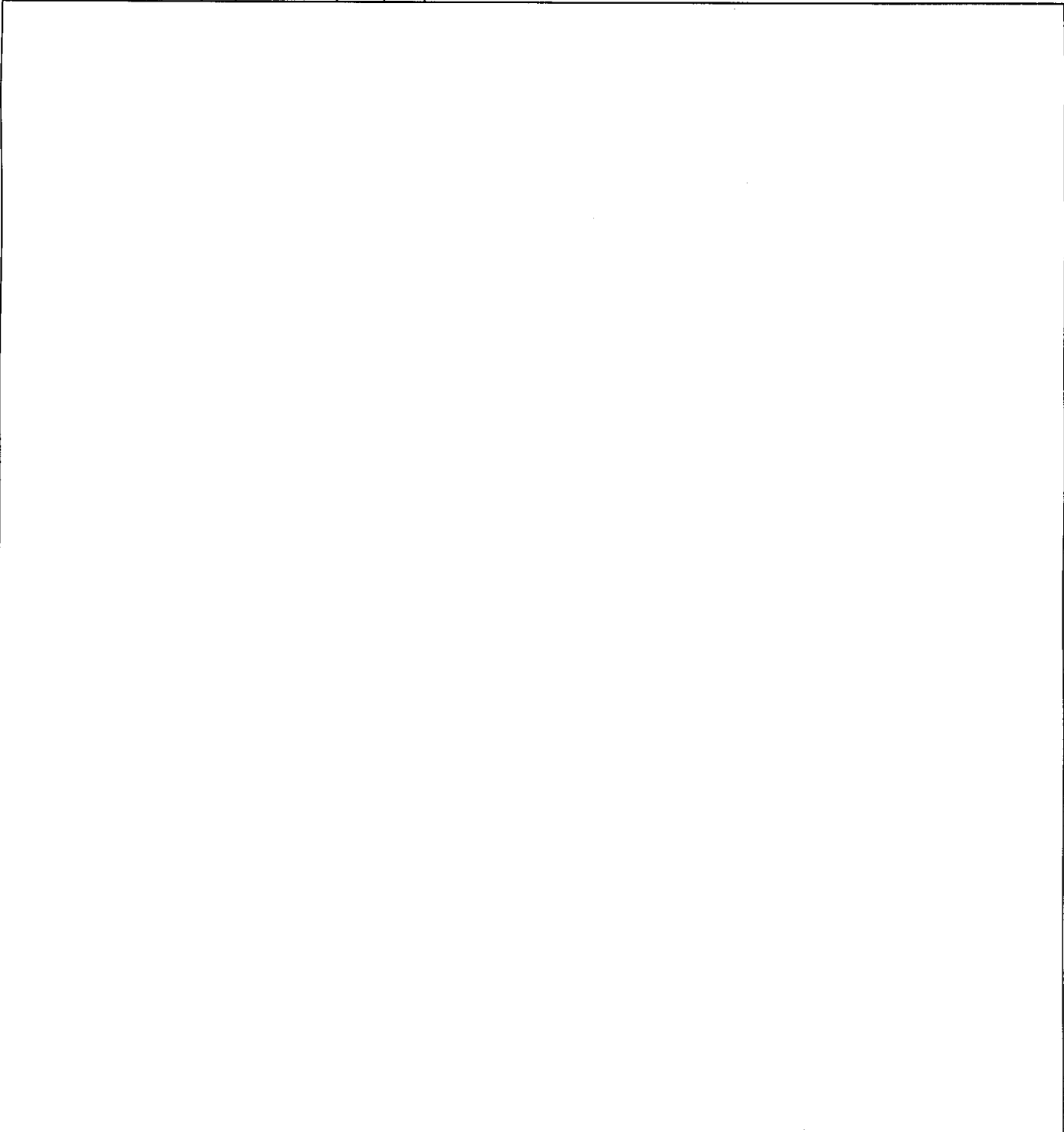



FIGURE 1 CASE OUTLINE

DO NOT SCALE DRAWING	APPROVALS		FSCM NO.	<b>MSK</b>	M.S. KENNEDY CORPORATION LIVERPOOL, NEW YORK 13088	DOCUMENT CONTROL STAMP
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MATERIAL N/A	ENGINEERING CHECK	DATE				
FINISH N/A	QUALITY ASSURANCE	DATE		MSK DWG. NO.	REV.	

