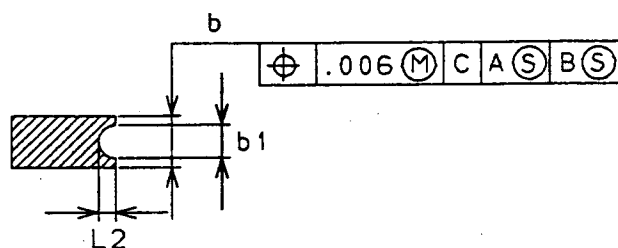
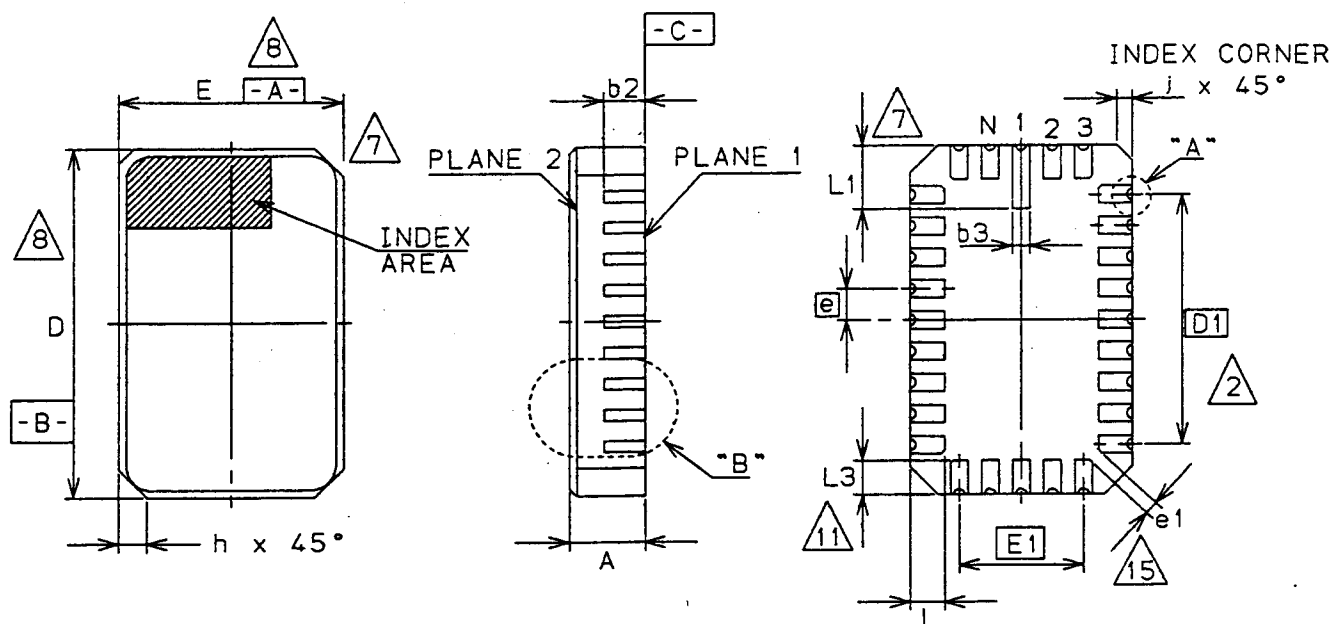
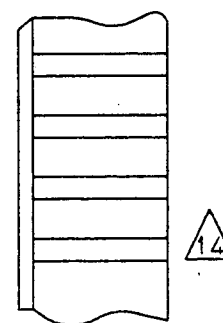


INCH



DETAIL A



OPTION DETAIL B

JEDEC
SOLID STATE PRODUCT
OUTLINES

THIS REGISTERED OUTLINE HAS BEEN PREPARED BY THE JEDEC JC-11
COMMITTEE AND REFLECTS A PRODUCT WITH ANTICIPATED USAGE IN
THE ELECTRONICS INDUSTRY; CHANGES ARE LIKELY TO OCCUR.

