Reference device marking schematics for STM32 microcontrollers and microprocessors

Introduction

This document provides the most probable(1) device marking example for every package code(2) encountered in STM32 general-purpose microcontrollers or microprocessors.

The package code is a unique package identifier that can be found:

- in this document, between parenthesis, at the end of each section title
- in this document, as a fragment of the index located at each figure bottom-right corner
- in the product datasheet, between parenthesis, at the end of each section title, or as a fragment of the index located at the bottom-right corner of package outline figures.

(1): Some slight package marking variations may be encountered between different products using the same package, and even between two identical products (in case of multiple assembly plants for instance). Nevertheless, the pin 1 / ball A1 localisation instructions provided in this document apply invariably.

(2): Except wafer level chip scale packages (WLCSP) that remain described in the product datasheet.

1 General information

This document applies to STM32 Arm®-based general-purpose microcontrollers or microprocessors.

Note: Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.

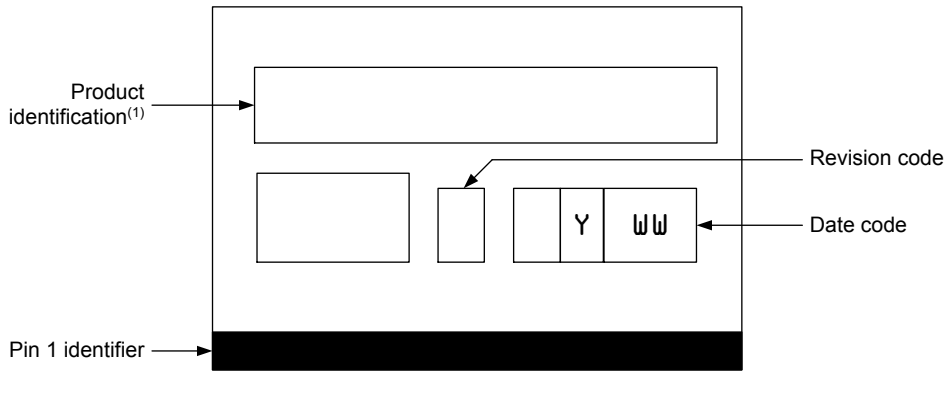
2 Device markings for SO packages

2.1 Device marking for SO8N 4.9 × 6 mm (O7)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 1. SO8N marking example (package top view)



1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

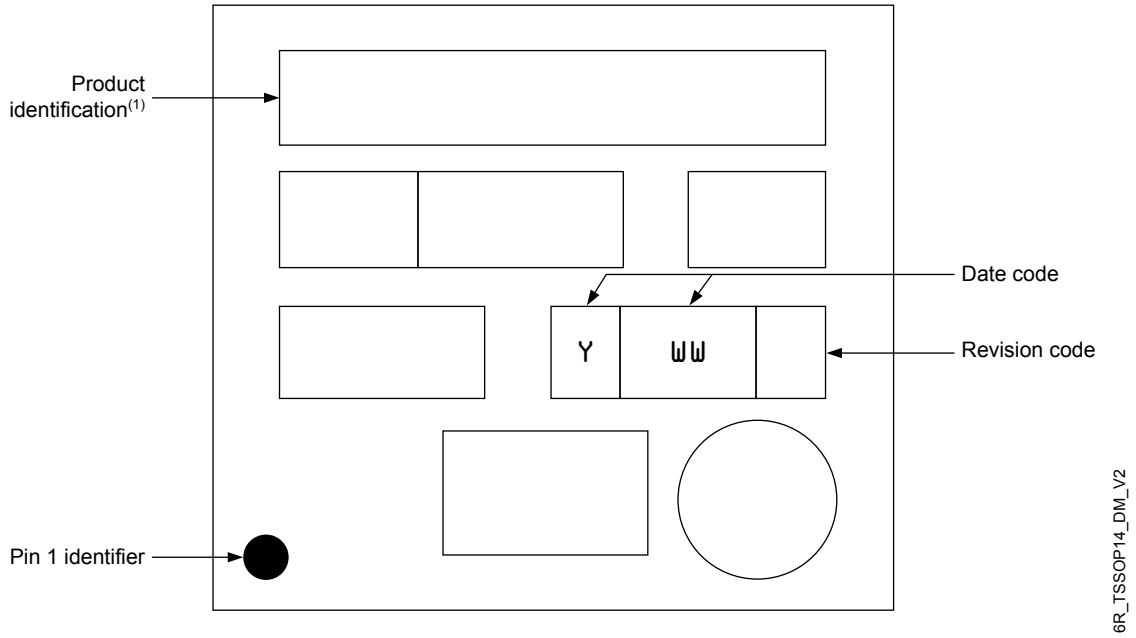
3 Device markings for TSSOP packages

3.1 Device marking for TSSOP14 5 × 4.4 mm (6R)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 2. TSSOP14 marking example (package top view)



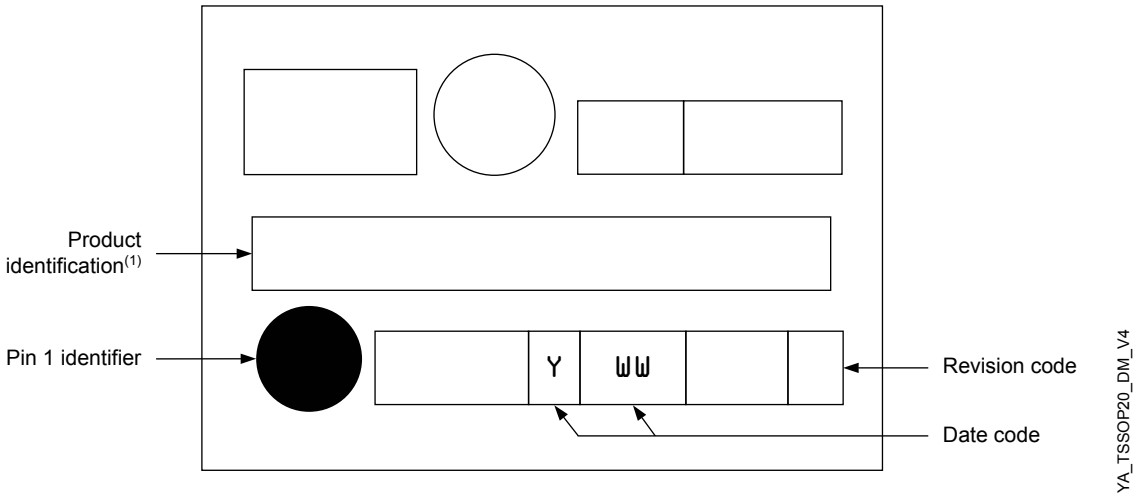
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

3.2 Device marking for TSSOP20 6.5 × 4.4 mm (YA)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 3. TSSOP20 marking example (package top view)



1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

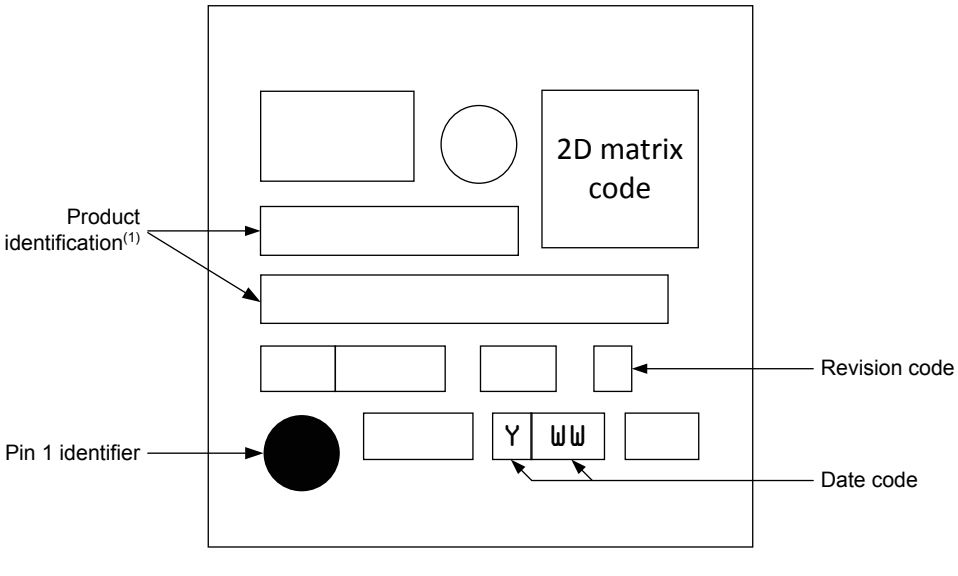
4 Device markings for LQFP packages

4.1 Device marking for LQFP32 7 × 7 mm (5V)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 4. LQFP32 marking example (package top view)



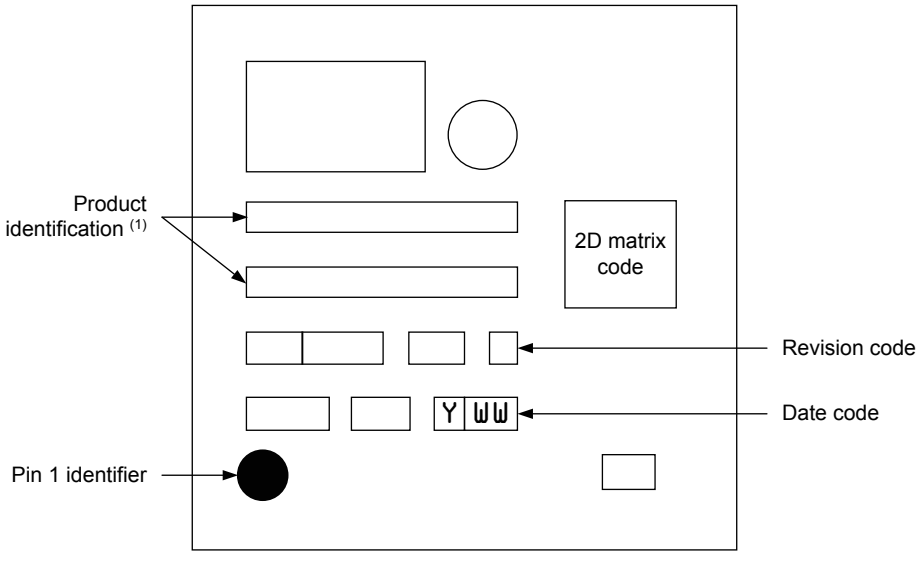
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.2 Device marking for LQFP44 10 × 10 mm (4Y)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 5. **LQFP44 marking example (package top view)**



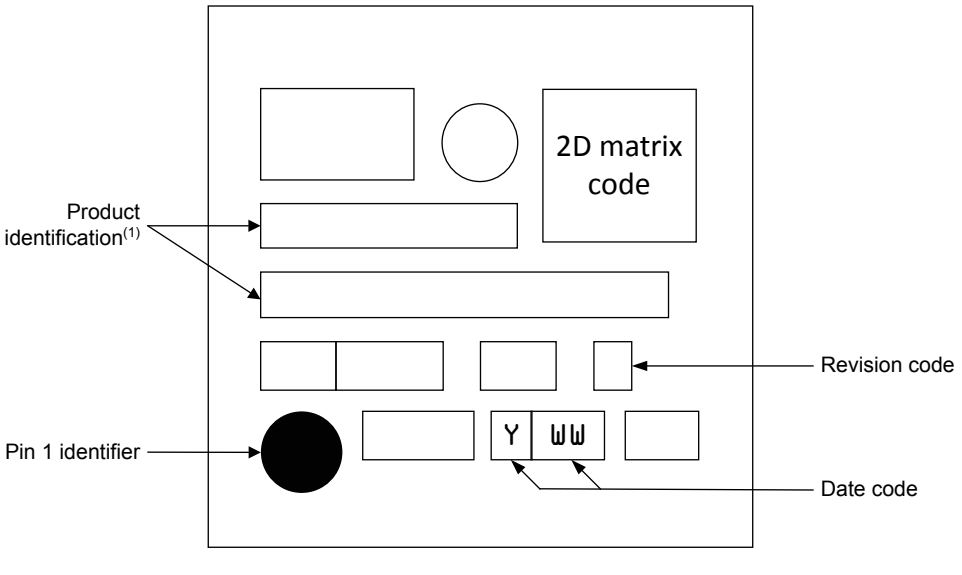
1. *Parts marked as "ES", "E" or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST's Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.3 Device marking for LQFP48 7 × 7 mm (5B)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 6. **LQFP48 marking example (package top view)**



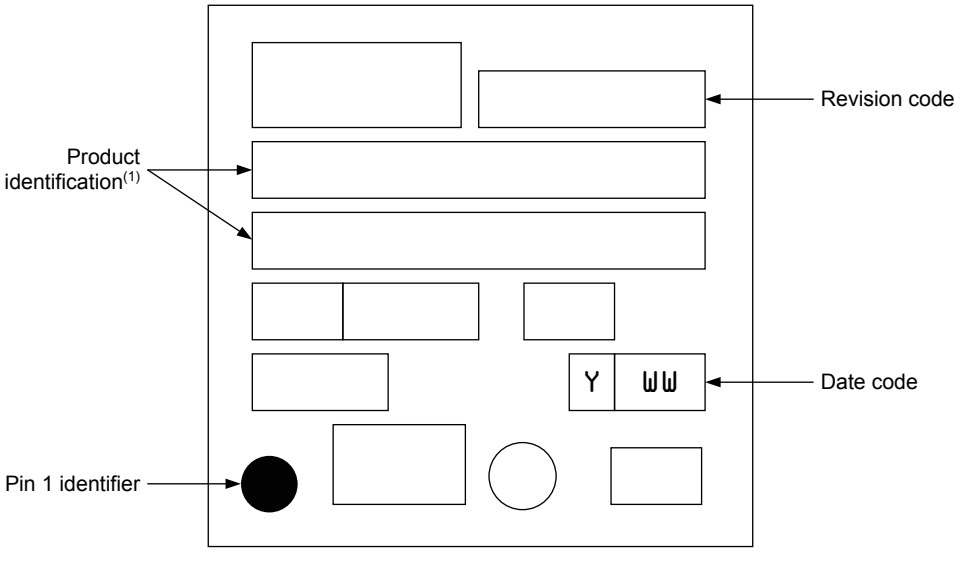
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.4 Device marking for LQFP64 10 × 10 mm (5W)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 7. LQFP64 marking example (package top view)



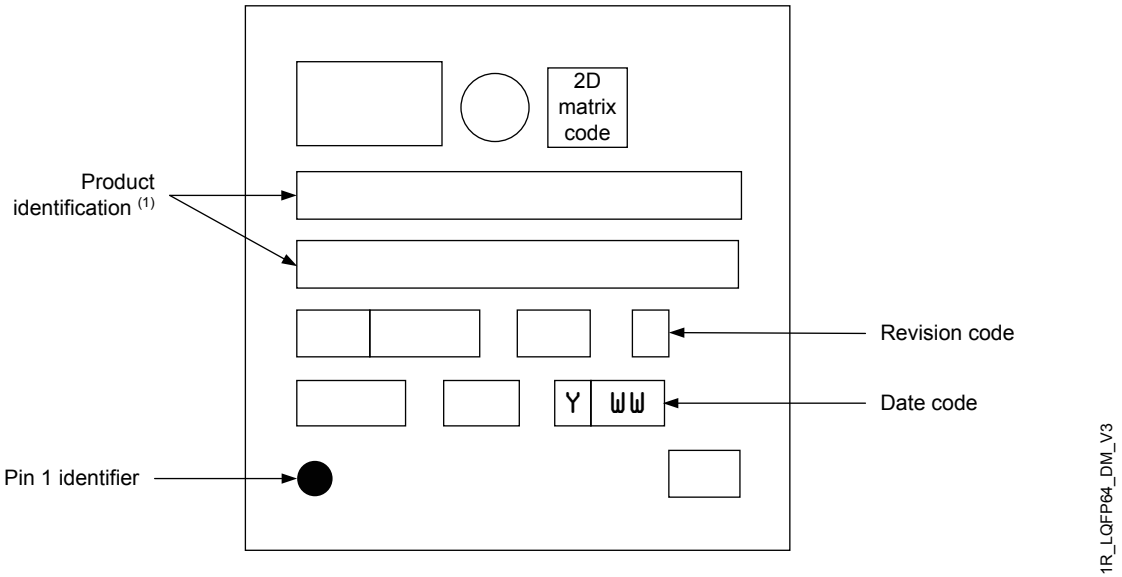
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.5 Device marking for LQFP64 14 × 14 mm (1R)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 8. **LQFP64 marking example (package top view)**



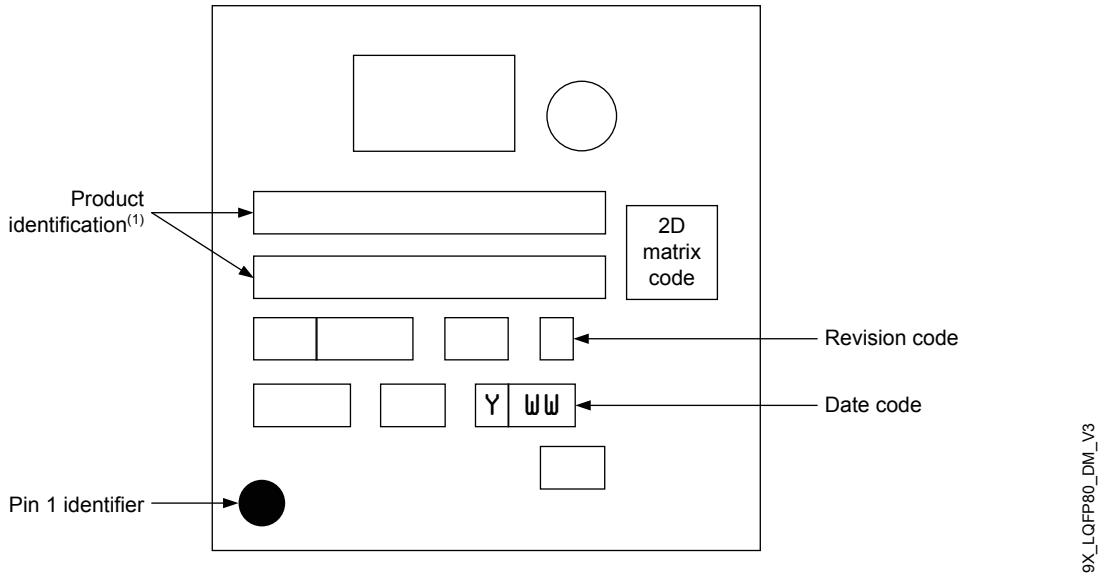
1. *Parts marked as "ES", "E" or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST's Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.6 Device marking for LQFP80 12 × 12 mm (9X)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 9. **LQFP80 marking example (package top view)**



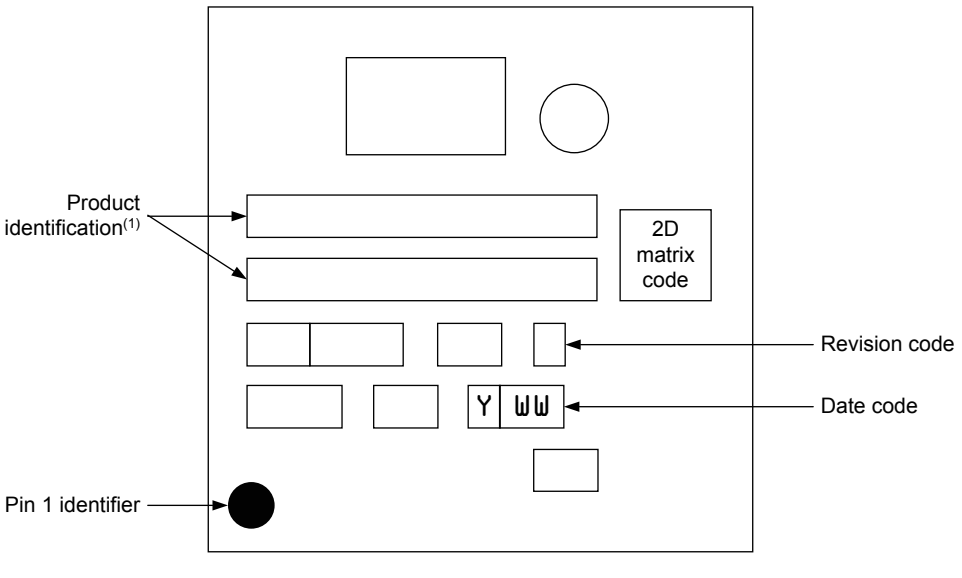
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.7 Device marking for LQFP80 12 × 12 mm (C03F)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 10. LQFP80 marking example (package top view)



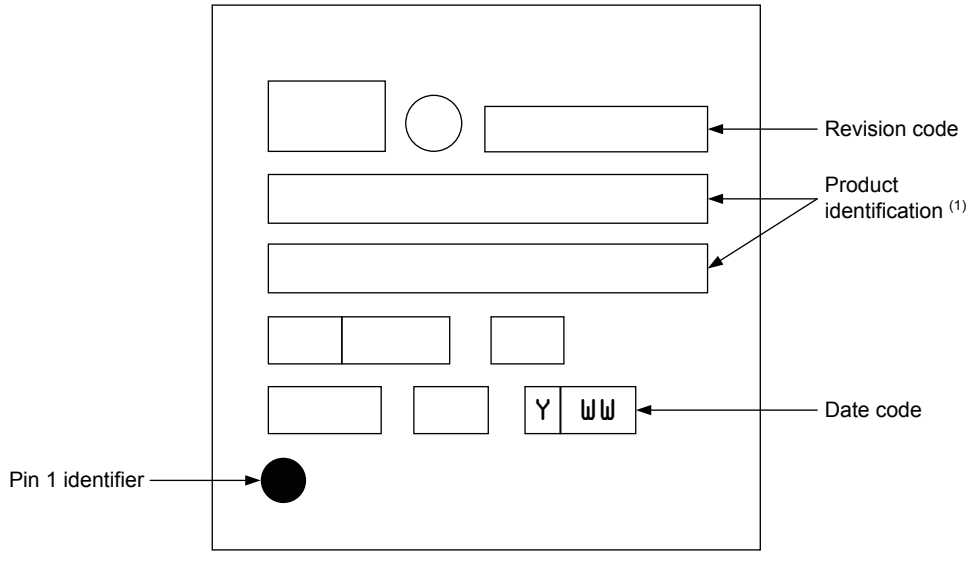
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.8 Device marking for LQFP80 14 × 14 mm (1S)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 11. **LQFP80 marking example (package top view)**



