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24AA16SC/24LC16SC

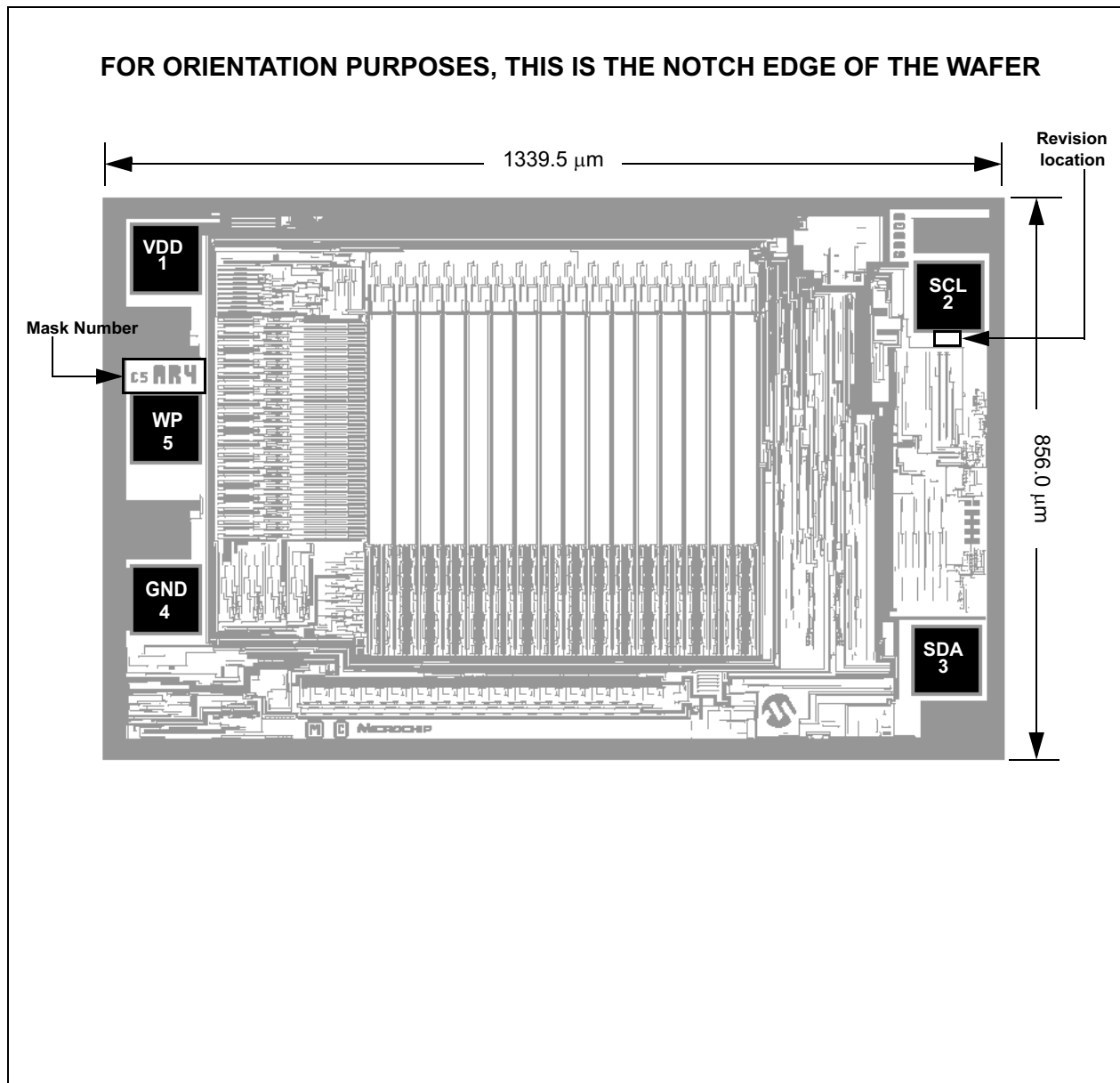
Serial EEPROM (C5AR4) Die Specification Sheet

This die specification sheet supports **24AA16SC** and **24LC16SC** Serial EEPROM devices, manufactured from Microchip mask set **C5AR4 (Rev. G)** on an 8-inch wafer. The bond-out diagram (Figure 1) shows the pad orientation as well as the mask number and revision locations. The actual die size is $1339.5\ \mu\text{m} \times 856.0\ \mu\text{m}$, after sawing.

Table 1 indicates pad orientation with all coordinates relative to an origin at the center of the die. All dimensions are measured in μm (microns).

Table 2 indicates die mechanical specifications. All dimensions are shown in μm (microns) and mils. The mils values were mathematically converted using the information in Note 5. The bond pad opening is approximately $90\ \mu\text{m} \times 90\ \mu\text{m}$ (3.54 x 3.54 mils).