TITLE: .050 INCH PITCH
LEADLESS RECTANGULAR
CHIP CARRIER FAMILY

JESD-30 DESIGNATOR
R-CQCC-N

ISSUE
C

DATE
FEB
1995

MO-041

SHEET
1 OF 4

1. ALL DIMENSIONS AND TOLERANCES CONFORM TO ANSI Y14.5M-1982

2. UNLESS OTHERWISE SPECIFIED, A MINIMUM CLEARANCE OF .015 INCHES SHALL BE MAINTAINED BETWEEN ALL METALIZED FEATURES (e.g. LID, CASTELLATIONS, TERMINALS, THERMAL PADS, etc.)

3. PLANE 1 IS THE HEAT DISSIPATING SURFACE. METALIZATION OTHER THAN FOR TERMINALS IS OPTIONAL.

4. A UNIQUE FEATURE FOR NO. 1 TERMINAL AND PLANE 1 IDENTIFICATION AND OPTICAL ORIENTATION SHALL BE WITHIN THE AREA DEFINED BY L_1 AND b_3 ON PLANE 1.

5. "N" INDICATES THE TOTAL NUMBER OF TERMINAL POSITIONS. IF THE NUMBER OF TERMINALS ON THE SHORT SIDE OF THE PACKAGE IS ODD, TERMINAL 1 LIES ON THE CENTERLINE OF THE PACKAGE BODY.

6. TERMINAL PAD METALIZATION EXTENDS TO THE EDGES OF THE PACKAGE BODY.

7. THIS CORNER OF THE INDEX END MAY OPTIONALLY BE CONFIGURED IDENTICAL TO THE INDEX CORNER.

8. THE COVER SHALL NOT EXTEND BEYOND THE EDGES OF THE BODY.

9. ALL DIMENSIONS ARE IN INCHES.

10. CHIP CARRIER CORNER SHAPE (SQUARE, NOTCH, RADIUS, etc.) MAY VARY AT THE MANUFACTURER'S OPTION.

11. THE L_3 DIMENSION IN 2 PLACES, APPLIES ONLY TO THE 4, 6, AND 18 TERMINAL VERSIONS. OTHER VERSIONS USE DIMENSION L IN 4 PLACES.

12. THE INDEX CORNER ON THE 4 (BA) AND 6 (BB) TERMINAL VARIATIONS IS INDICATED BY A METAL STRIPE IN THE CORNER RADIUS.

13. THE 4 (BA) AND 6 (BB) TERMINAL VARIATIONS HAVE TERMINALS ON THE ("E") ENDS OF THE PACKAGE ONLY. FOR THESE VARIATIONS ONLY, THE JESD-30 DESIGNATOR IS R-CDCC-N.

14. TERMINAL METALIZATION ON PLANE 2 IS OPTIONAL. IF PRESENT, IT MUST BE CONNECTED TO TERMINAL METALIZATION ON PLANE 1.

15. e_1 IS THE MINIMUM CLEARANCE THAT MUST BE MAINTAINED BETWEEN CORNER TERMINALS.

16. PACKAGES WITHOUT CASTELLATIONS ARE OPTIONAL. IF CASTELLATIONS ARE PRESENT, THEY ARE CONNECTED TO PLANE ONE TERMINALS.