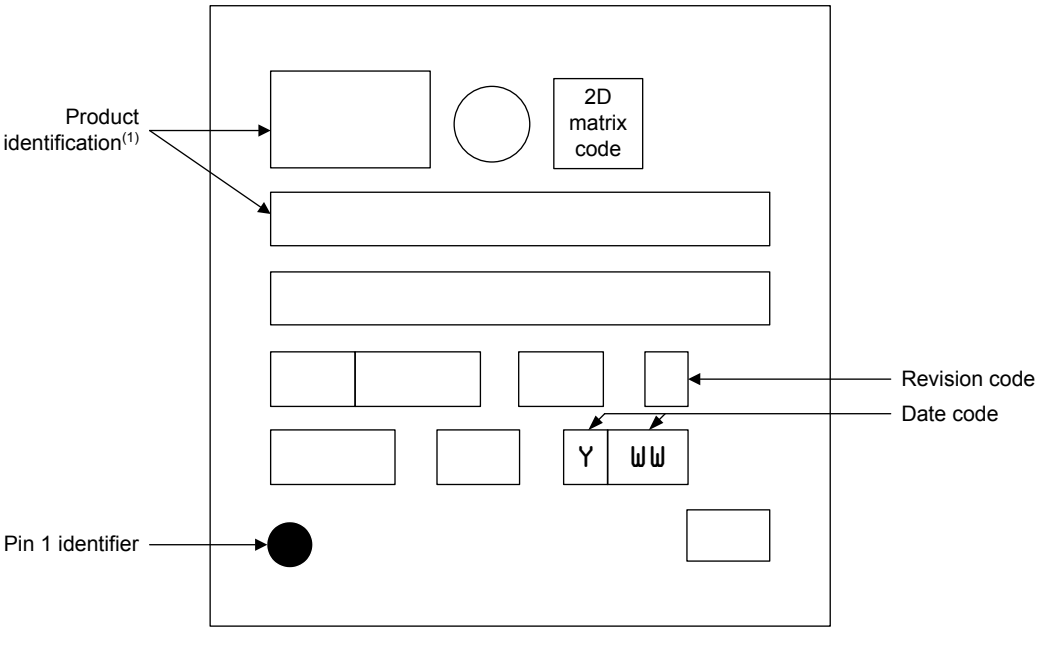
1. *Parts marked as "ES", "E" or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST's Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.9 Device marking for LQFP100 14 × 14 mm (1L)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 12. **LQFP100 marking example (package top view)**



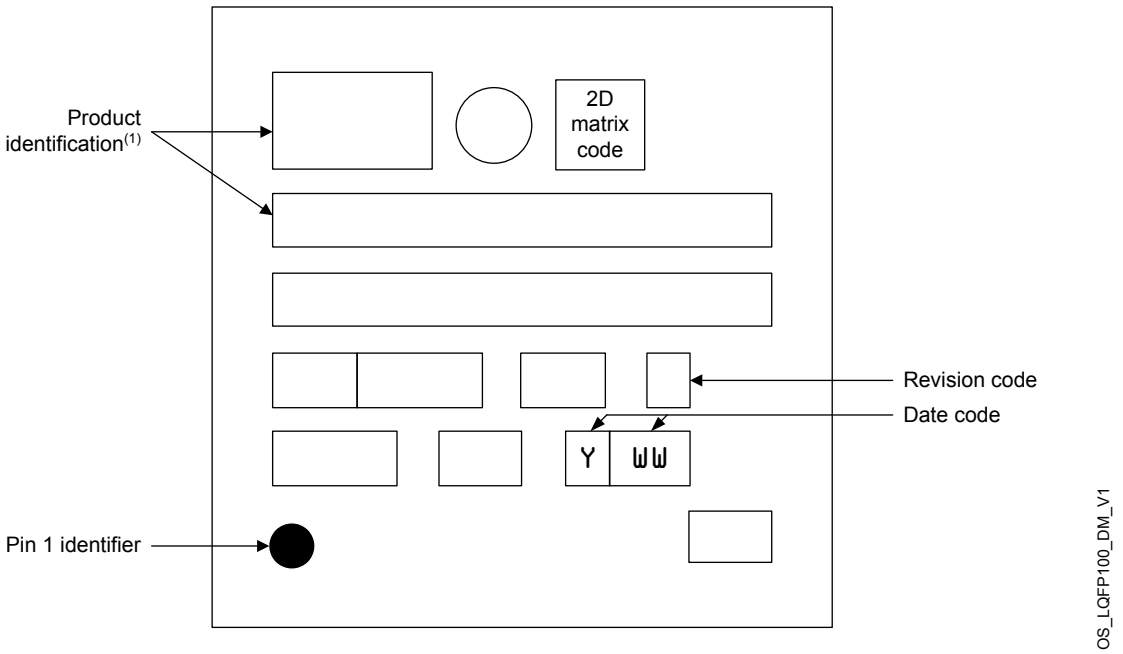
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.10 Device marking for LQFP100 14 × 14 mm (OS)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 13. LQFP100 marking example (package top view)



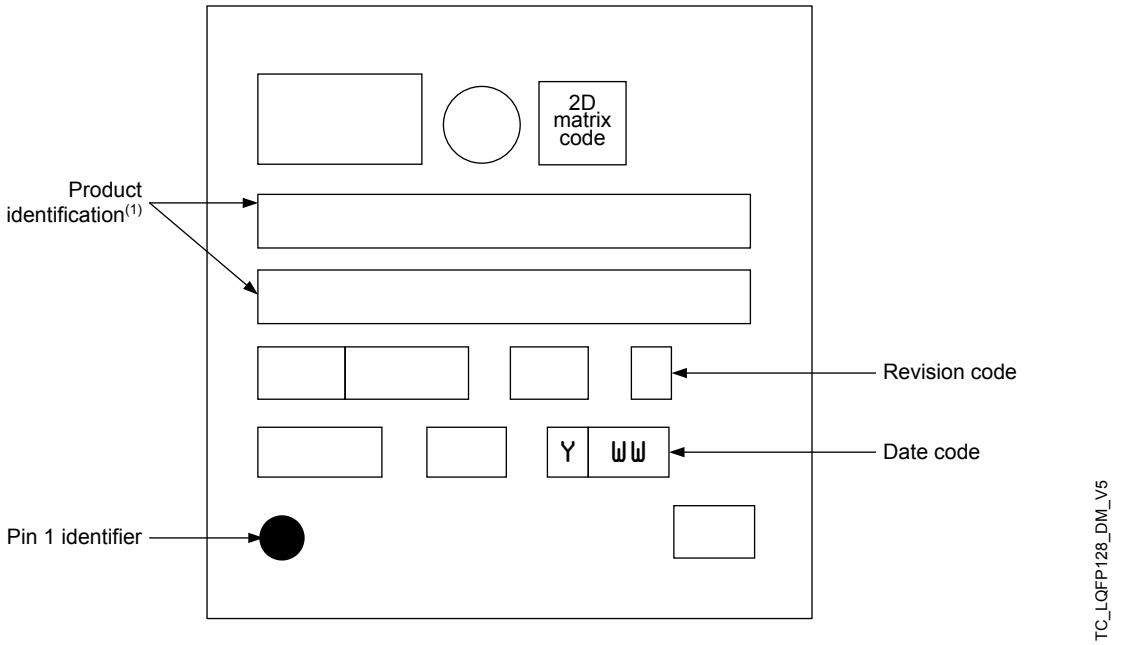
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.11 Device marking for LQFP128 14 × 14 mm (TC)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 14. **LQFP128 marking example (package top view)**



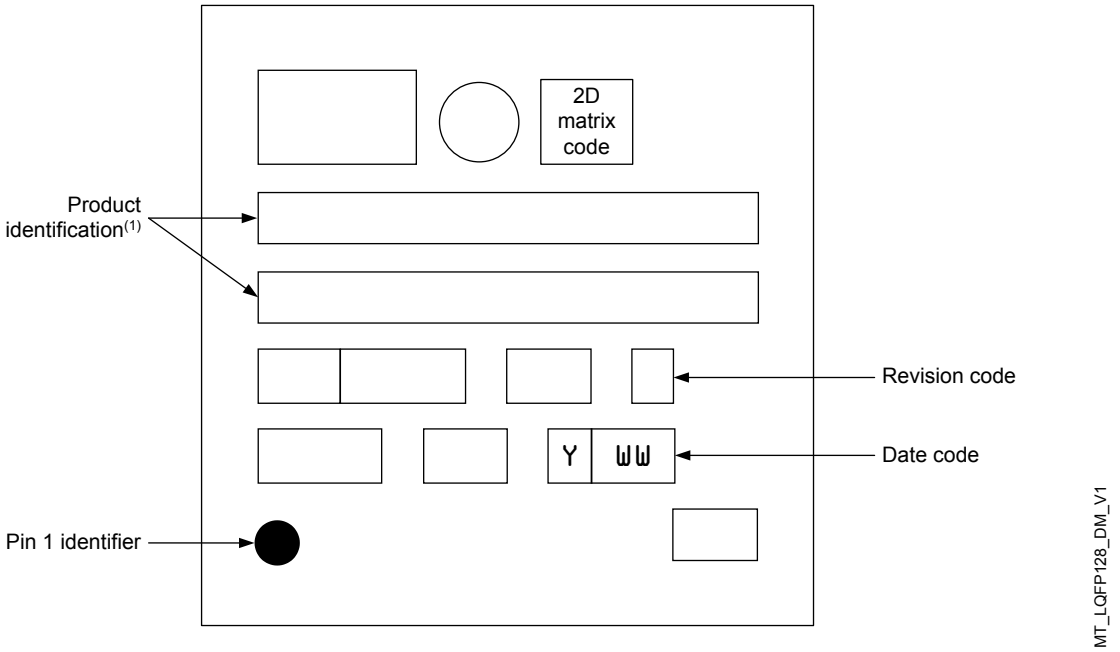
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.12 Device marking for LQFP128 14 × 14 mm (MT)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 15. **LQFP128 marking example (package top view)**



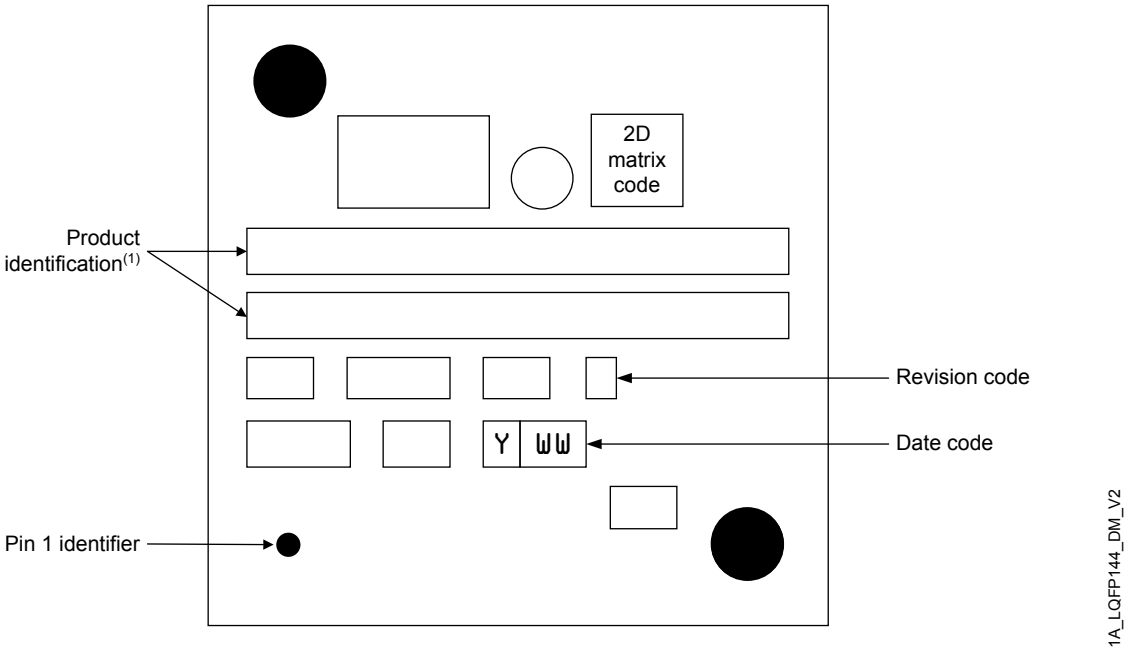
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.13 Device marking for LQFP144 20 × 20 mm (1A)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 16. **LQFP144 marking example (package top view)**



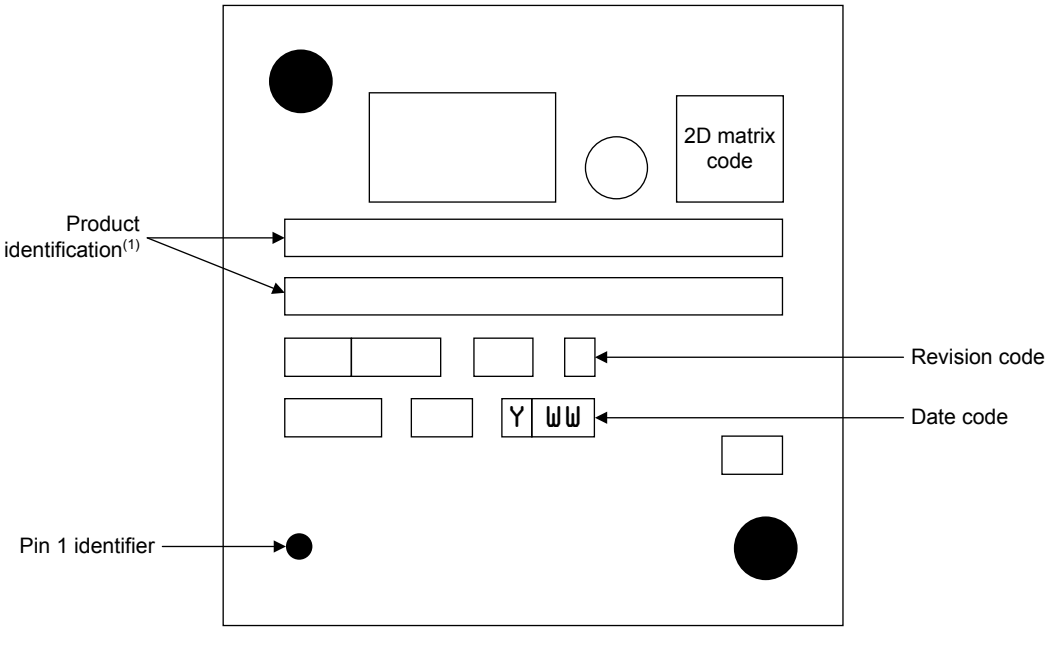
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.14 Device marking for LQFP176 24 × 24 mm (1T)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 17. **LQFP176 marking example (package top view)**



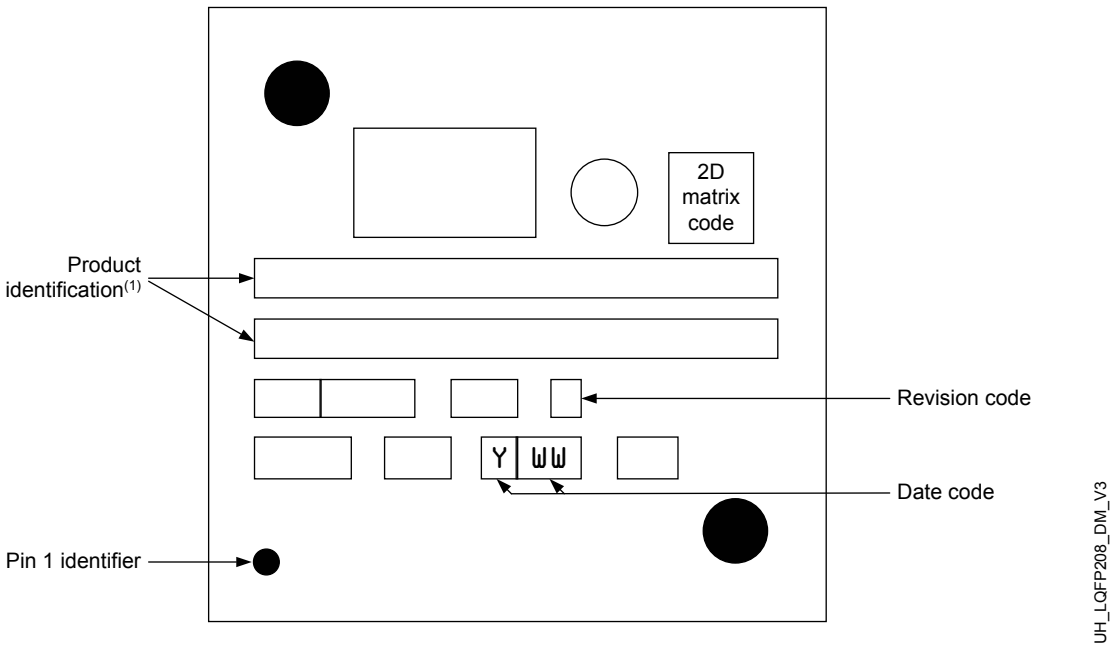
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

4.15 Device marking for LQFP208 28 × 28 mm (UH)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 18. **LQFP208 marking example (package top view)**



1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

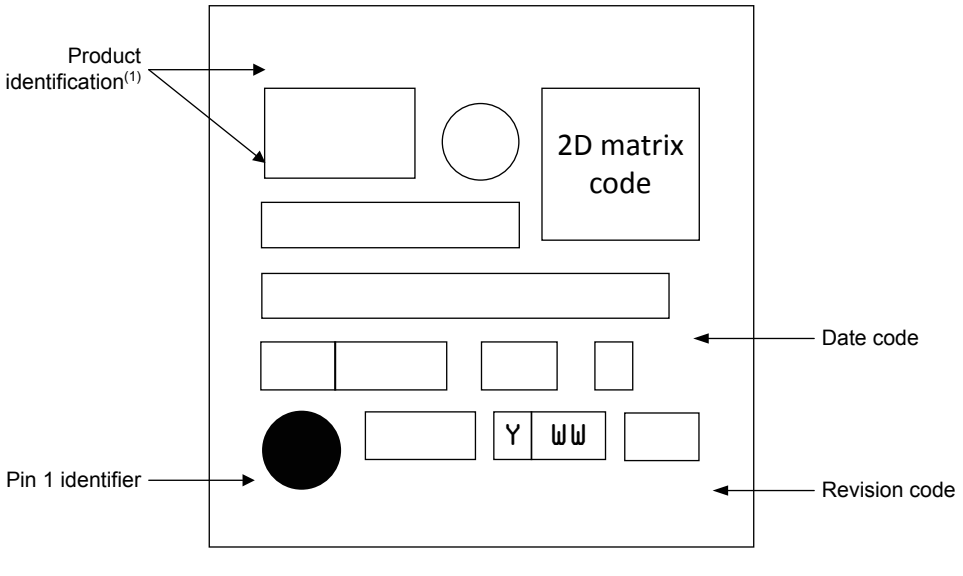
5 Device markings for TQFP packages

5.1 Device marking for TQFP48 7 × 7 mm (ES)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 19. TQFP48 marking example (package top view)



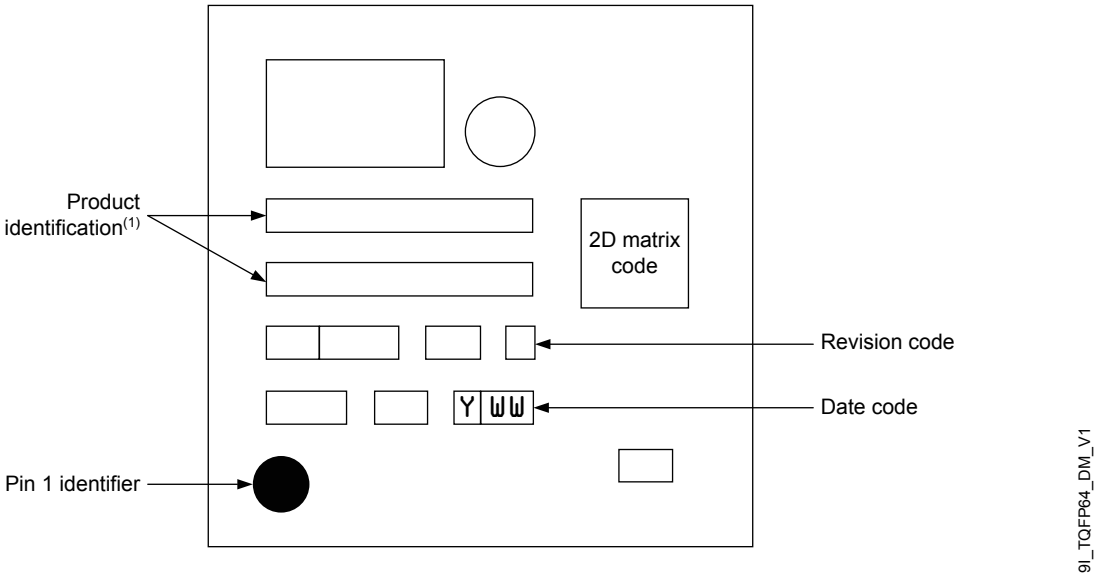
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

5.2 Device marking for TQFP64 10 × 10 mm (9I)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 20. TQFP64 marking example (package top view)



1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

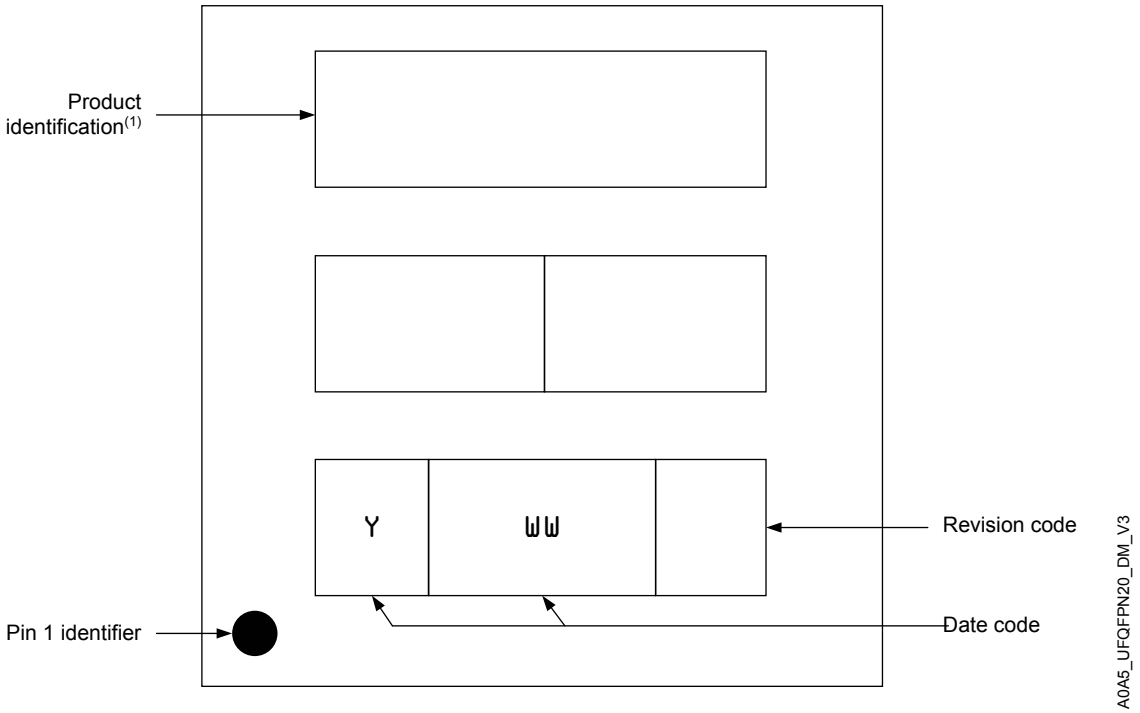
6 Device markings for UFQFPN packages

6.1 Device marking for UFQFPN20 3 × 3 mm (A0A5)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 21. UFQFPN20 marking example (package top view)