FIGURE 1: BOND-OUT DIAGRAM



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TABLE 1: PAD ORIENTATION FOR C5AR4 MASK

| Pad | Pad Name | Bottom Left (μm) | | Top Right (μm) | |
|-----|-------------|------------------|---------|----------------|---------|
| | | X | Y | X | Y |
| 1 | VDD | -596.30 | 267.05 | -506.30 | 357.05 |
| 2 | SCL | 517.30 | 213.75 | 607.30 | 303.75 |
| 3 | SDA | 514.40 | -302.55 | 604.40 | -212.55 |
| 4 | GND | -596.30 | -216.35 | -506.30 | -126.35 |
| 5 | WP (Note 1) | -596.30 | 26.55 | -506.30 | 116.55 |

Note 1: A smart pull-down is used on the Write Protect (WP) signal. No connection is necessary.

TABLE 2: DIE MECHANICAL DIMENSIONS FOR C5AR4 MASK

| Specification | Min | Typ | Max | Unit | Comments |
|---|--------------|-------------------------------|-------------|-----------|---|
| Bond pad opening: | — — | 3.54 x 3.54 90 x 90 | — — | mil μm | Note 1 |
| Bond pad spacing: | N.A. N.A. | — — | — — | mil μm | Note 2 |
| Die thickness: | 10 254 | 11 279.4 | 12 304.8 | mil μm | |
| Custom die thickness: | 8 203.2 | — — | 24 609.6 | mil μm | Contact Microchip Factory Marketing Note 3 |
| Die thickness tolerance: (Standard and Custom) | — — | — — | ±1 ±25.4 | mil μm | |
| Die Size: | | | | | Note 4 |
| Die size X*Y before saw: | — — | 55.2 x 36.2 1403.0 x 919.5 | — — | mil μm | |
| Die size X*Y after saw: | — — | 52.7 x 33.7 1339.5 x 856.0 | — — | mil μm | |

Note 1: The bond pad size is that of the passivation opening. The passivation overlaps the bond pad metal by at least 5 μm. Some of the VSS and VDD pad openings are larger for double bonding option.

2: Bond pads are at least 2.4 mil apart as measured from the edges of passivation openings.

3: Custom die thickness is available (contact the Regional Sales Office). As the die thickness decreases, susceptibility to cracking increases. It is recommended that the die be as thick as the application will allow (up to the standard thickness).

4: Step size measurements are equivalent to die size measurements before saw.

5: The conversion rate is 25.4 μm / mil.

Note: Extreme care is urged in the handling and assembly of die products since they are susceptible to damage from electro-static discharge.

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DIE DIFFERENCES TO PACKAGED DEVICES

The following lists the differences in the operation of the Die product to the operation of packaged devices, as detailed in the 24AA16/24LC16B Data Sheet (DS21703B):

None

Differences in the electrical specifications between the Data Sheet and the Die product:

None

DIE OPTIONS

The following lists the options that are available on Die products.

1. QTP (factory programmable) devices are available.

PRODUCT IDENTIFICATION SYSTEM

To order or obtain information, e.g., on pricing or delivery, refer to the factory or the listed sales office.

| <u>PART NO.</u> | <u>X</u> | <u>/XX</u> | <u>XX</u> |
|--------------------|---|------------|--------------|
| Device | Temperature Range | Package | Process Rev. |
| Device: | 24AA16SC: VDD range of 1.8V to 5.5V * | | |
| | 24LC16SC: VDD range of 2.5V to 5.5V | | |
| Temperature Range: | - = 0°C to +70°C | | |
| | I = -40°C to +85°C ** | | |
| | * 24AA16SC only available at commercial temperatures. | | |
| | ** Cold temperatures not tested, but ensured by characterization from package-level testing of 24LC16B devices. | | |
| Package: | S = Die in waffle pack | | |
| | W = Wafer | | |
| | WF = Wafer on Frame | | |
| Process Rev: | 15K | | |

Examples:

- a) **24AA16SC/S15K:** Commercial Temp., Die in waffle pack.
- b) **24AA16SC/W15K:** Commercial Temp., Wafer package.
- c) **24AA16SC/WF15K:** Commercial Temp., Wafer on Frame package.
- d) **24LC16SC/S15K:** Commercial Temp., Die in waffle pack.
- e) **24LC16SC-I/W15K:** Industrial Temperature, Wafer package.
- f) **24LC16SC-I/WF15K:** Industrial Temperature, Wafer on Frame package.

REVISION HISTORY

Revision A (10/02):

The following items were added to the Die Specification Sheet:

Initial Release of **C5AR4 (Rev. G)** Die Specification Sheet

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NOTES:

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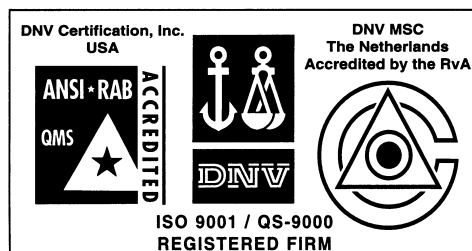
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