

**GTI**

**Small-sized M2M**

**UICC**

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## *GTI Small-sized M2M UICC*



|                           |   |
|---------------------------|---|
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## Document History

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## Table of Contents

|       |   |    |
|-------|---|----|
| 1     | Executive Summary .....                             | 5  |
| 2     | Abbreviations .....                                 | 6  |
| 3     | References.....                                     | 7  |
| 4     | Physical Characteristics .....                      | 8  |
| 4.1   | Contacts.....                                       | 8  |
| 4.2   | Dimensions of the Small-Sized M2M UICC.....         | 8  |
| 4.2.1 | Orientation mark for the bottom of the package..... | 10 |
| 4.2.2 | Orientation mark for the top of the package .....   | 10 |

# 1 Executive Summary

Editor's note: The form factors for the M2M UICC are specified in ETSI TS 102 671. The physical size of the M2M UICC is 6mm\*5mm.

With the development of IoT recently, more and more devices wearable devices and modules are getting smaller, for example, some NB-IoT modules 's size is only 16x18mm, but the standard existing M2M UICC is 6mm\*5mm, which is too large for the current IoT devices. To address this, smaller M2M UICCs are need.

Considering the balancing of the cost and M2M UICC size, with the agreement of chip manufacturers, module manufacturers and card manufacturers, this document defines a new form factor of M2M UICC to meet the IoT development.

## 2 Abbreviations

| <b>Abbreviation</b> | <b>Explanation</b>                 |
|---------------------|------------------------------------|
| M2M                 | Machine to Machine (Communication) |
| UICC                | Universal Integrated Circuit Card  |

### 3 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

[1] ETSI TS 102 221: "Smart Cards; UICC-Terminal interface; Physical and logical characteristics".

## 4 Physical Characteristics

### 4.1 Contacts

The logical definition of the contacts C1 to C8 shall be define in ETSI TS 102 221[1].

### 4.2 Dimensions of the Small-Sized M2M UICC

The Small-sized M2M UICC shall have the following dimensions outlined in figure 4.1.

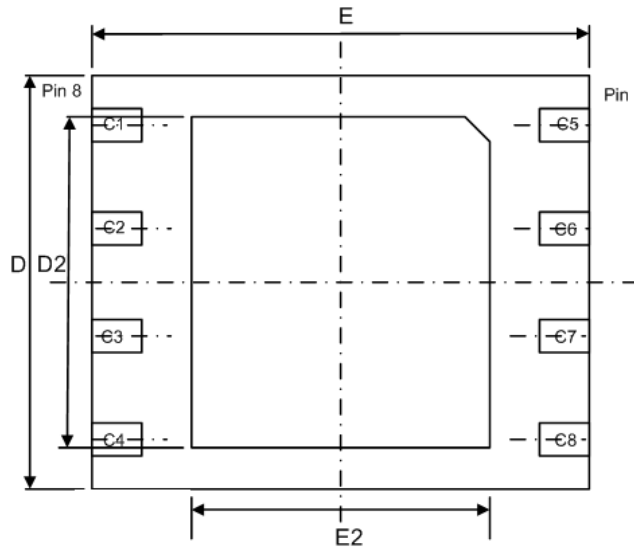


Figure 4.1 Small-sized M2M UICC bottom view

The inner tips of the outer contacting pads shall be rectangular.

Table 4.1 Package pin to UICC contact mapping

| Package pin | UICC contact | Package pin | UICC contact |
|-------------|--------------|-------------|--------------|
| 1           | C5           | 8           | C1           |
| 2           | C6           | 7           | C2           |
| 3           | C7           | 6           | C3           |
| 4           | C8           | 5           | C4           |

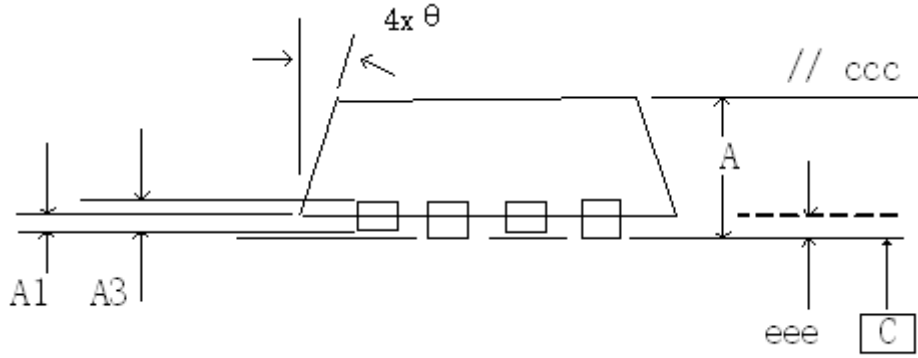
Table 4.2 Dimensions of the Small-sized M2M UICC

| Parameter | Description | Minimum (mm) | Normal (mm) | Maximum (mm) |
|-----------|-------------|--------------|-------------|--------------|
|-----------|-------------|--------------|-------------|--------------|