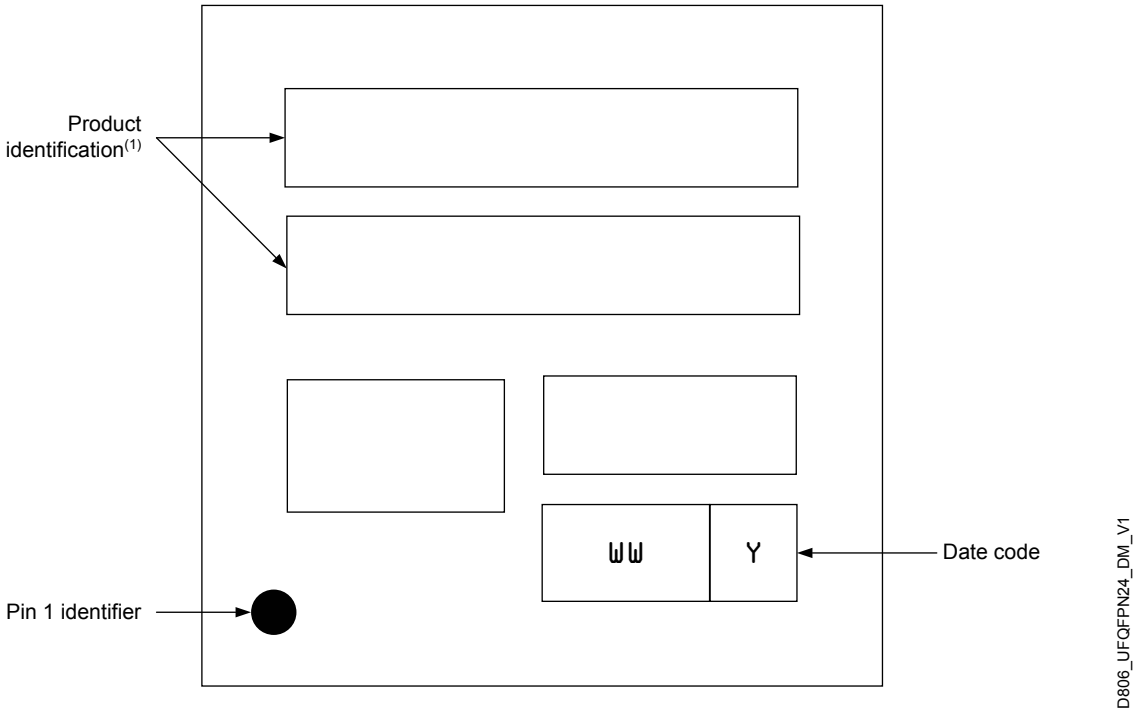
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

6.2 Device marking for UFQFPN24 4 × 4 mm (998Z)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 22. **UFQFPN24 marking example (package top view)**



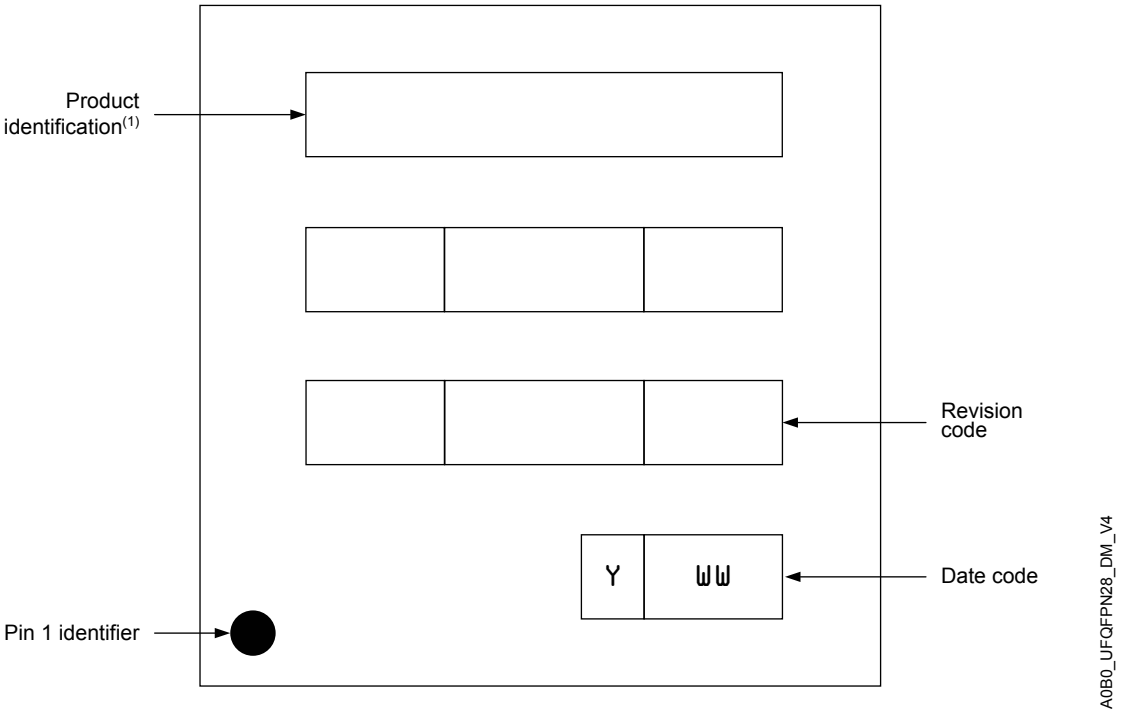
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

6.3 Device marking for UFQFPN28 4 × 4 mm (A0B0)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 23. **UFQFPN28 marking example (package top view)**



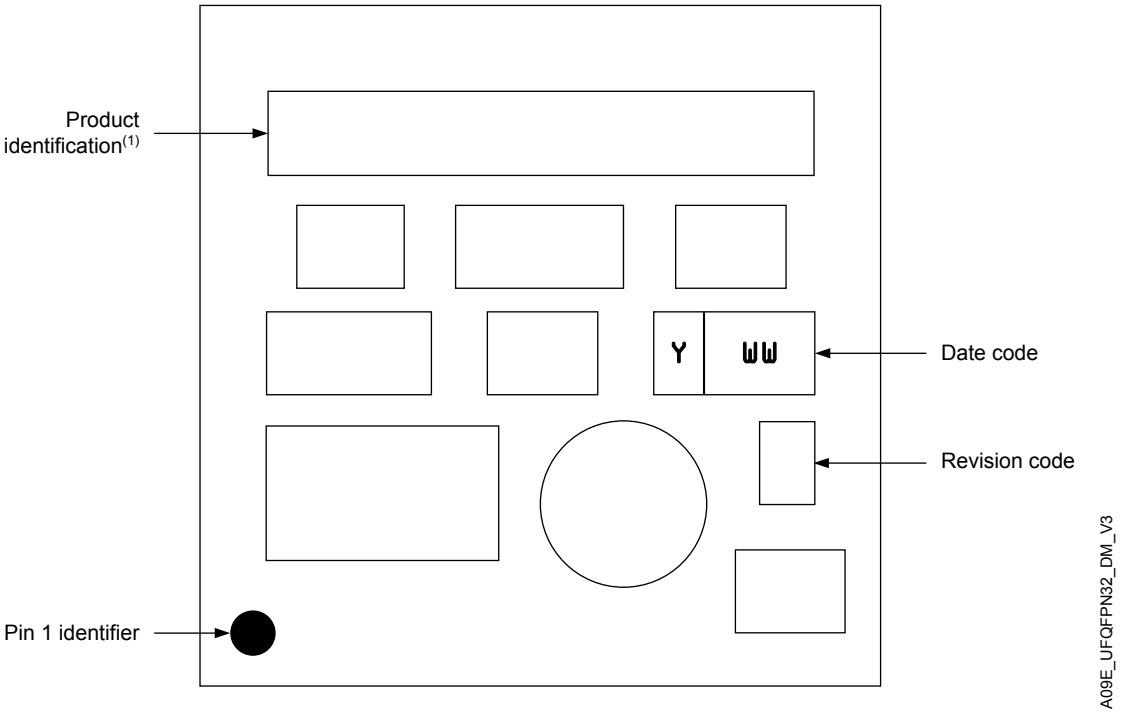
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

6.4 Device marking for UFQFPN32 5 × 5 mm (A09E)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 24. **UFQFPN32 marking example (package top view)**



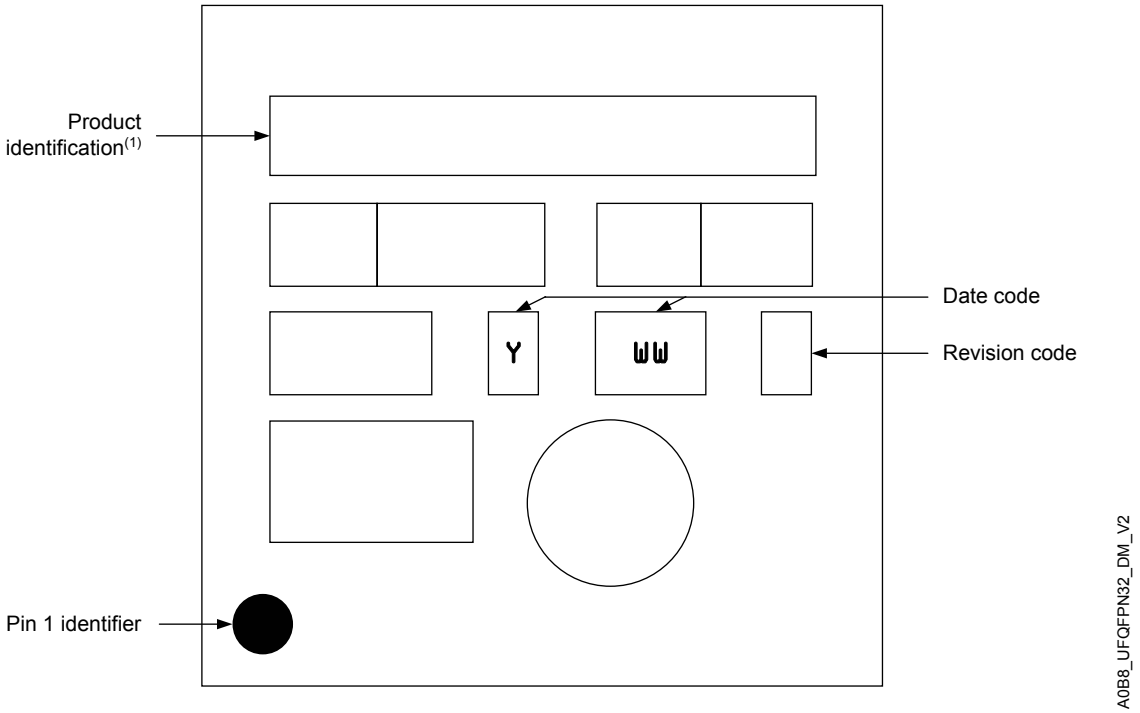
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

6.5 Device marking for UFQFPN32 5 × 5 mm (A0B8)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 25. **UFQFPN32 marking example (package top view)**



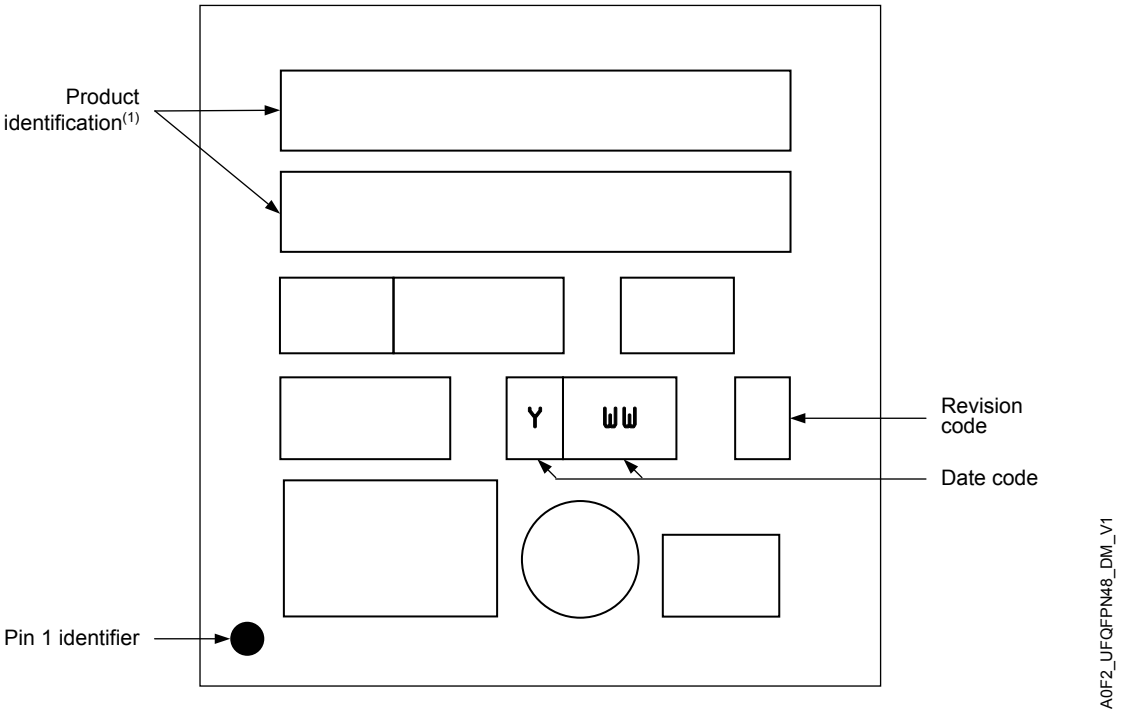
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

6.6 Device marking for UFQFPN48 6 × 6 mm (A0F2)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 26. **UFQFPN48 marking example (package top view)**



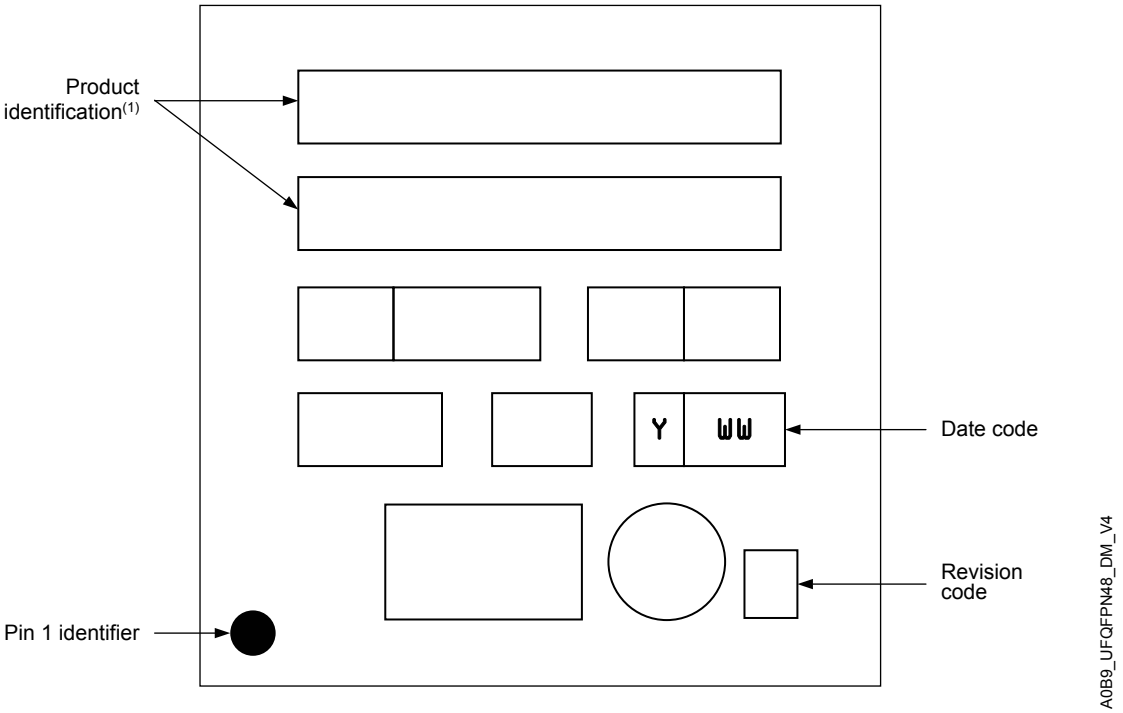
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

6.7 Device marking for UFQFPN48 7 × 7 mm (A0B9)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 27. UFQFPN48 marking example (package top view)



1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

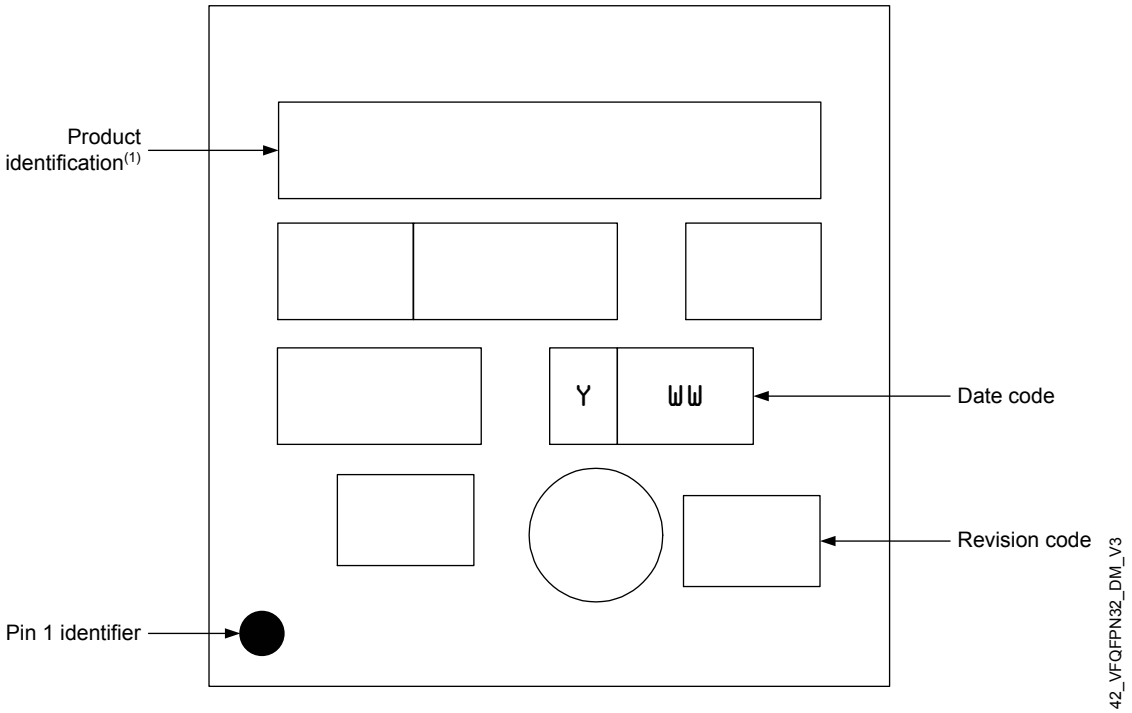
7 Device markings for VFQFPN packages

7.1 Device marking for VFQFPN32 5 × 5 mm (42)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 28. VFQFPN32 marking example (package top view)



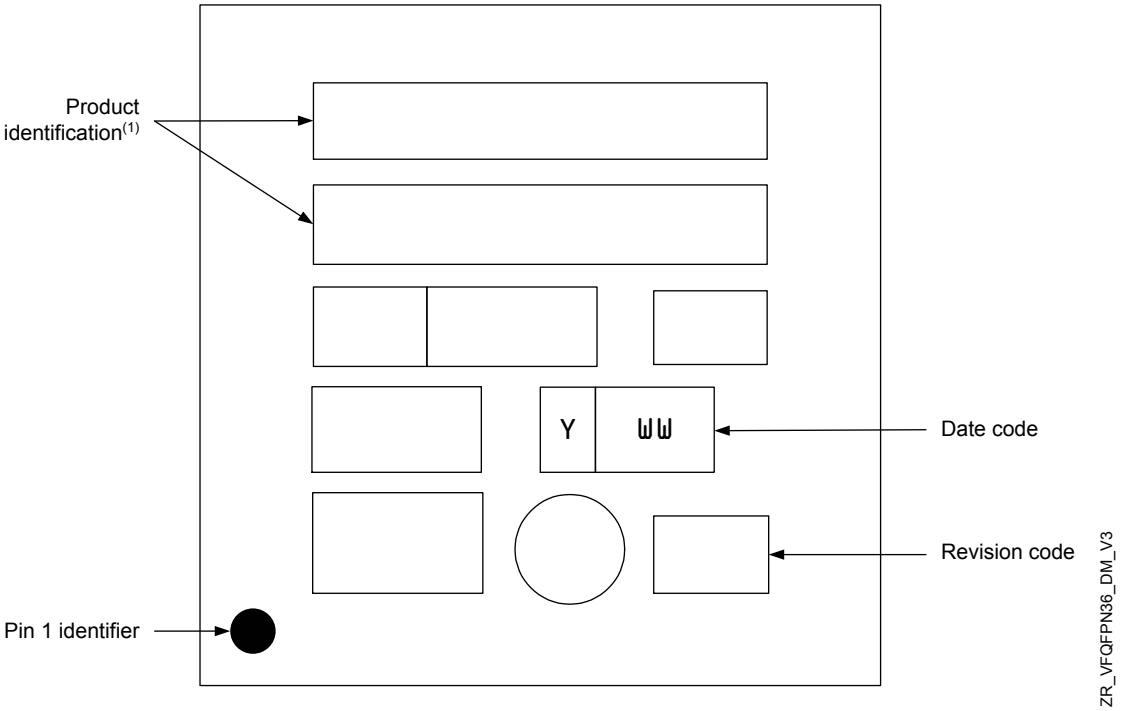
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