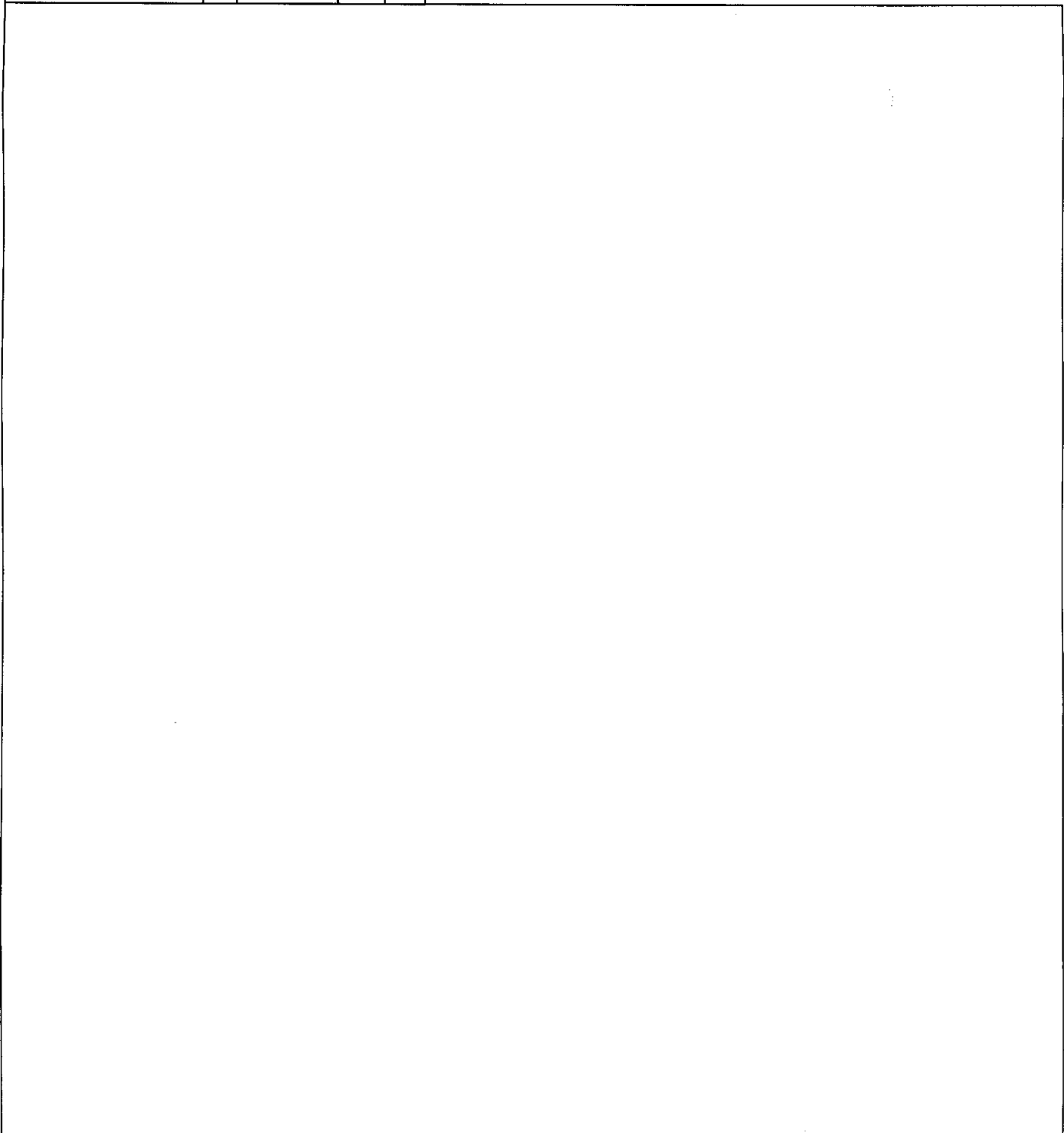
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**FIGURE 2 TERMINAL CONNECTIONS**

DO NOT SCALE DRAWING	APPROVALS		FSCM NO.	 <b>M.S. KENNEDY CORPORATION</b> <b>LIVERPOOL, NEW YORK 13088</b>	DOCUMENT CONTROL STAMP		
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FINISH N/A	QUALITY ASSURANCE	DATE					
				MSK DWG. NO.	REV.	SHEET 10 OF 12	DEPARTMENT / COPY NO.