| | | | | | |
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| JEDEC SOLID STATE PRODUCT OUTLINES | TITLE: .050 INCH PITCH LEADLESS RECTANGULAR CHIP CARRIER FAMILY | ISSUE C | DATE FEB 1995 | MO-041 | SHEET 2 OF 4 |
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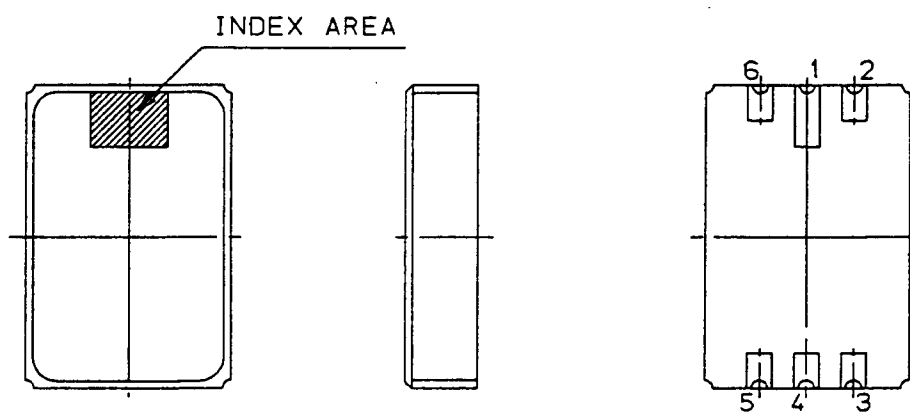
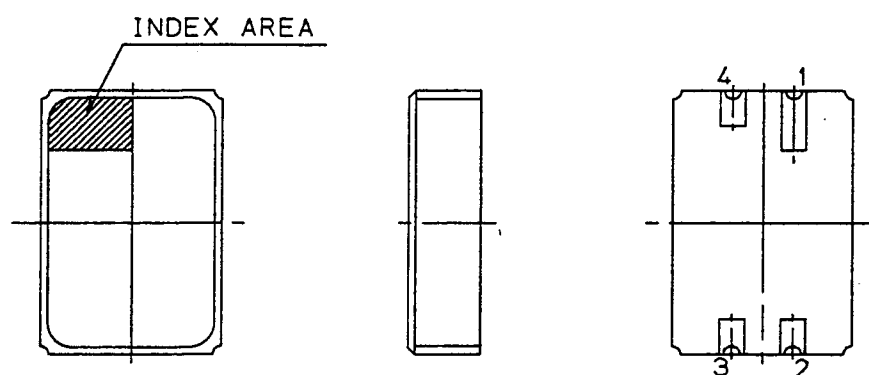
| SYM B O L | VARIATIONS | | | | | | | | | | All dimensions in inches | |
|--------------|------------|------|----------|----------|------|----------|----------|------|----------|----------|--------------------------|----------|
| | AA | | NO TE | AB | | NO TE | AC | | NO TE | AD | | NO TE |
| | MIN. | MAX. | | MIN. | MAX. | | MIN. | MAX. | | MIN. | MAX. | |
| A | .060 | .120 | | .060 | .120 | | .060 | .120 | | .060 | .120 | |
| b | .020 | .028 | | .020 | .028 | | .022 | .028 | | .022 | .028 | |
| b1 | .006 | .022 | 16 | .006 | .022 | 16 | .006 | .022 | 16 | .006 | .022 | 16 |
| b2 | .030 | --- | | .030 | --- | | .030 | --- | | .030 | --- | |
| b3 | .020 | .041 | 4 | .020 | .041 | 4 | .022 | .041 | 4 | .022 | .041 | 4 |
| D | .540 | .560 | 6 | .540 | .560 | 6 | .417 | .440 | 6 | .417 | .440 | 6 |
| D1 | .400 BSC | | | .400 BSC | | | .200 BSC | | | .250 BSC | | |
| E | .342 | .358 | 6 | .442 | .458 | 6 | .280 | .305 | 6 | .280 | .305 | 6 |
| E1 | .200 BSC | | | .300 BSC | | | .150 BSC | | | .150 BSC | | |
| e | .050 BSC | | | .050 BSC | | | .050 BSC | | | .050 BSC | | |
| e1 | .015 | --- | 2.15 | .015 | --- | 2.15 | .015 | --- | 2.15 | .015 | --- | 2.15 |
| h | .035 | .045 | | .035 | .045 | | .035 | .045 | | .035 | .045 | |
| j | .010 | .025 | | .010 | .025 | | .010 | .025 | | .010 | .025 | |
| L | .040 | .055 | | .040 | .055 | | .045 | .055 | | .045 | .055 | |
| L1 | .040 | .095 | 4 | .040 | .095 | 4 | .040 | .095 | 4 | .040 | .095 | 4 |
| L2 | .003 | .015 | | .003 | .015 | | .003 | .015 | | .003 | .015 | |
| L3 | --- | --- | 11 | --- | --- | 11 | .045 | .090 | 11 | --- | --- | 11 |
| N | 28 | | 5 | 32 | | 5 | 18 | | 5 | 20 | | 5 |
| ND | 9 | | | 9 | | | 5 | | | 6 | | |
| NE | 5 | | | 7 | | | 4 | | | 4 | | |
| NOTE | 1.9 | | | 1.9 | | | 1.9 | | | 1.9 | | |
| REF. | | | | | | | | | | | | |
| ISSUE | | | | | | | | | | | | |