7.2 Device marking for VFQFPN36 6 × 6 mm (ZR)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 29. **VFQFPN36 marking example (package top view)**



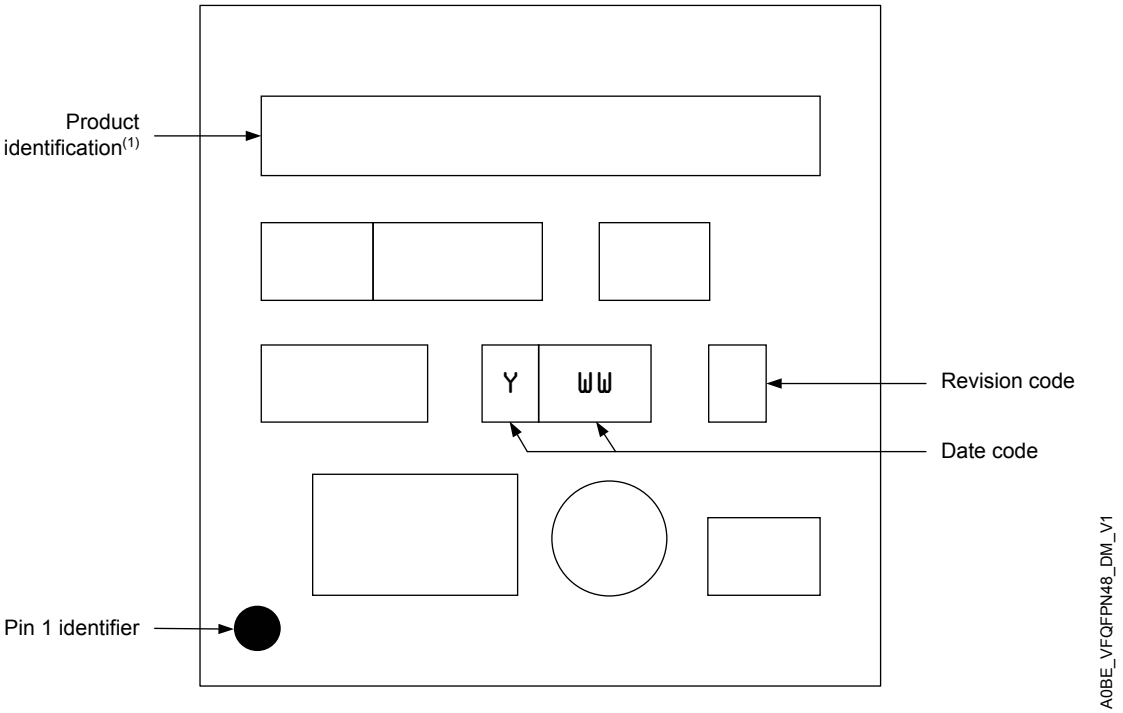
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

7.3 Device marking for VFQFPN48 6 × 6 mm (A0BE)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 30. **VFQFPN48 marking example (package top view)**



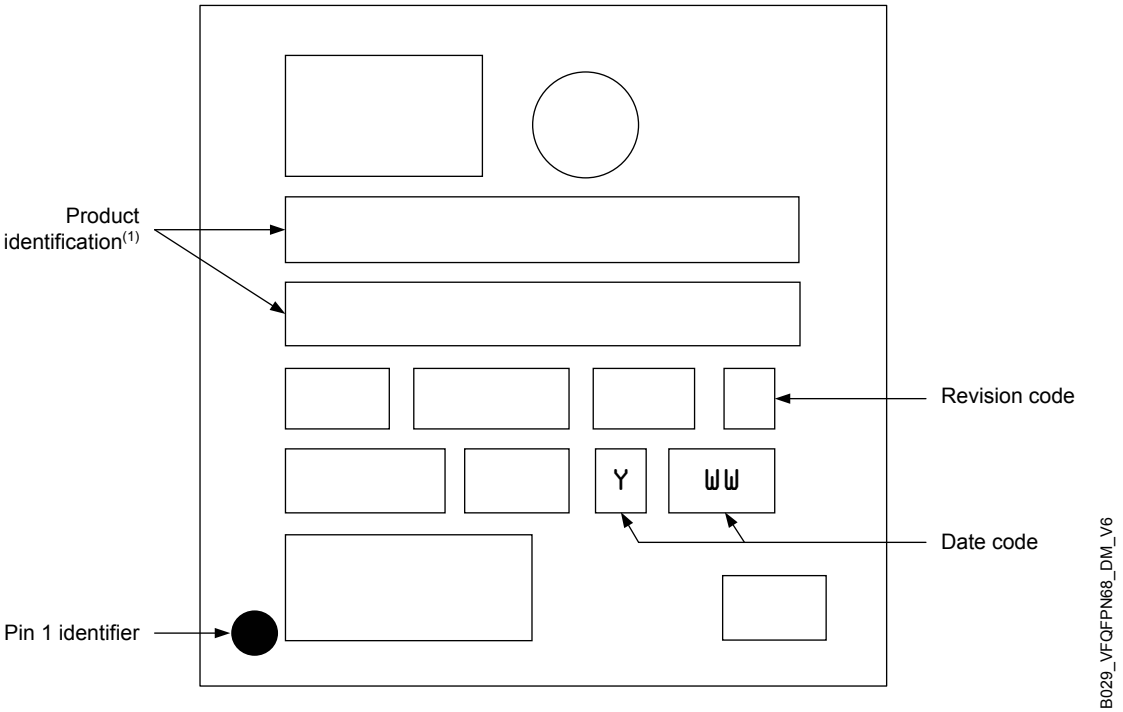
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

7.4 Device marking for VFQFPN68 8 × 8 mm (B029)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 31. VFQFPN68 marking example (package top view)



1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

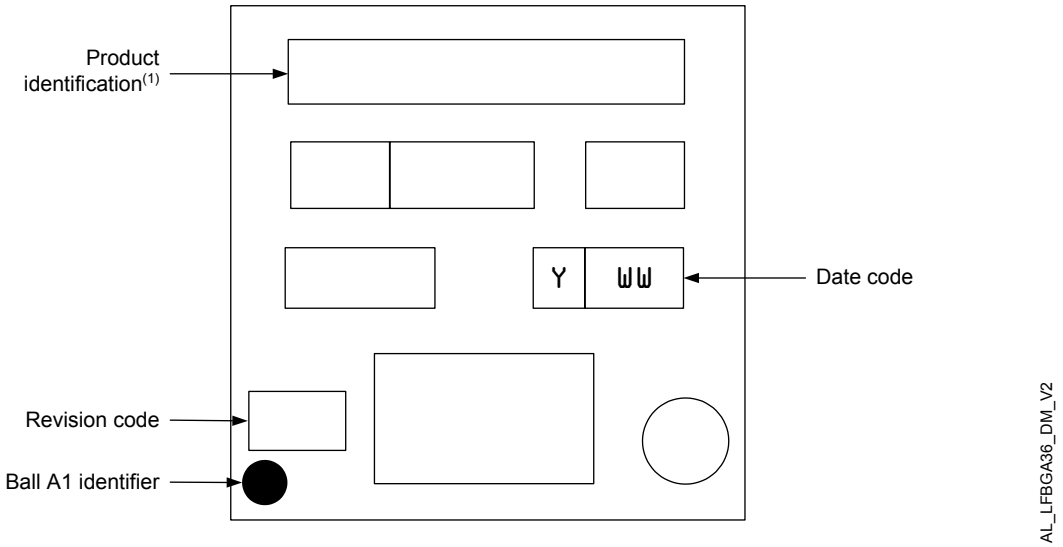
8 Device markings for LFBGA packages

8.1 Device marking for LFBGA36 6 × 6 mm (AL)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 32. LFBGA36 marking example (package top view)



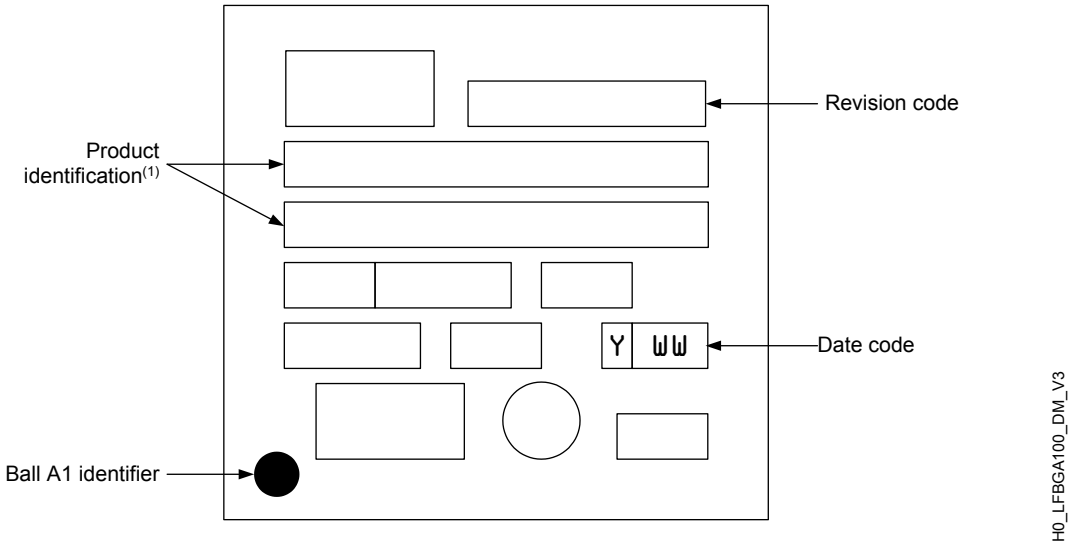
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

8.2 Device marking for LFBGA100 10 × 10 mm (H0)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 33. **LFBGA100 marking example (package top view)**



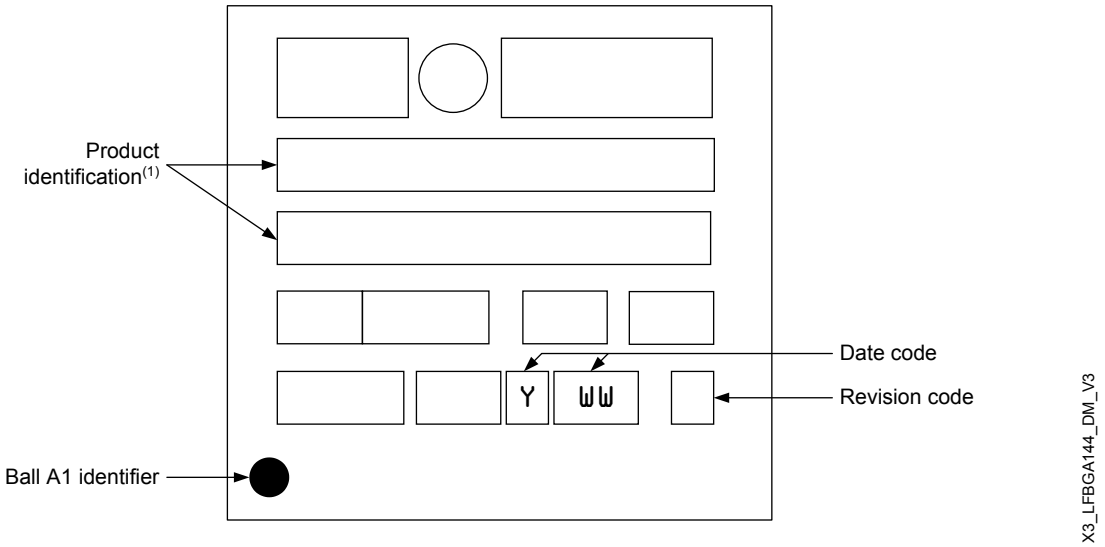
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

8.3 Device marking for LFBGA144 10 × 10 mm (X3)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 34. **LFBGA144 marking example (package top view)**



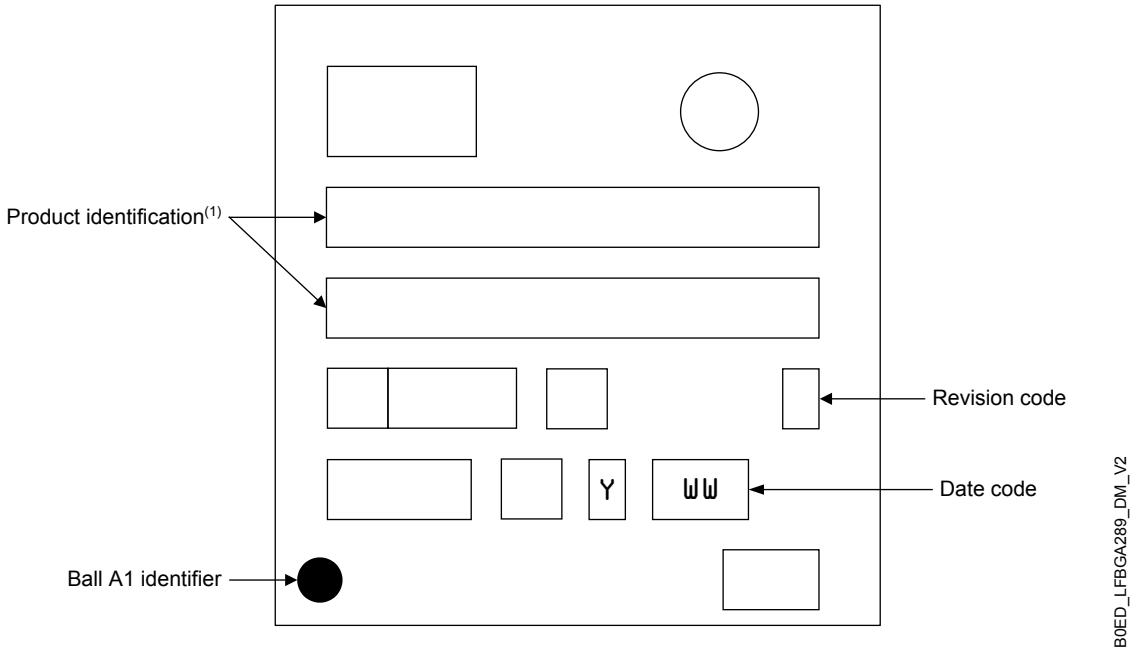
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

8.4 Device marking for LFBGA289 14 × 14 mm (B0ED)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 35. LFBGA289 marking example (package top view)



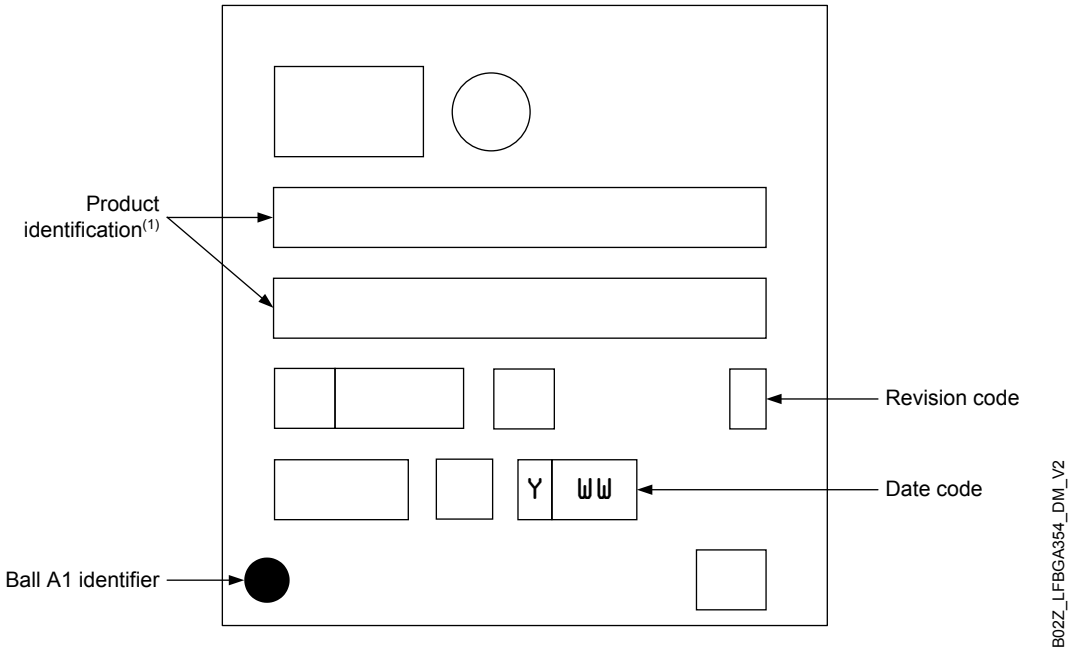
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

8.5 Device marking for LFBGA354 16 × 16 mm (B02Z)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 36. **LFBGA354 marking example (package top view)**



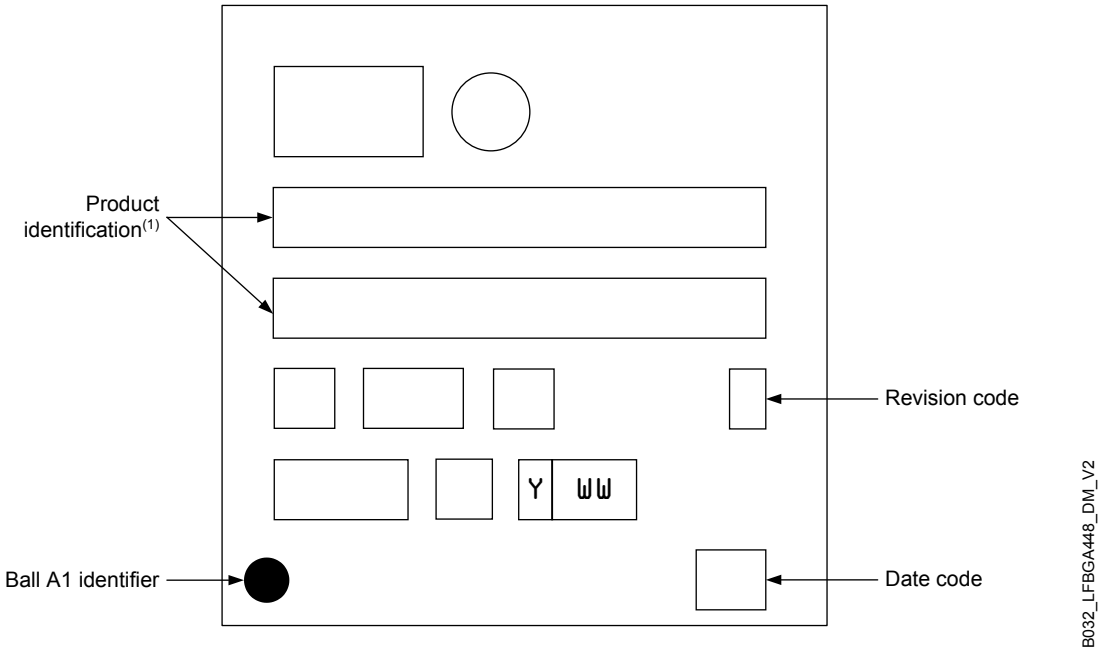
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

8.6 Device marking for LFBGA448 18 × 18 mm (B032)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 37. LFBGA448 marking example (package top view)



1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

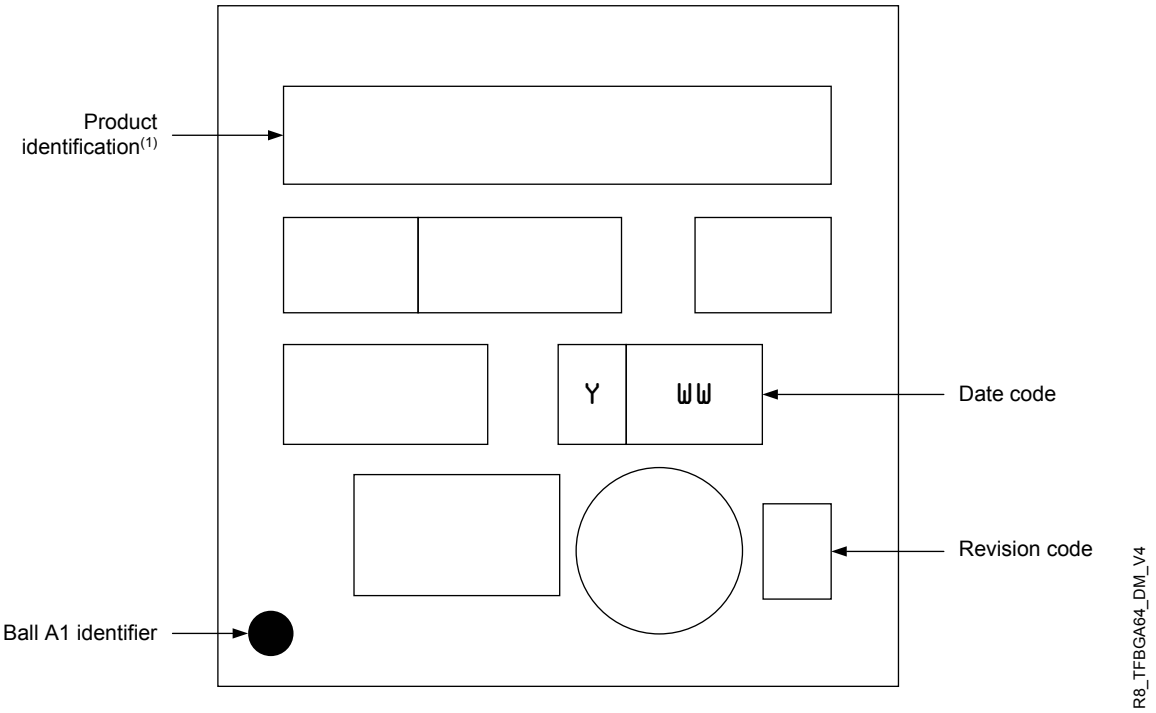
9 Device markings for TFBGA packages

9.1 Device marking for TFBGA64 5 × 5 mm (R8)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 38. TFBGA64 marking example (package top view)



