



# SMARTCARD MCU

## Ordering Information

### For Package And Delivery

DATA BRIEFING

#### INTRODUCTION

The manufacturing process of Smartcards involves various components and technologies in order to issue a finished product:

- micromodules,
- flat packages,
- wafers.

#### ■ MICROMODULES

Dedicated package for Smartcard products, the micromodule type depends on the size of the product and on the application.

Table 1 lists all available micromodules.

#### ■ FLAT PACKAGES

For applications which require surface mount technology, suitable for PC cards, or other security modules, STMicroelectronics offers flat packages listed in Table 2.

#### ■ WAFERS

For issuer production need, ST offers sawn and unsawn wafers deliveries, listed in Table 3.

Figure 1. Delivery form

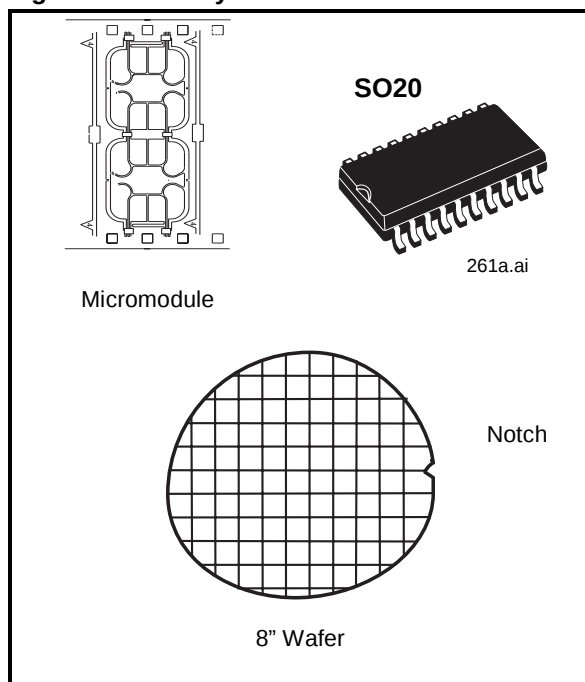


Table 1. Micromodules in super 35 standard tape

| Type   | Description                                       |
|--------|---------------------------------------------------|
| D1, D2 | 8 contacts for memory cards                       |
| D15    | 6 contacts for memory cards                       |
| D3, D4 | 8 contacts with ring MCU cards                    |
| D5     | 8 contacts for dual contact contactless MCU cards |
| D68    | 8 contacts for MCU cards                          |
| D7     | 6 contacts for dual contact contactless MCU cards |
| C7     | Full contactless for MCU cards                    |
| D8     | 8 contacts for MCU cards                          |

Table 2. Flat Packages

| Type | Description                            |
|------|----------------------------------------|
| O20  | SO20 for MCU products                  |
| QF4  | TQFP44 for MCU products                |
| R20  | SO20 on tape and reel for MCU products |