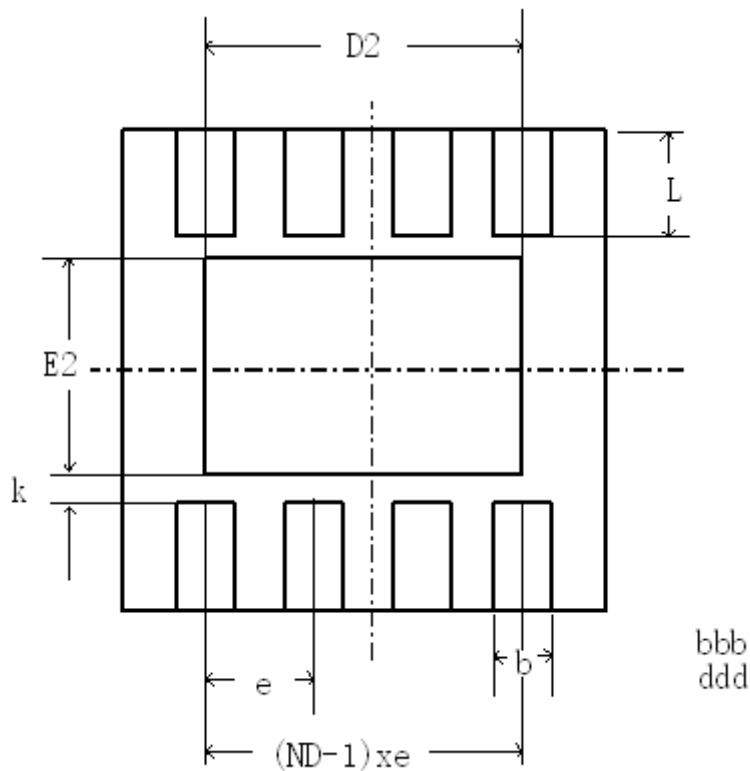


|          |   |         |      |      |
|----------|---|---------|------|------|
| E        | The package body dimension in the horizontal direction.   | 2.0     |      |      |
| D        | The package body dimension in the vertical direction.   | 2.0     |      |      |
| L        | The length of the outer contacting pad as measured from the edge of the package.  | 0.2     | 0.3  | 0.45 |
| b        | The width of the outer metallised contacting pads (including lead finish) exposed at the bottom surface of the package.   | 0.18    | 0.25 | 0.3  |
| E2       | The heat sink (outer pads) dimension in the horizontal direction.   | min 0.6 |      |      |
| D2       | The heat sink (outer pads) dimension in the vertical direction.   | min 1.2 |      |      |
| k        | The distance between any outer contacting pad and the heat sink.  | min 0.2 |      |      |
| e        | The centerline-to-centerline spacing of the inner and outer contacting pads.  | 0.5     |      |      |
| bbb      | The tolerance that controls the position of the contact pattern with respect to the horizontal package centerline. The center of the tolerance zone for each contact is defined by basic dimension e as related to the horizontal package centerline. | 0.1     |      |      |
| ddd      | The tolerance that controls the position of the contacts to each other. The centers of the profile zones are defined by basic dimension e.  | 0.05    |      |      |
| A        | The thickness, referring to figure 4.2.   | max 1.0 |      |      |
| A1       | referring to figure 4.2   | 0       | 0.02 | 0.05 |
| A3       | referring to figure 4.2   | 0.20    |      |      |
| (ND-1)*e | referring to figure 4.2   | 1.5     |      |      |
| aaa      | referring to figure 4.2   | 0.15    |      |      |
| ccc      | referring to figure 4.2   | 0.1     |      |      |
| eee      | referring to figure 4.2   | 0.08    |      |      |
| $\theta$ | referring to figure 4.2   | 0°      | -    | 14°  |

Figure 4.2



(1) Side View



(2) Bottom View

Figure 4.2 Small-sized M2M UICC side view and bottom view

#### 4.2.1 Orientation mark for the bottom of the package

An orientation mark shall be visible on the inner C5 contacting pad.

#### 4.2.2 Orientation mark for the top of the package

The top of the package shall have an orientation mark located in the same corner as contact C5.