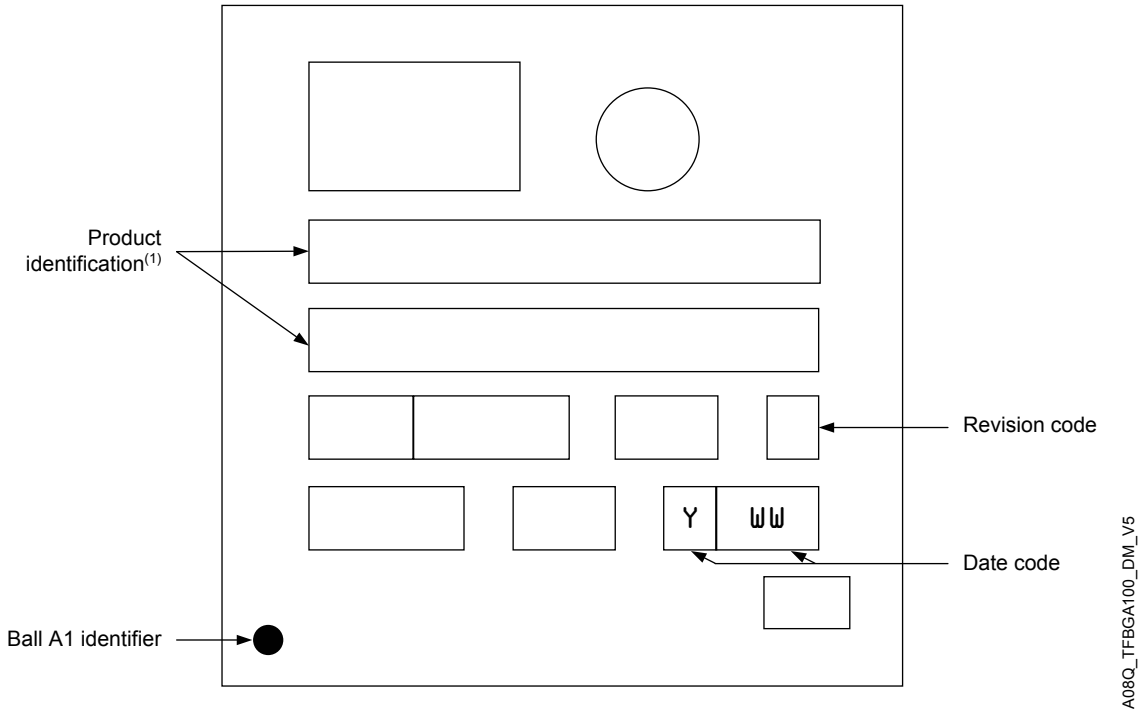
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.2 Device marking for TFBGA100 8 × 8 mm (A08Q)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 39. **TFBGA100 marking example (package top view)**



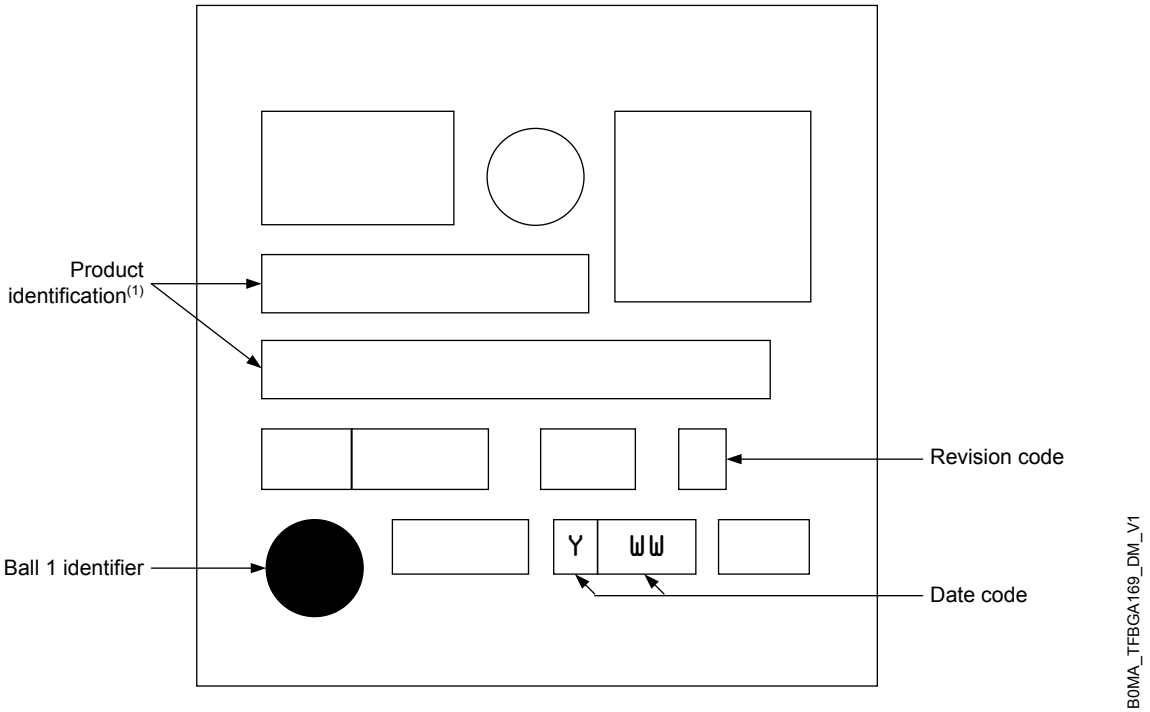
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.3 Device marking for TFBGA169 7 × 7 mm (B0MA)

The following figure gives an example of the locations and orientation of the marking areas versus ball 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball 1 is always located at bottom left.

Figure 40. **TFBGA169 marking example (package top view)**



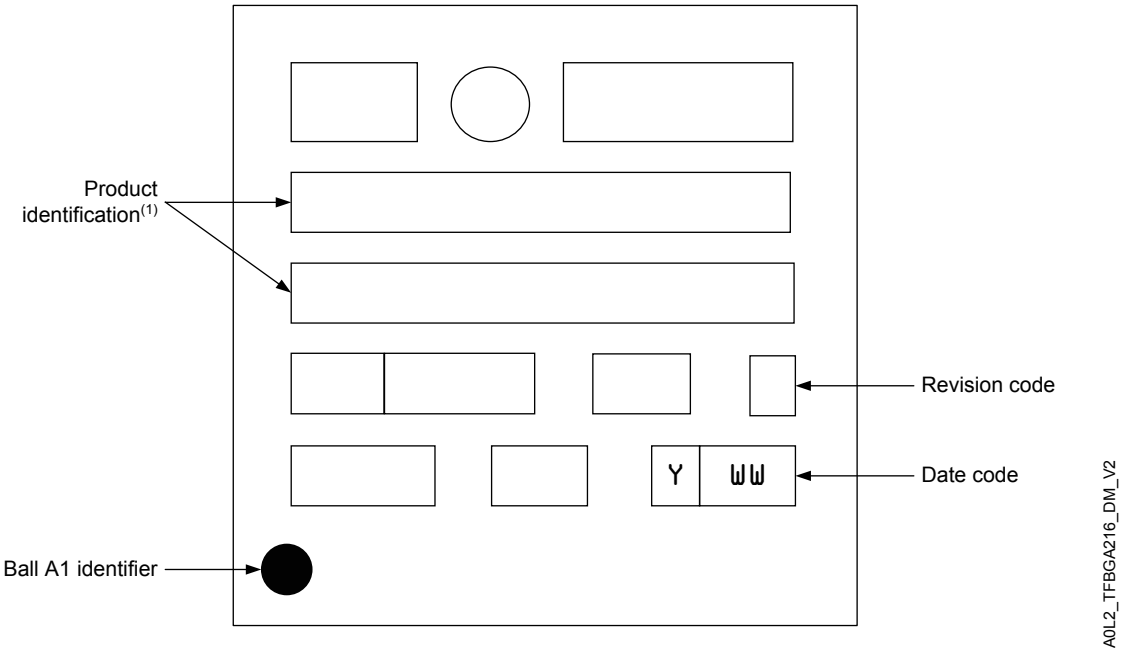
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.4 Device marking for TFBGA216 13 × 13 mm (A0L2)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 41. **TFBGA216 marking example (package top view)**



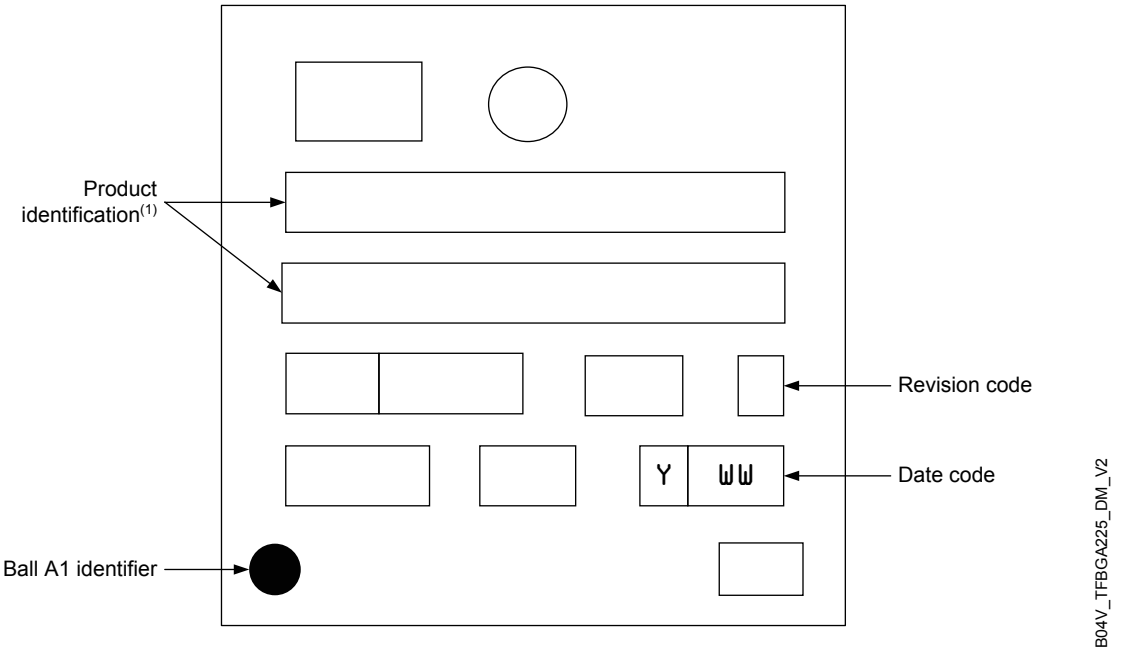
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.5 Device marking for TFBGA225 13 × 13 mm (B04V)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 42. **TFBGA225 marking example (package top view)**



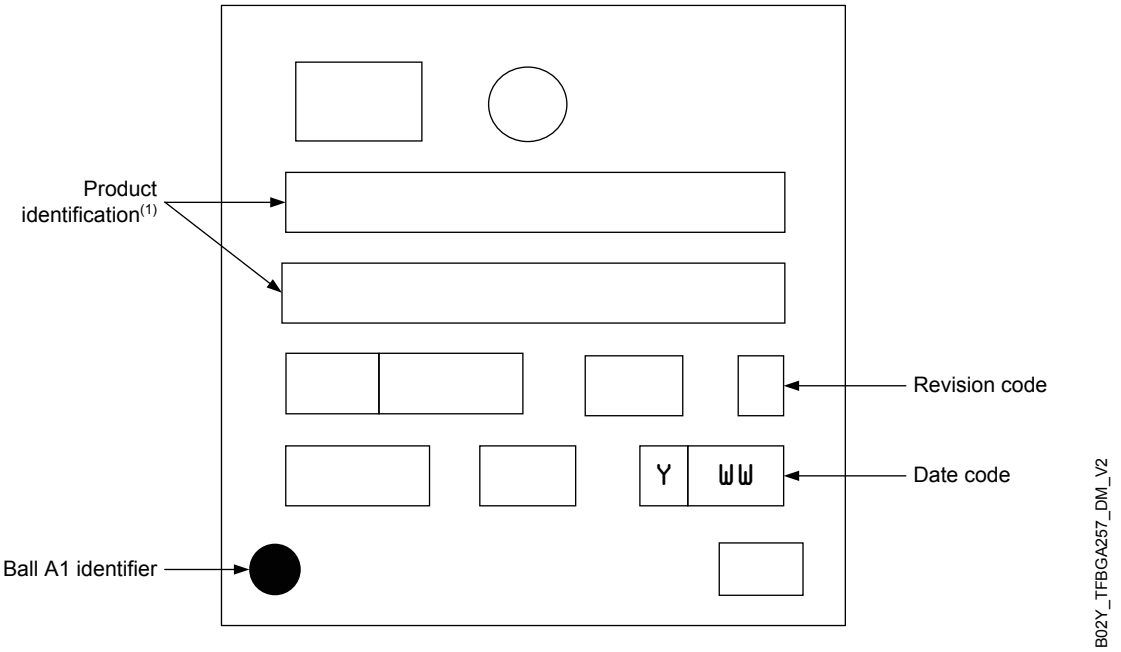
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.6 Device marking for TFBGA257 10 × 10 mm (B02Y)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 43. **TFBGA257 marking example (package top view)**



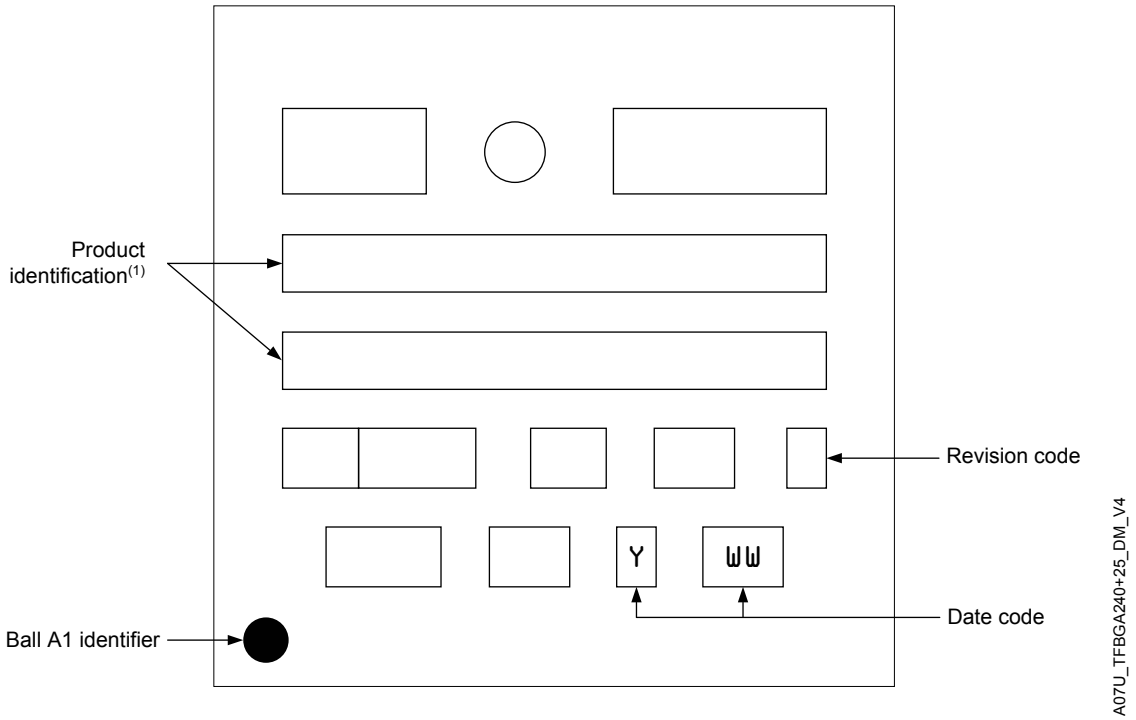
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.7 Device marking for TFBGA240+25 14 × 14 mm (A07U)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 44. **TFBGA240+25 marking example (package top view)**



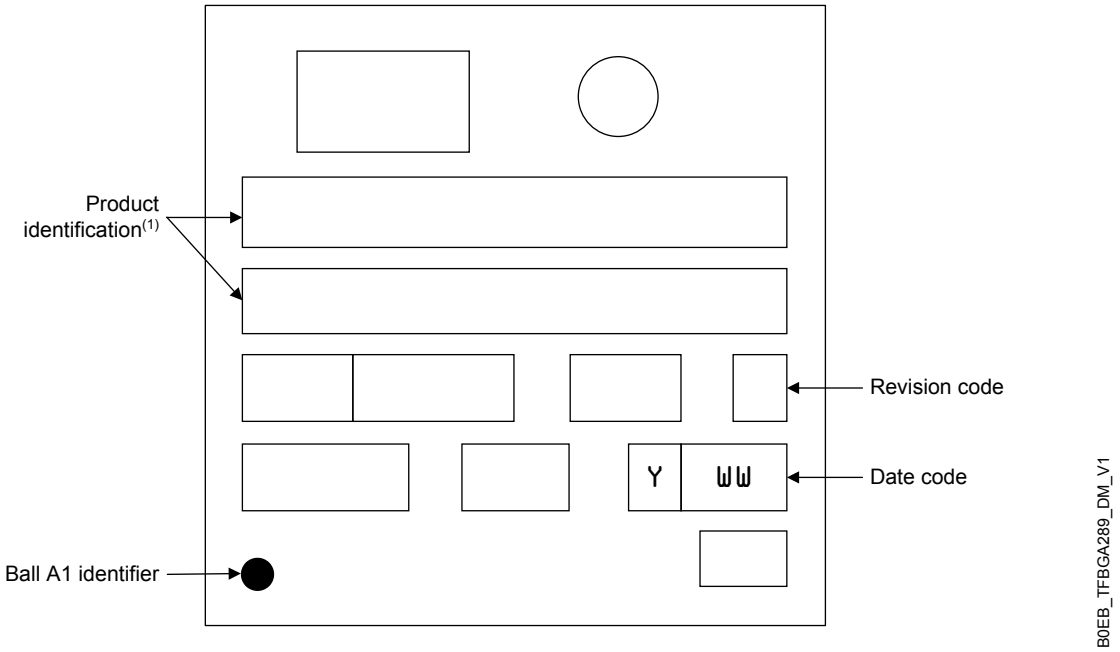
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.8 Device marking for TFBGA289 9 × 9 mm (B0EB)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 45. **TFBGA289 marking example (package top view)**



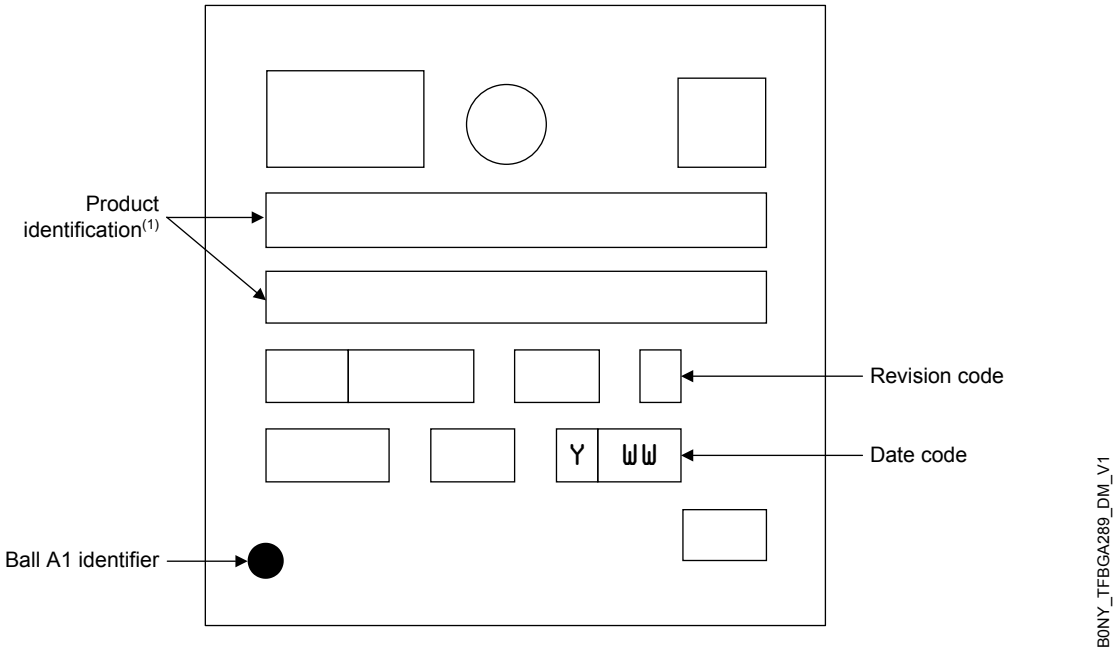
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.9 Device marking for TFBGA289 14 × 14 mm (B0NY)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 46. **TFBGA289 marking example (package top view)**



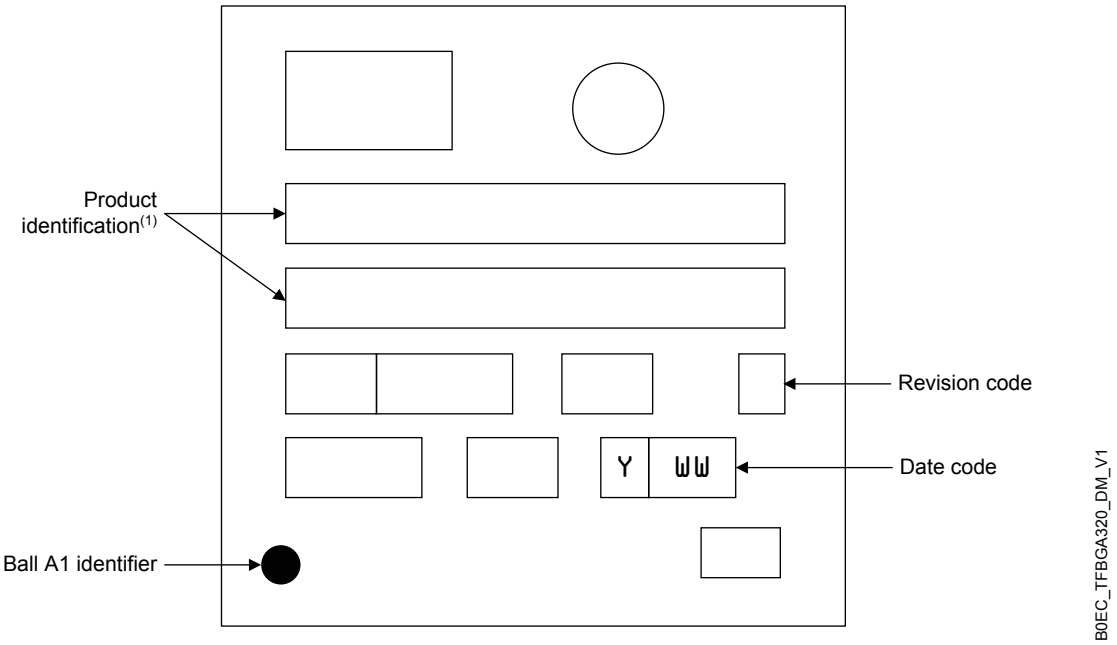
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.10 Device marking for TFBGA320 11 × 11 mm (B0EC)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 47. **TFBGA320 marking example (package top view)**