| SYM B O L | VARIATIONS | | | | | | | | | | All dimensions in inches | |
|--------------|------------|------|----------|----------|------|----------|----------|------|----------|----------|--------------------------|----------|
| | AE | | NO TE | AF | | NO TE | BA | | NO TE | BB | | NO TE |
| | MIN. | MAX. | | MIN. | MAX. | | MIN. | MAX. | | MIN. | MAX. | |
| A | .060 | .120 | | .060 | .120 | | .060 | .120 | | .060 | .120 | |
| b | .022 | .028 | | .022 | .028 | | .022 | .028 | | .022 | .028 | |
| b1 | .006 | .022 | 16 | .006 | .022 | 16 | .006 | .022 | 16 | .006 | .022 | 16 |
| b2 | .030 | --- | | .030 | --- | | .030 | --- | | .030 | --- | |
| b3 | .022 | .041 | 4 | .022 | .041 | 4 | .022 | .041 | 4 | .022 | .041 | 4 |
| D | .480 | .500 | 6 | .480 | .506 | 6 | .215 | .225 | 6 | .240 | .250 | 6 |
| D1 | .300 BSC | | | .300 BSC | | | --- | | | --- | | |
| E | .280 | .305 | 6 | .280 | .305 | 6 | .145 | .155 | 6 | .165 | .175 | 6 |
| E1 | .150 BSC | | | .200 BSC | | | .050 BSC | | | .100 BSC | | |
| e | .050 BSC | | | .050 BSC | | | .050 BSC | | | .050 BSC | | |
| e1 | .015 | --- | 2.15 | .015 | --- | 2.15 | --- | --- | | --- | --- | |
| h | .035 | .045 | | .035 | .045 | | --- | --- | 10 | --- | --- | 10 |
| j | .010 | .025 | | .010 | .025 | | --- | --- | 12 | --- | --- | 12 |
| L | .045 | .055 | | .045 | .055 | | .040 | .055 | | .040 | .055 | |
| L1 | .045 | .095 | 4 | .045 | .095 | 4 | .045 | .095 | 4 | .045 | .095 | 4 |
| L2 | .003 | .015 | | .003 | .015 | | .003 | .015 | | .003 | .015 | |
| L3 | --- | --- | 11 | --- | --- | 11 | .045 | .090 | 11 | .045 | .090 | 11 |
| N | 22 | | 5 | 24 | | 5 | 4 | | | 6 | | |
| ND | 7 | | | 7 | | | 0 | | | 0 | | |
| NE | 4 | | | 5 | | | 2 | | | 3 | | |
| NOTE | 1.9 | | | 1.9 | | | 1.9,13 | | | 1.9,13 | | |
| REF. | | | | | | | 10-350 | | | 10-350 | | |
| ISSUE | | | | | | | | | | | | |

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| JEDEC SOLID STATE PRODUCT OUTLINES | | TITLE: .050 INCH PITCH LEADLESS RECTANGULAR CHIP CARRIER FAMILY | | | ISSUE C | DATE FEB 1995 | MO-041 | SHEET 3 OF 4 |
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SUMMARY TABLE

| VARIATIONS | D | E | N | JESD-30 DESIGNATOR |
|------------|------|------|----|--------------------|
| AA | .550 | .350 | 28 | R-CQCC-N |
| AB | .550 | .450 | 32 | R-CQCC-N |
| AC | .428 | .292 | 18 | R-CQCC-N |
| AD | .428 | .292 | 20 | R-CQCC-N |
| AE | .490 | .292 | 22 | R-CQCC-N |
| AF | .493 | .292 | 24 | R-CQCC-N |
| BA | .220 | .150 | 4 | R-CDCC-N |
| BB | .245 | .170 | 6 | R-CDCC-N |



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| JEDEC SOLID STATE PRODUCT OUTLINES | TITLE: .050 INCH PITCH LEADLESS RECTANGULAR CHIP CARRIER FAMILY | ISSUE C | DATE FEB 1995 | MO-041 | SHEET 4 OF 4 |
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