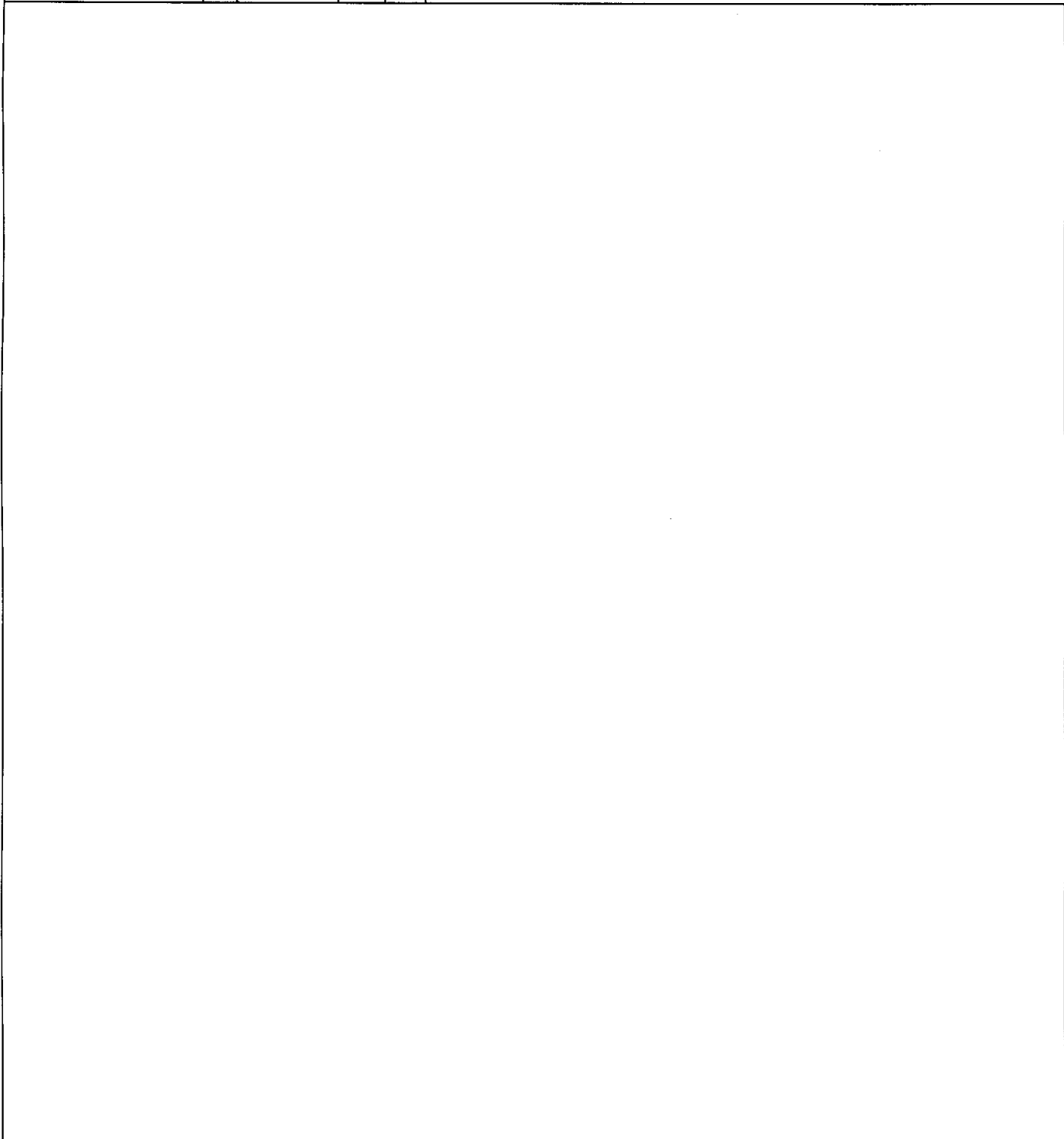
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**FIGURE 3 ELECTRICAL SCHEMATIC (FOR REFERENCE ONLY)**

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**FIGURE 4 BURN-IN SCHEMATIC**

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FRACTIONS    DECIMALS    ANGLE * -                    * -                    * -	DRAFTING CHECK	DATE		CLASS K SOURCE CONTROL DRAWING		
MATERIAL N/A	ENGINEERING CHECK	DATE				
FINISH N/A	QUALITY ASSURANCE	DATE		MSK DWG. NO.	REV.	SHEET 12 OF 12