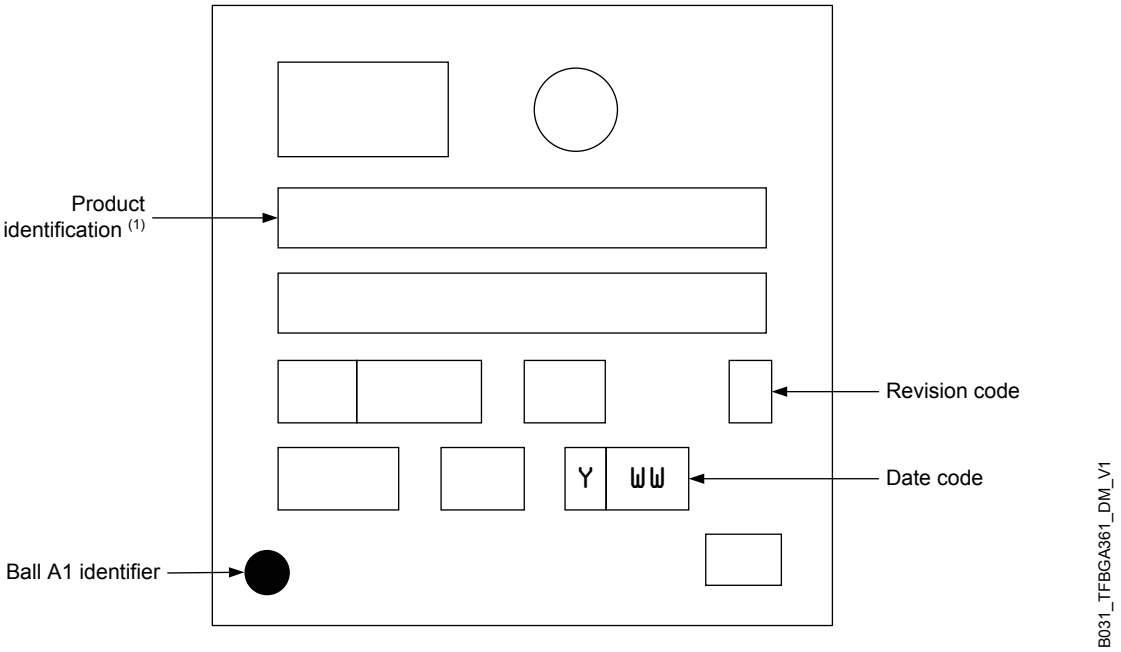
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.11 Device marking for TFBGA361 12 × 12 mm (B031)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 48. **TFBGA361 marking example (package top view)**



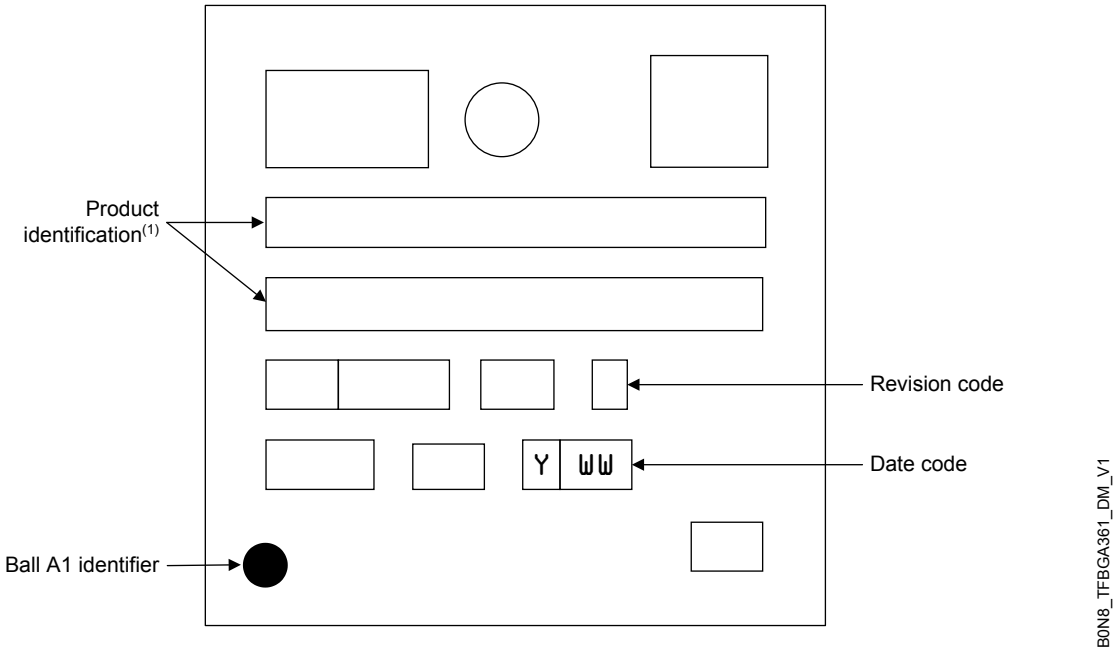
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.12 Device marking for TFBGA361 16 × 16 mm (B0N8)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 49. **TFBGA361 marking example (package top view)**



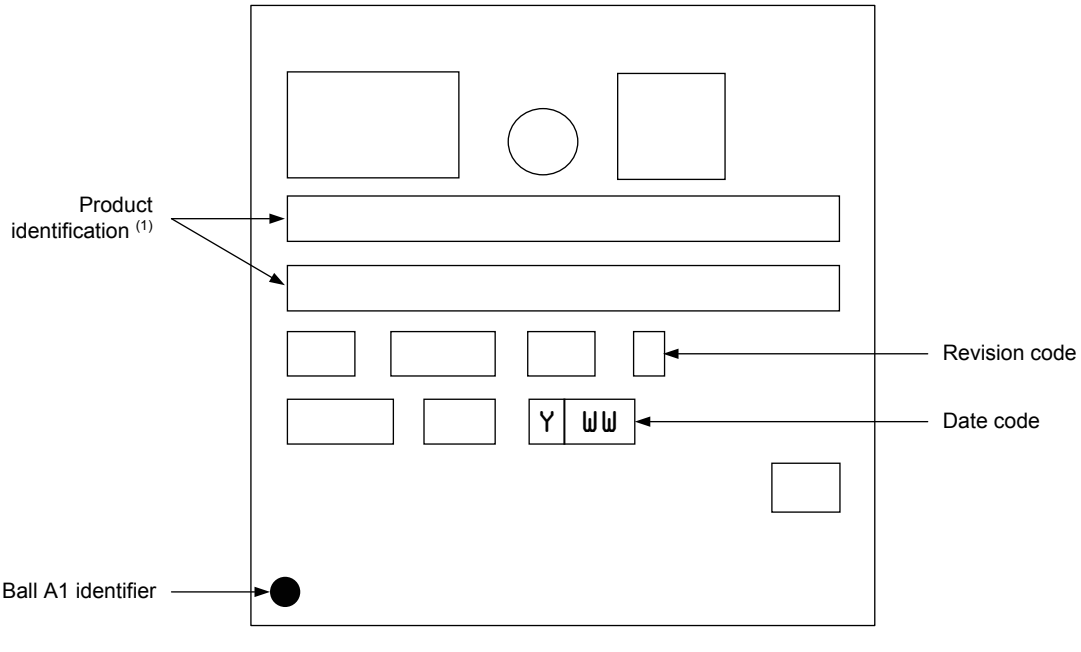
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

9.13 Device marking for TFBGA436 18 × 18 mm (B0D1)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 50. TFBGA436 marking example (package top view)



1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

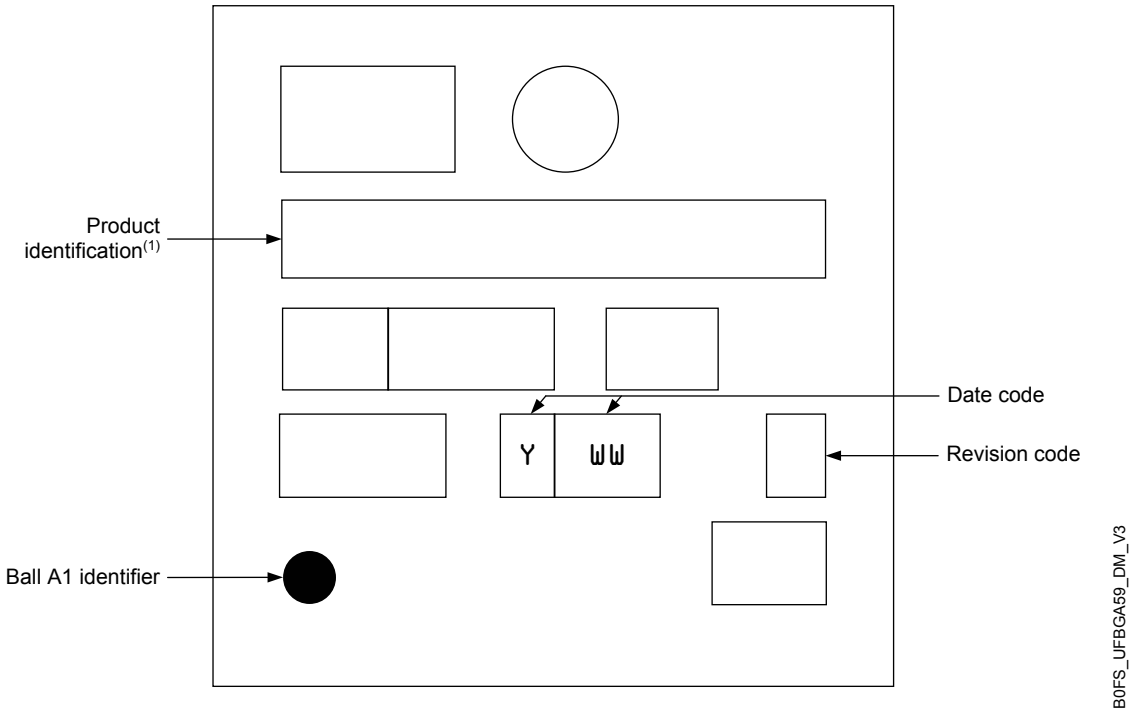
10 Device markings for UFBGA packages

10.1 Device marking for UFBGA59 5 × 5 mm (B0FS)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 51. UFBGA59 marking example (package top view)



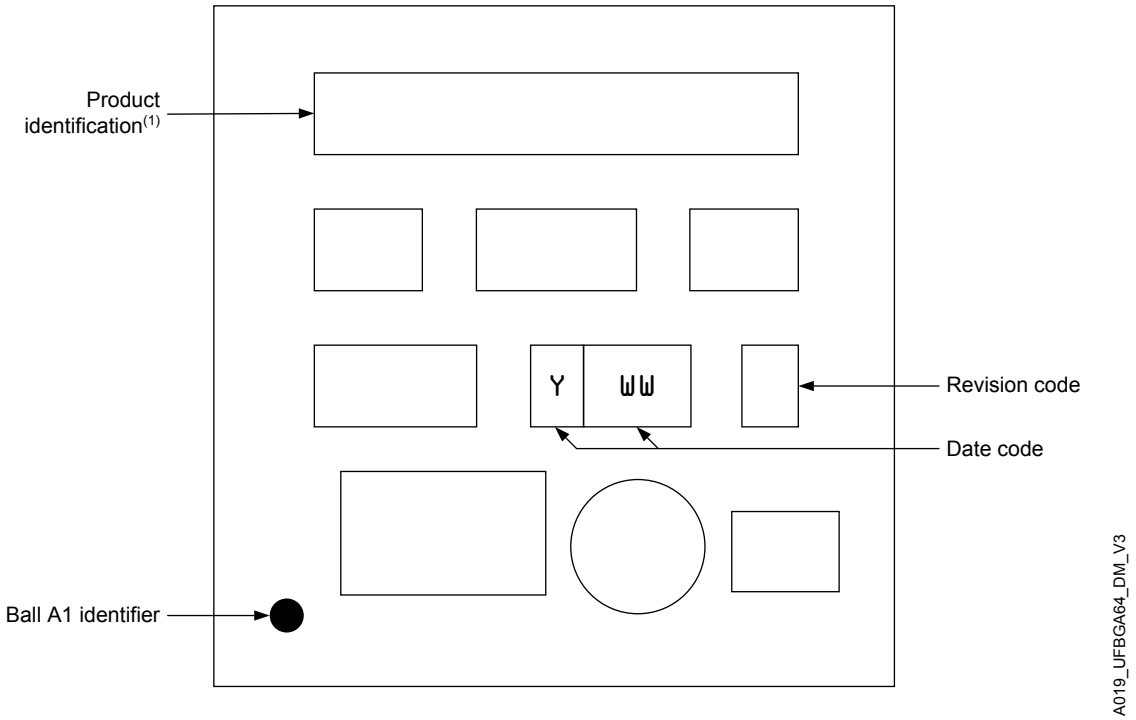
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

10.2 Device marking for UFBGA64 5 × 5 mm (A019)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 52. **UFBGA64 marking example (package top view)**



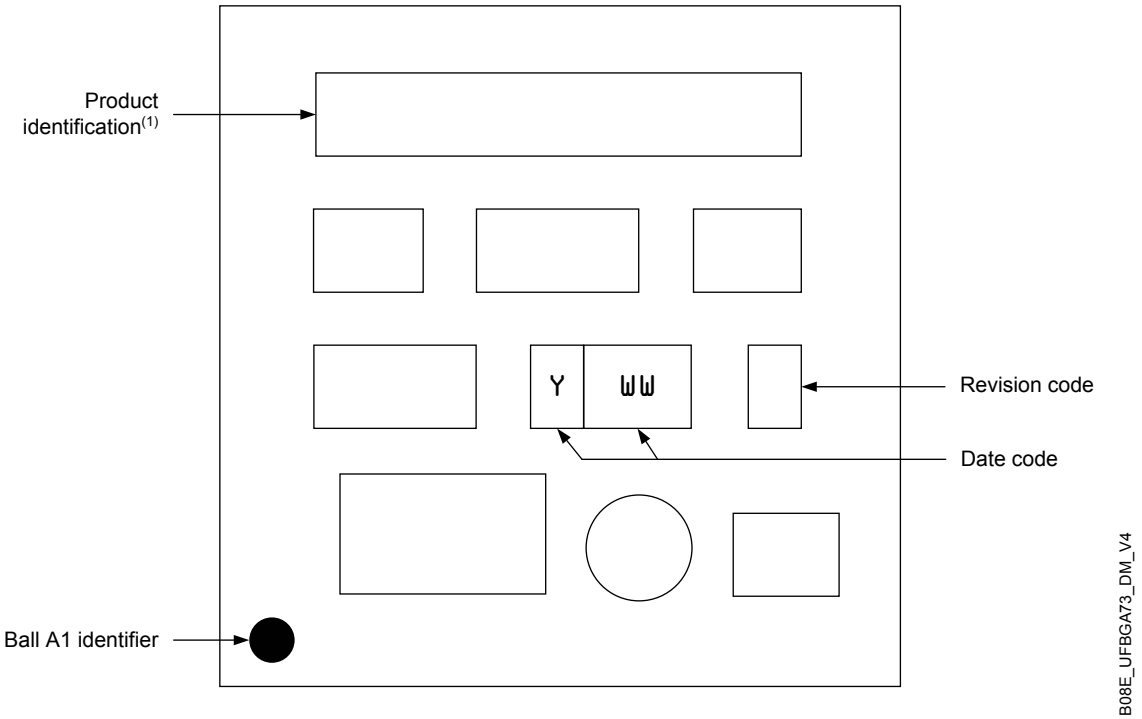
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

10.3 Device marking for UFBGA73 5 × 5 mm (B08E)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 53. **UFBGA73 marking example (package top view)**



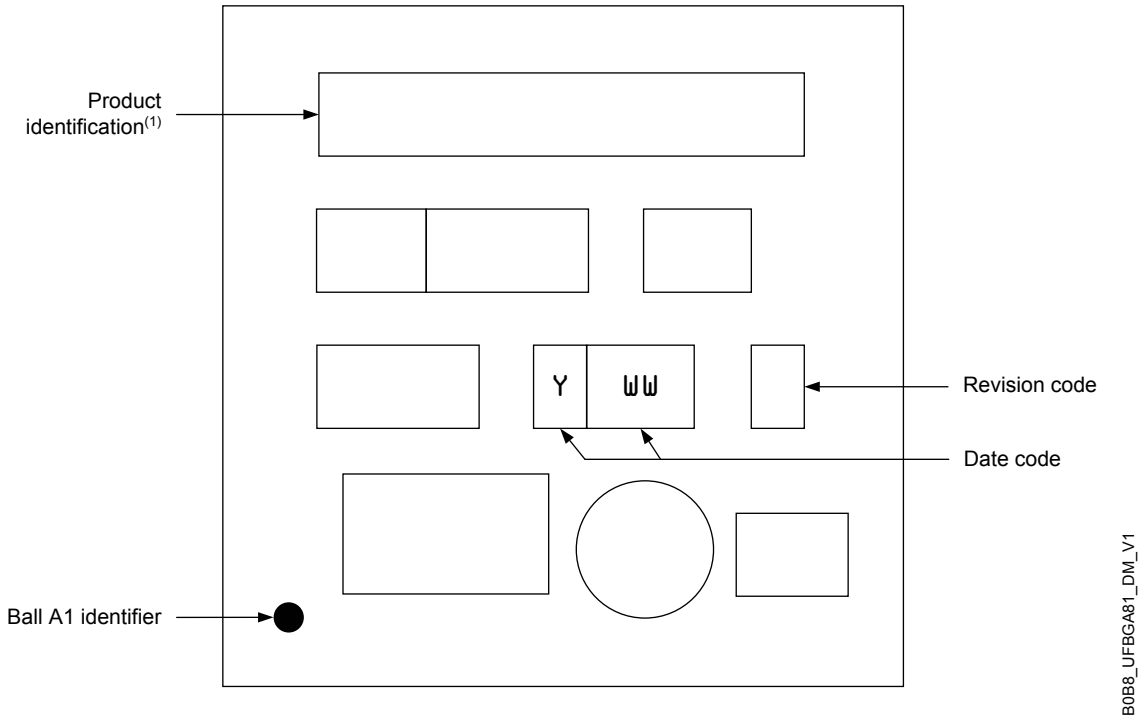
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

10.4 Device marking for UFBGA81 5 × 5 mm (B0B8)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 54. **UFBGA81 marking example (package top view)**



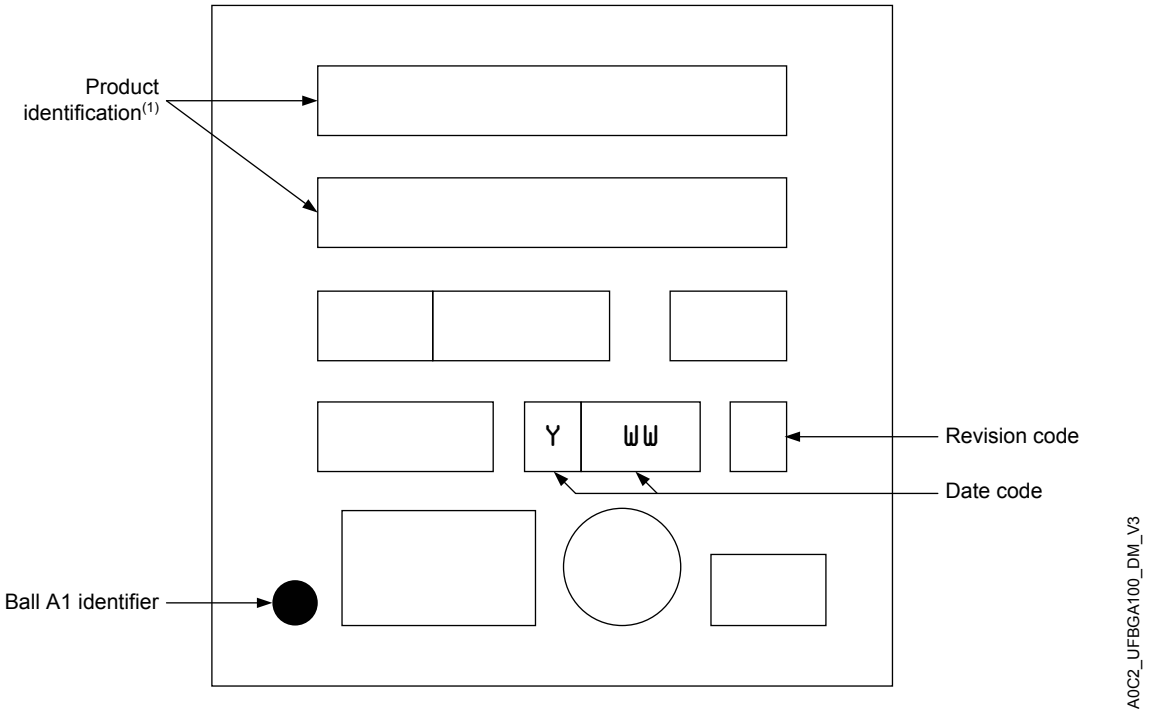
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

10.5 Device marking for UFBGA100 7 × 7 mm (A0C2)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 55. **UFBGA100 marking example (package top view)**



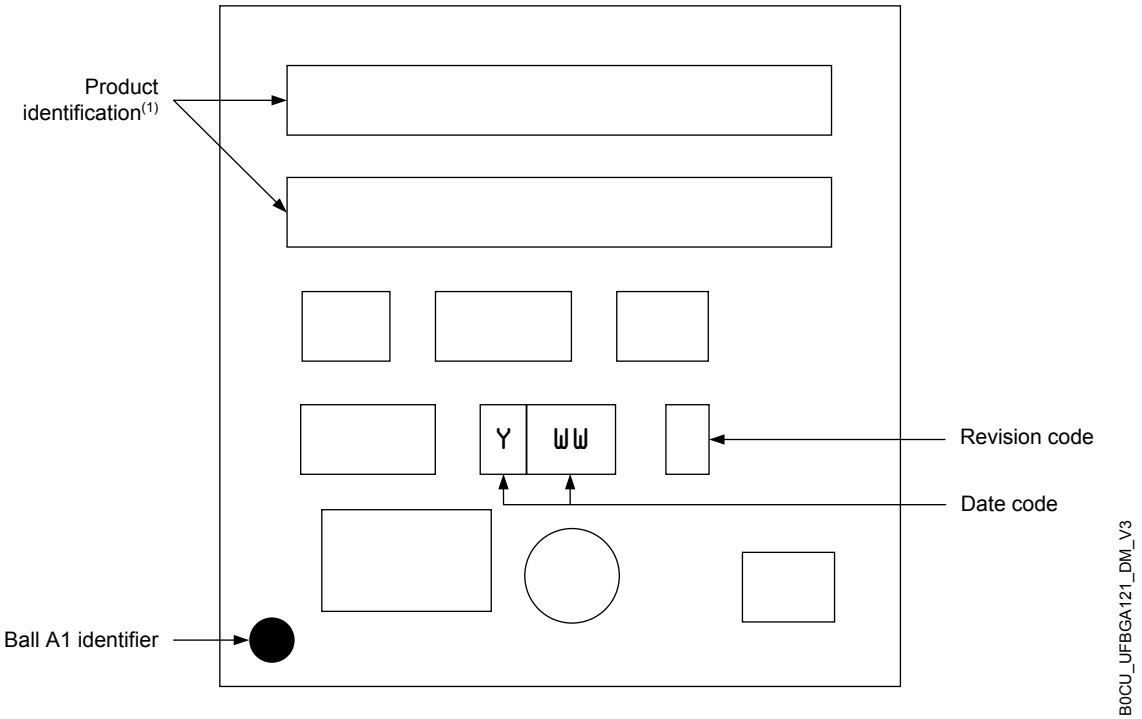
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