Table 3. Wafers

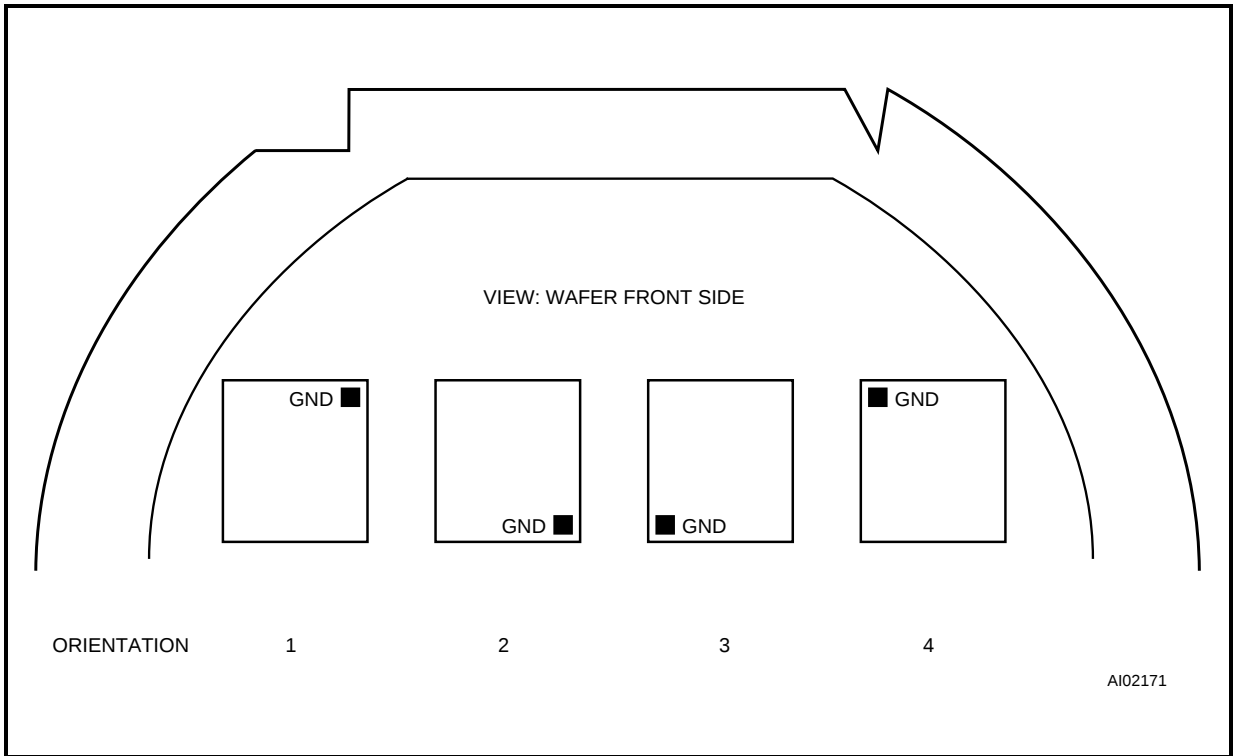
| Type | Description                             |
|------|-----------------------------------------|
| W00  | Unsawn wafers, 750 µm thickness         |
| W20  | Unsawn wafers, 275 µm thickness         |
| W40  | Unsawn wafers, 180 µm thickness         |
| S2x  | 280 µm sawn wafers on UV tape           |
| R4x  | 180 µm sawn wafers on insulated UV tape |
| S4x  | 180 µm sawn wafers on UV tape           |
| T4x  | 180 µm sawn wafers on blue tape         |

Table 4. Ordering Information Scheme

|                                                                                                                                                                                                  |           |     |     |   |                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----|-----|---|-------------------------------|
| Example:                                                                                                                                                                                         | ST19SF08C | D45 | XXX | Z |                               |
| Product name                                                                                                                                                                                     |           |     |     |   | Pre-personalization name      |
|                                                                                                                                                                                                  |           |     |     |   | "+" if no pre-personalization |
| Delivery Form                                                                                                                                                                                    |           |     |     |   | Customer ROM code name        |
| Dxx: Module contact or dual<br>Cxx: Contactless modules<br>Oxx: SO package<br>Wxx: Unsawn wafer<br>Sxy*: Sawn wafer (std UV tape)<br>Rxy*: Sawn wafer (insolated UV tape) or SO on tape and reel |           |     |     |   |                               |

Note: \*where "y" indicates the sawing orientation as shown in Figure 2

Figure 2. Sawing orientation



Sawn wafers are scribed and mounted in a frame on adhesive tape. The orientation is defined by the position of the GND pad on the die, viewed with active area of product visible, relative to the notches of the frame (as shown in Figure 2). The orientation of the die with respect to the plastic frame notches is specified by the Customer.

One further concern, when specifying devices to be delivered in this form, is that wafers mounted on adhesive tape must be used within a limited period from the mounting date:

- two months, if wafers are stored at 25°C, 55% relative humidity
- six months, if wafers are stored at 4°C, 55% relative humidity