10.6 Device marking for UFBGA121 6 × 6 mm (B0CU)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 56. **UFBGA121 marking example (package top view)**



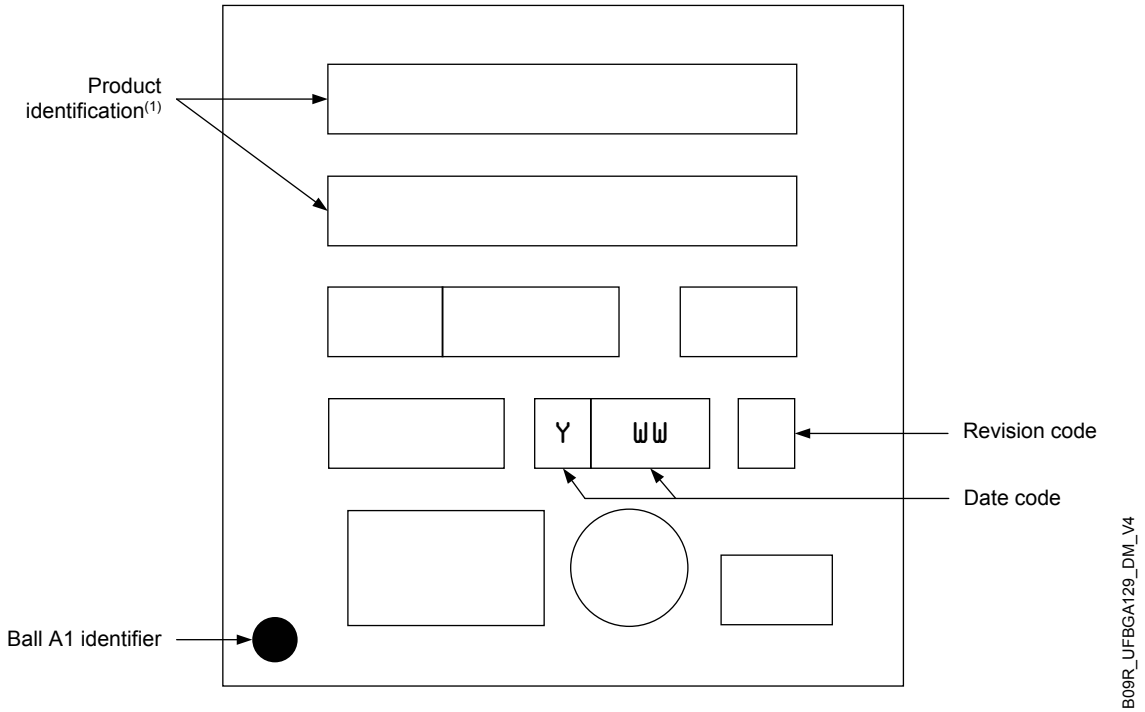
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

10.7 Device marking for UFBGA129 7 × 7 mm (B09R)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 57. **UFBGA129 marking example (package top view)**



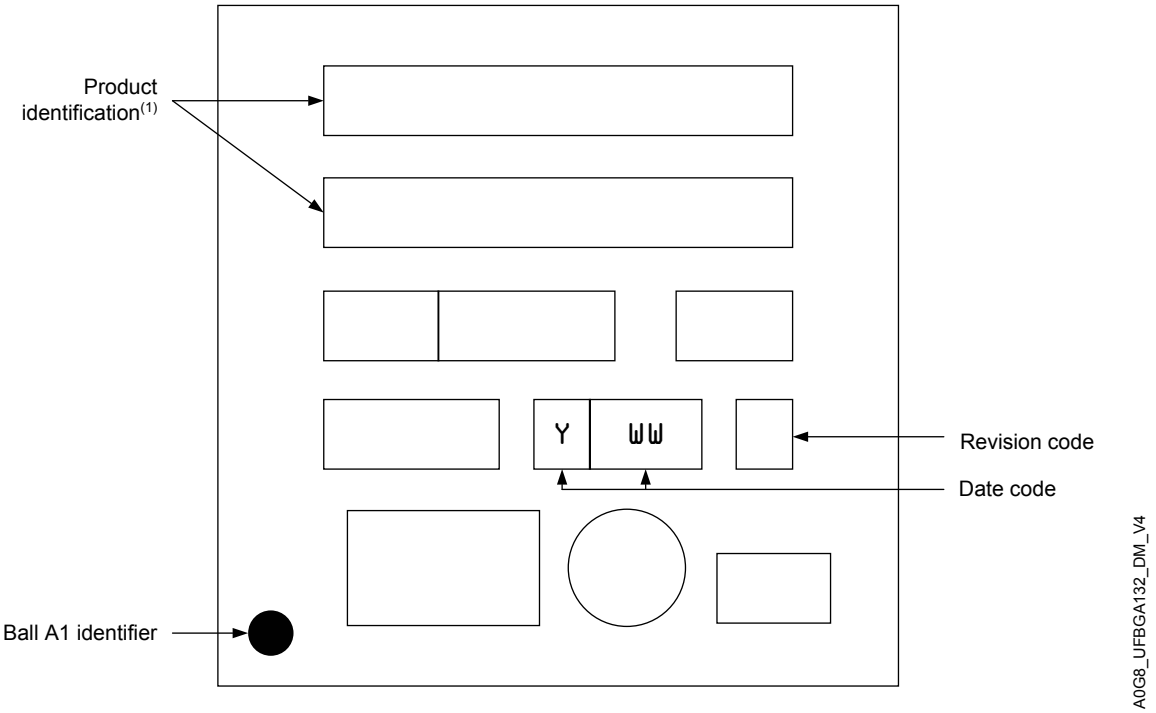
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

10.8 Device marking for UFBGA132 7 × 7 mm (A0G8)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 58. **UFBGA132 marking example (package top view)**



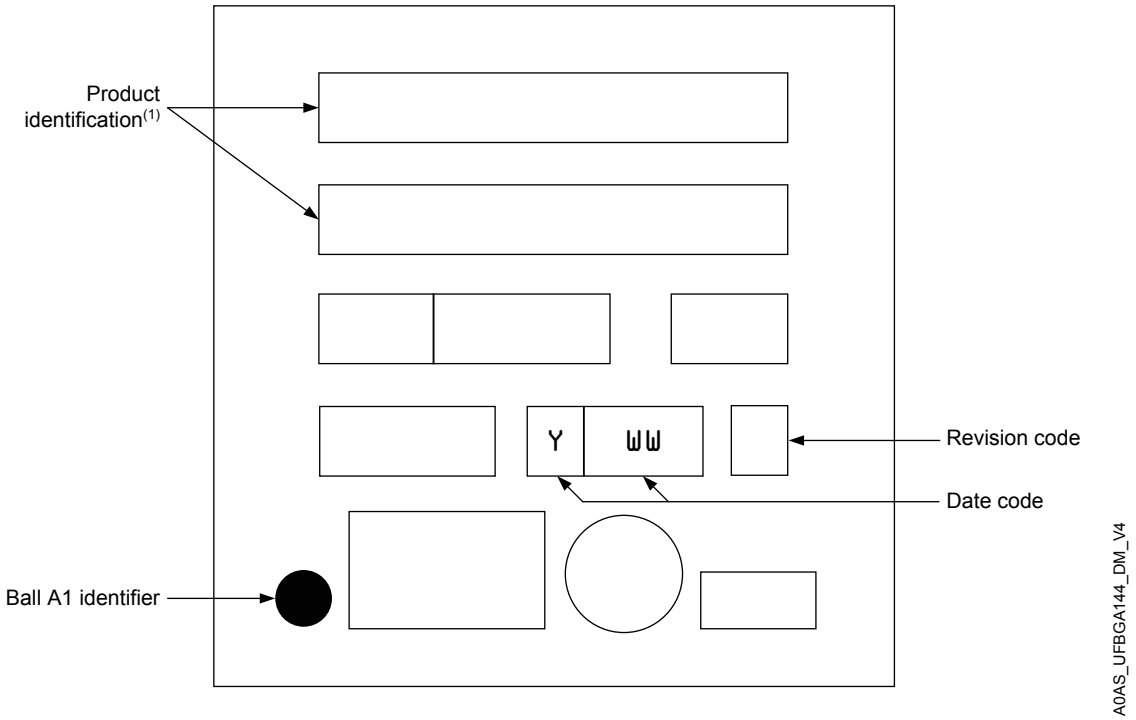
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

10.9 Device marking for UFBGA144 7 × 7 mm (A0AS)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 59. **UFBGA144 marking example (package top view)**



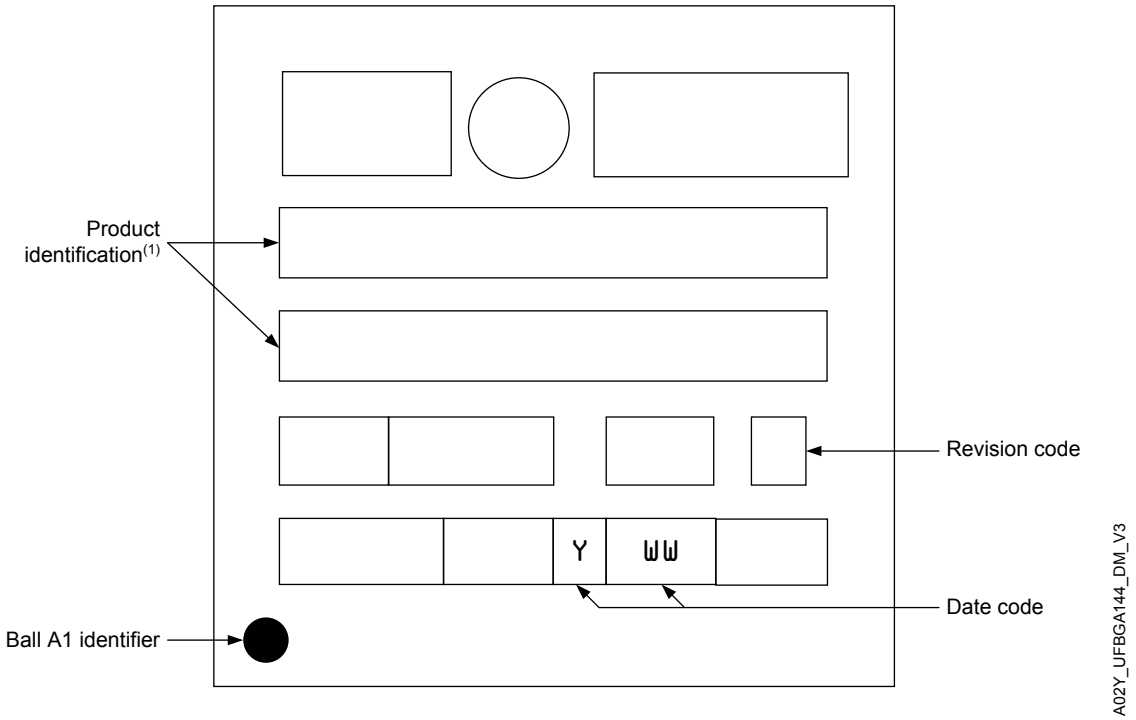
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

10.10 Device marking for UFBGA144 10 × 10 mm (A02Y)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 60. **UFBGA144 marking example (package top view)**



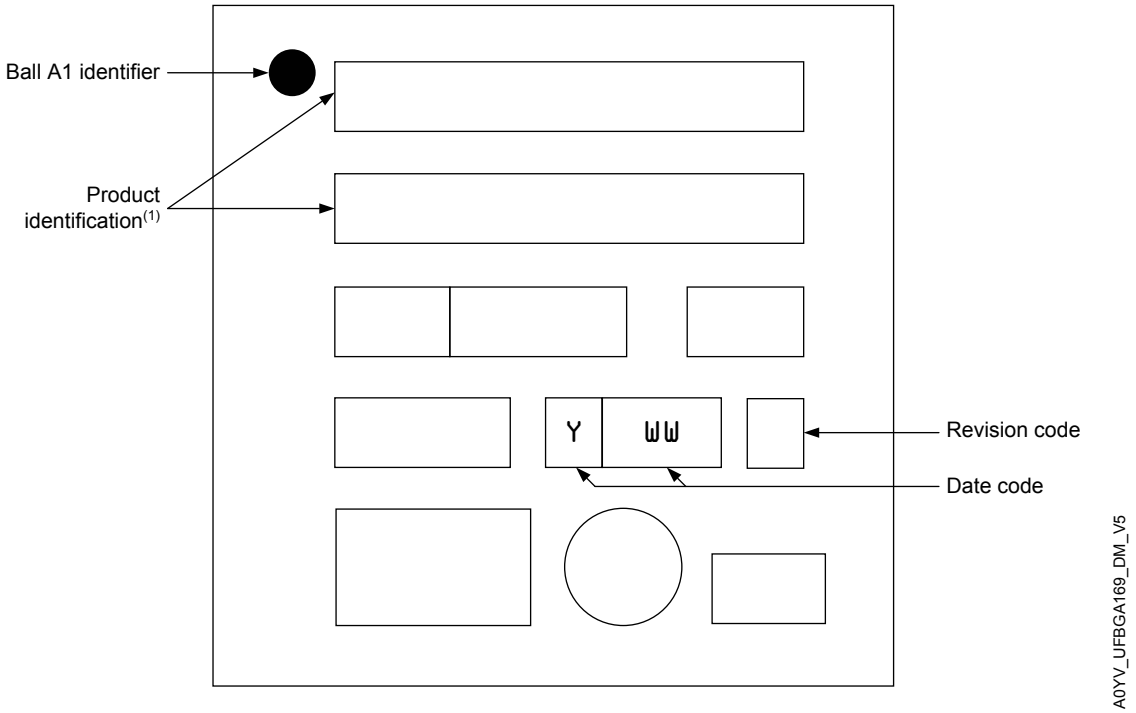
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

10.11 Device marking for UFBGA169 7 × 7 mm (A0YV)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at top left.

Figure 61. **UFBGA169 marking example (package top view)**



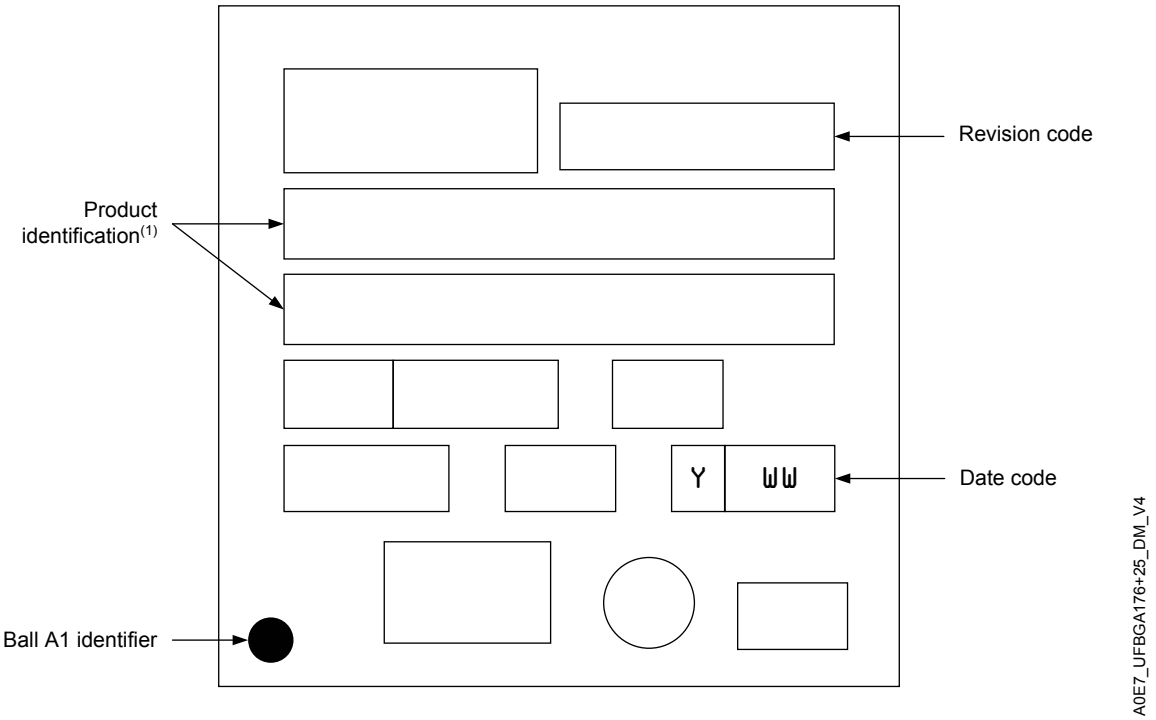
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

10.12 Device marking for UFBGA176+25 10 × 10 mm (A0E7)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 62. UFBGA176+25 marking example (package top view)



1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

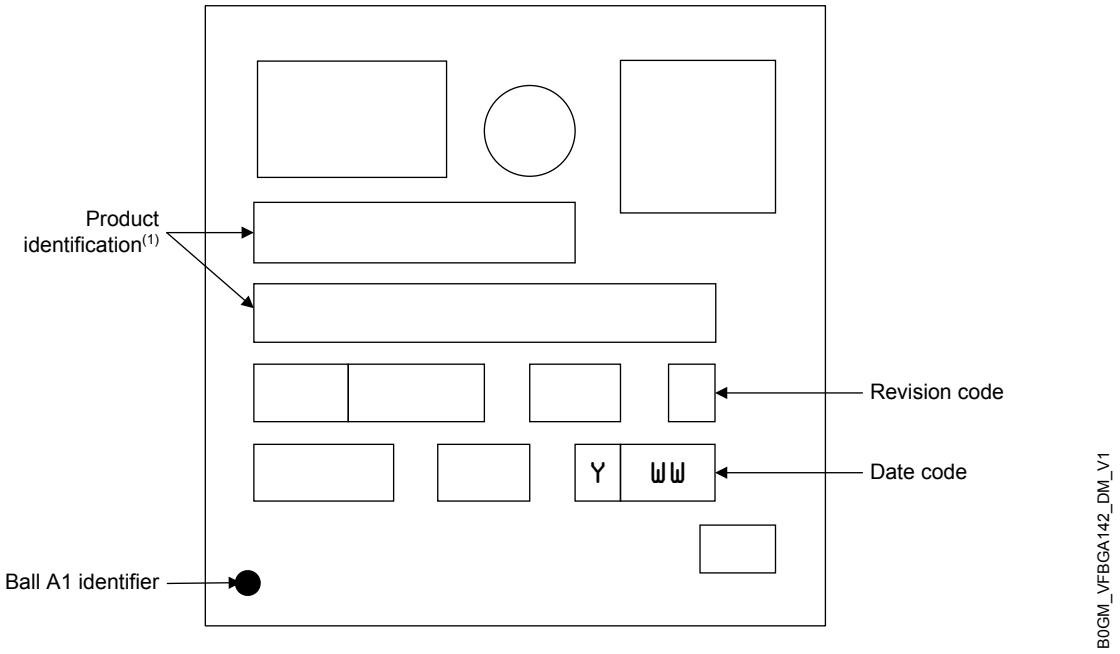
11 Device markings for VFBGA packages

11.1 Device marking for VFBGA142 8 × 8 mm (B0GM)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 63. VFBGA142 marking example (package top view)



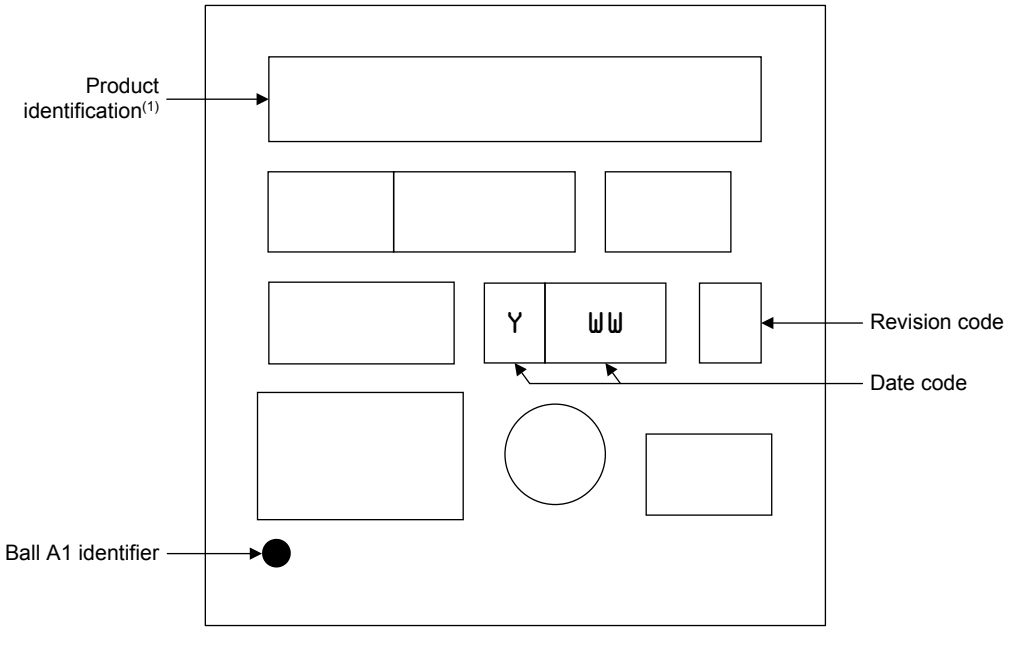
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

11.2 Device marking for VFBGA169 6 × 6 mm (B0LA)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 64. **VFBGA169 marking example (package top view)**



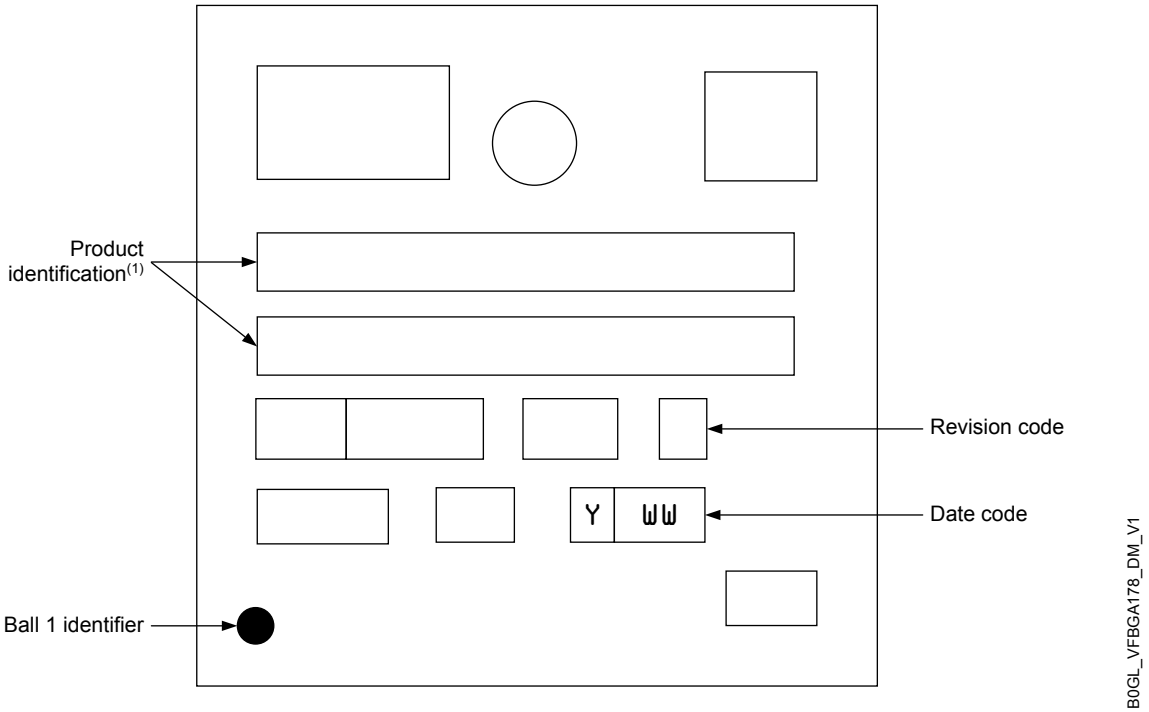
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

11.3 Device marking for VFBGA178 12 × 12 mm (B0GL)

The following figure gives an example of the locations and orientation of the marking areas versus ball 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball 1 is always located at bottom left.

Figure 65. **VFBGA178 marking example (package top view)**



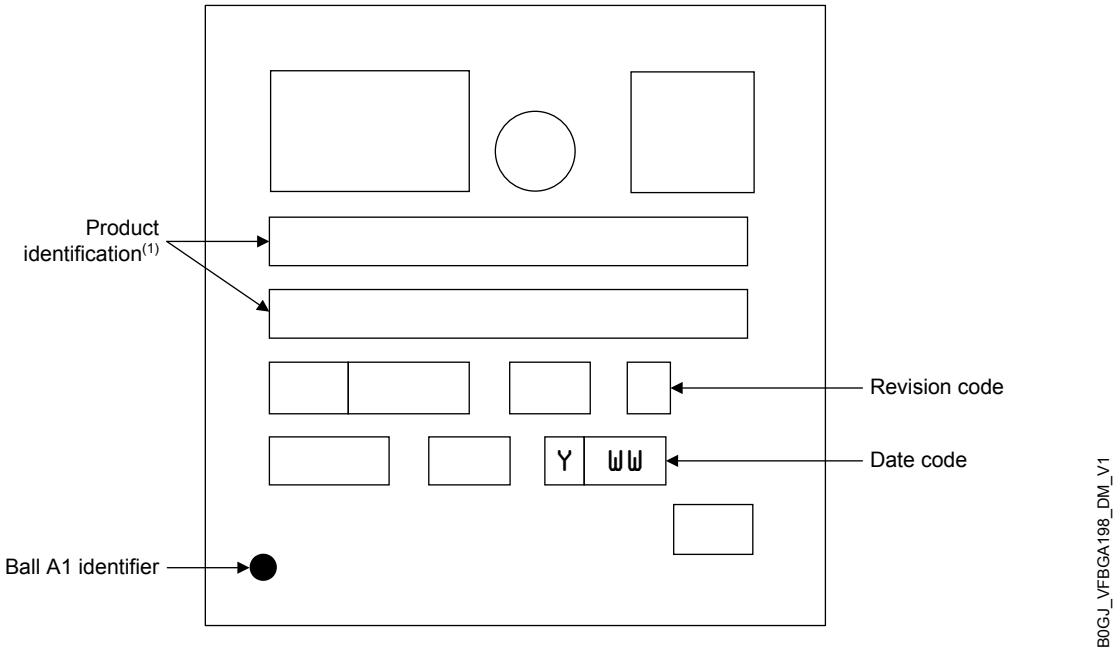
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

11.4 Device marking for VFBGA198 10 × 10 mm (B0GJ)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 66. **VFBGA198 marking example (package top view)**



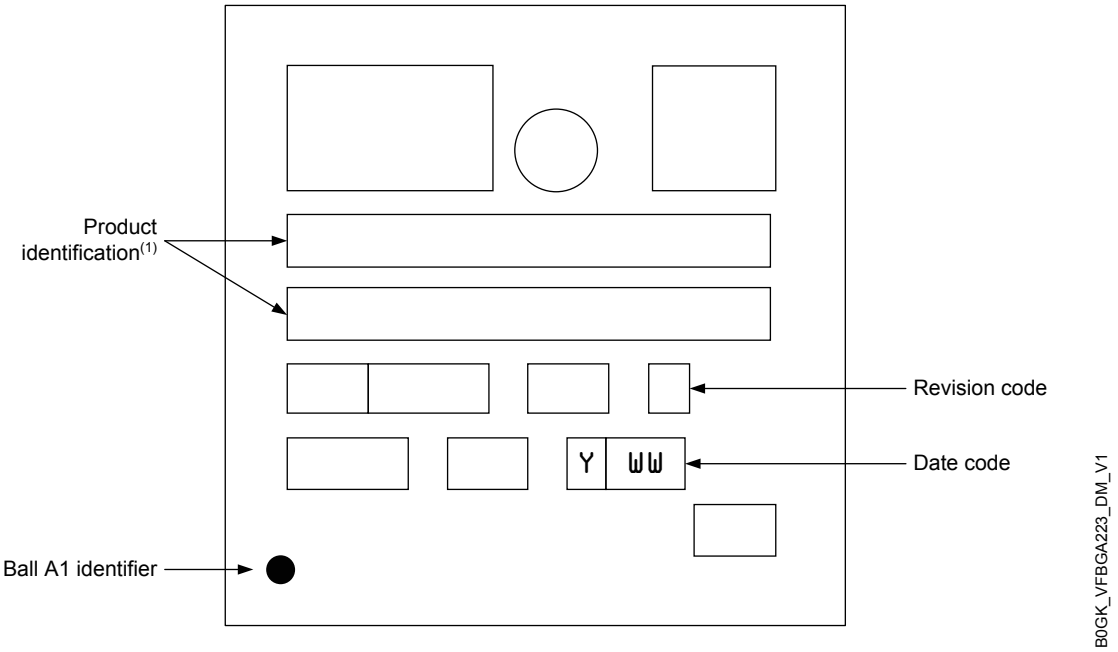
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

11.5 Device marking for VFBGA223 10 × 10 mm (B0GK)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 67. **VFBGA223 marking example (package top view)**



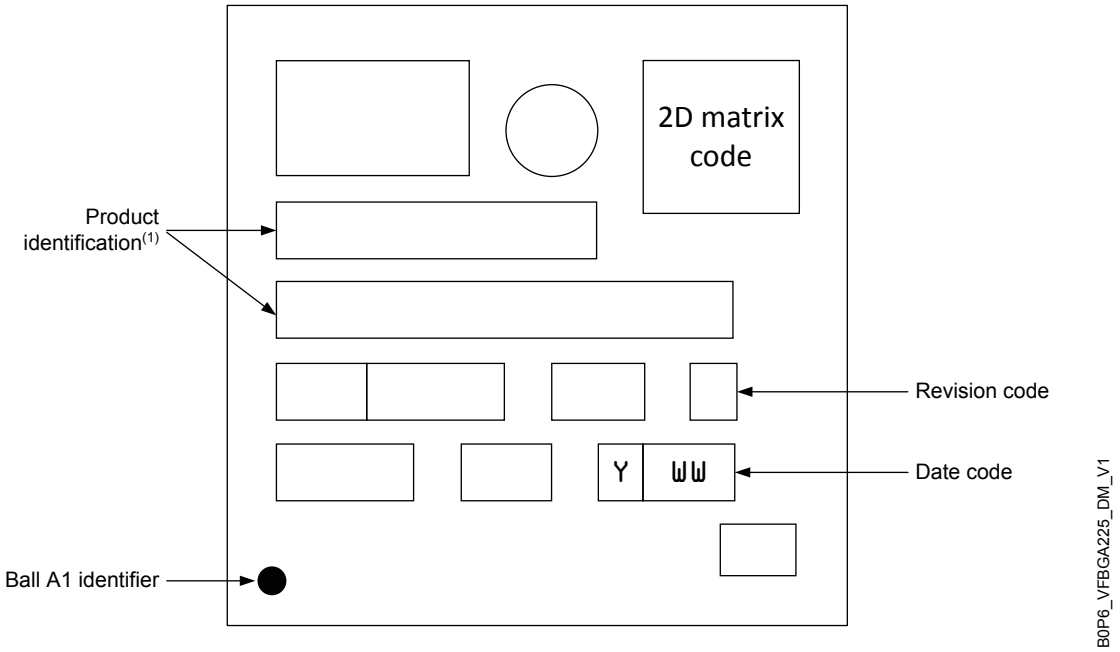
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

11.6 Device marking for VFBGA225 8 × 8 mm (B0P6)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 68. **VFBGA225 marking example (package top view)**



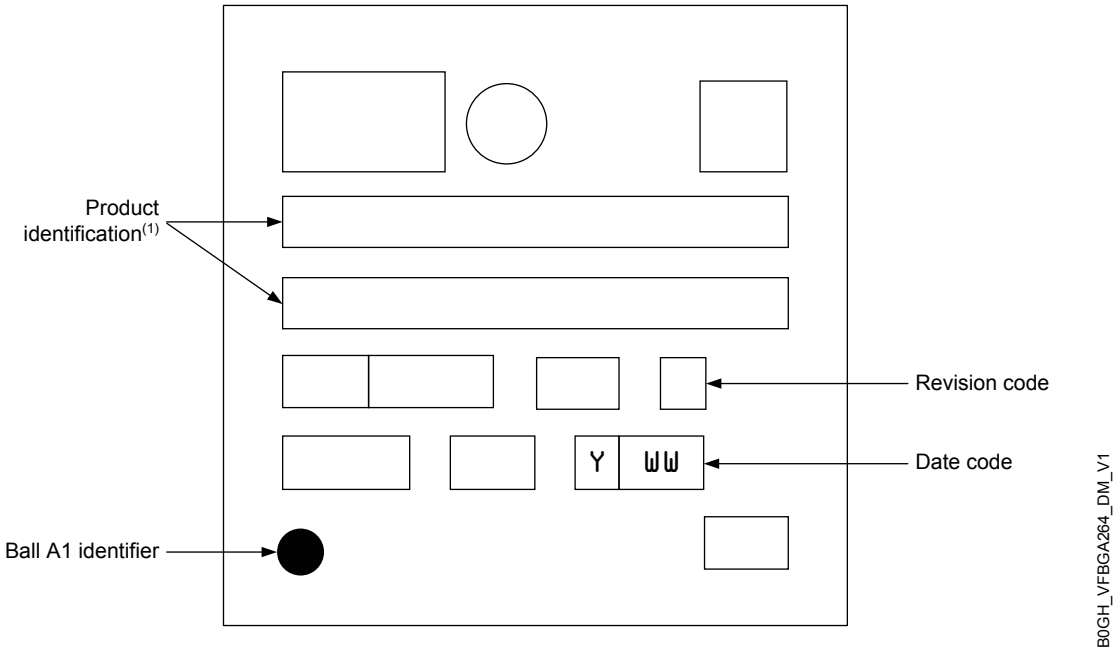
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

11.7 Device marking for VFBGA264 14 × 14 mm (B0GH)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 69. **VFBGA264 marking example (package top view)**



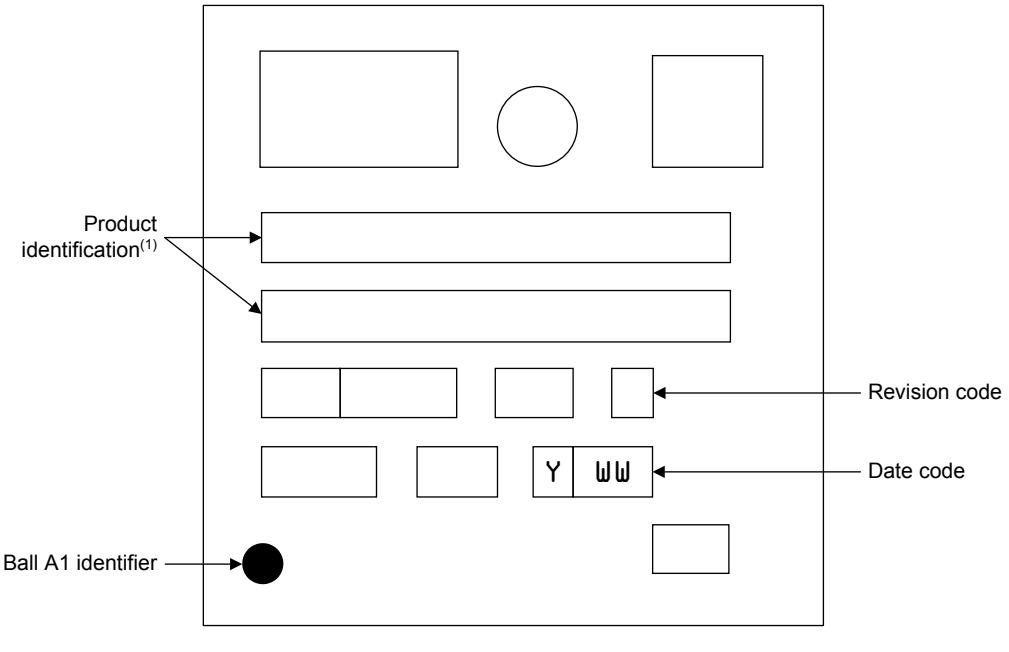
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

11.8 Device marking for VFBGA273 11 × 11 mm (B0P7)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 70. **VFBGA273 marking example (package top view)**



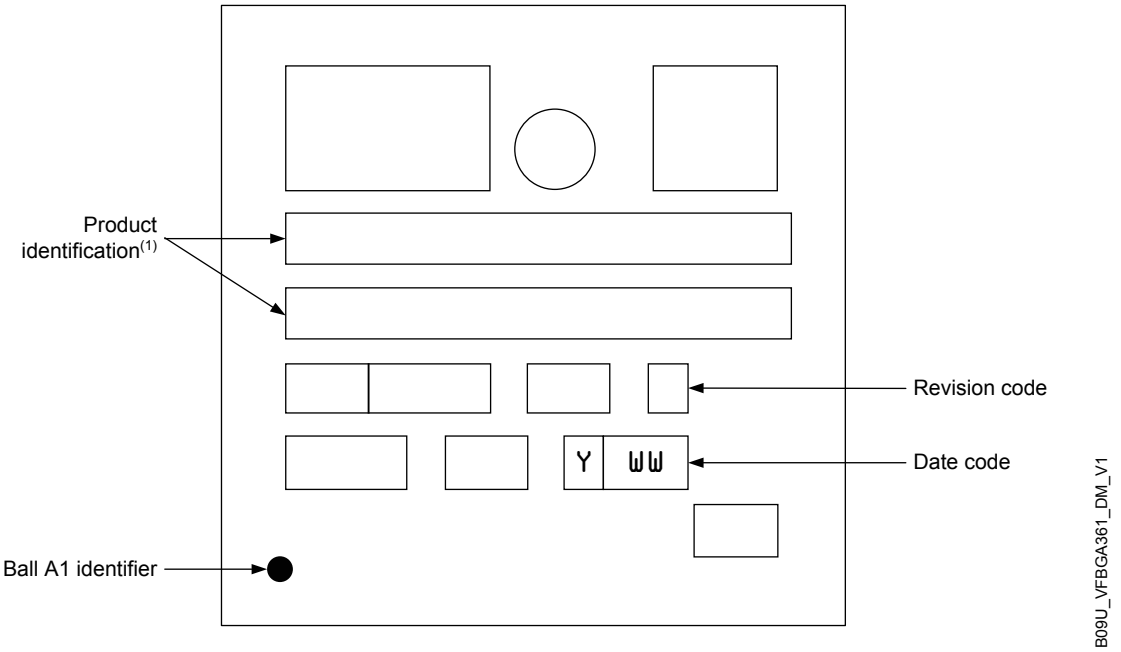
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

11.9 Device marking for VFBGA361 10 × 10 mm (B09U)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 71. **VFBGA361 marking example (package top view)**



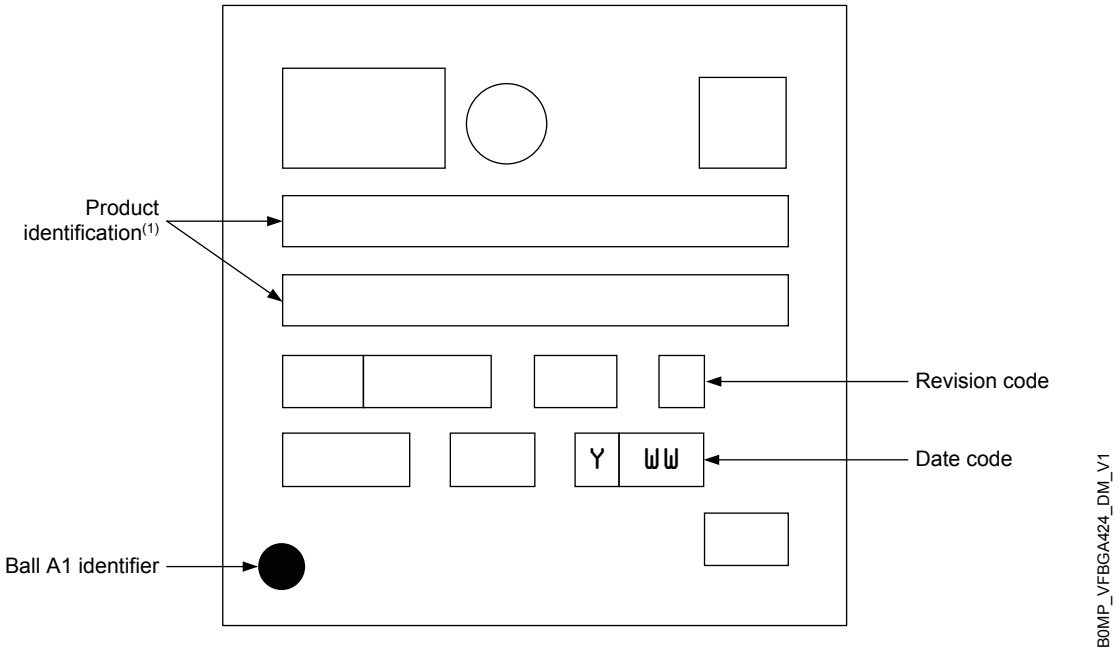
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

11.10 Device marking for VFBGA424 14 × 14 mm (B0MP)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 72. **VFBGA424 marking example (package top view)**



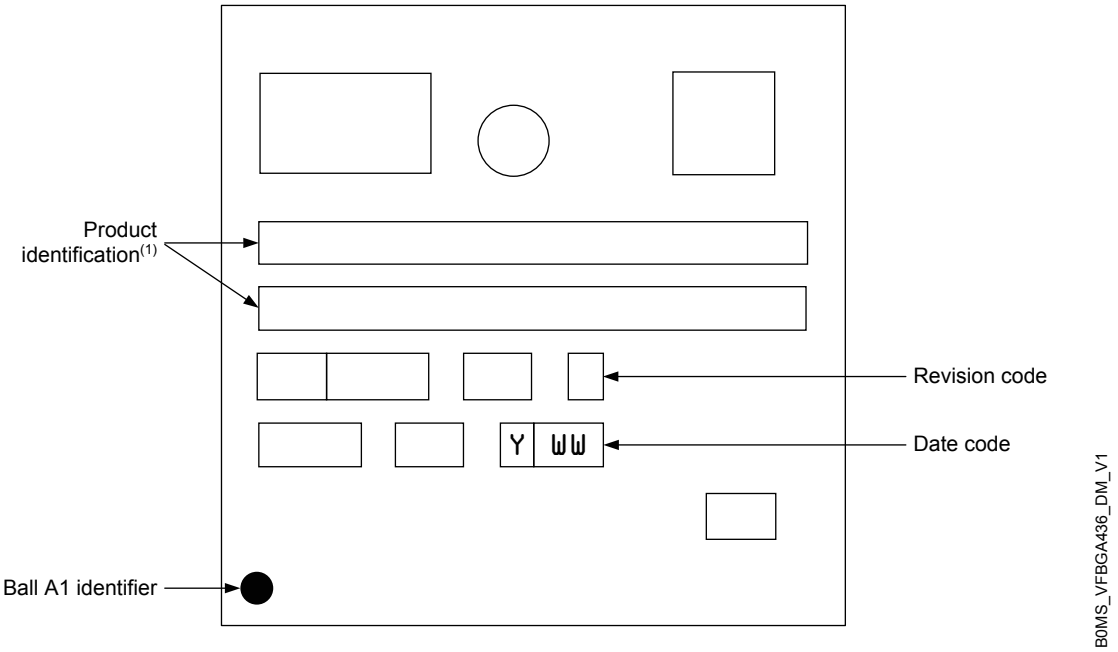
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

11.11 Device marking for VFBGA436 18 × 18 mm (B0MS)

The following figure gives an example of the locations and orientation of the marking areas versus ball A1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, ball A1 is always located at bottom left.

Figure 73. VFBGA436 marking example (package top view)



1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

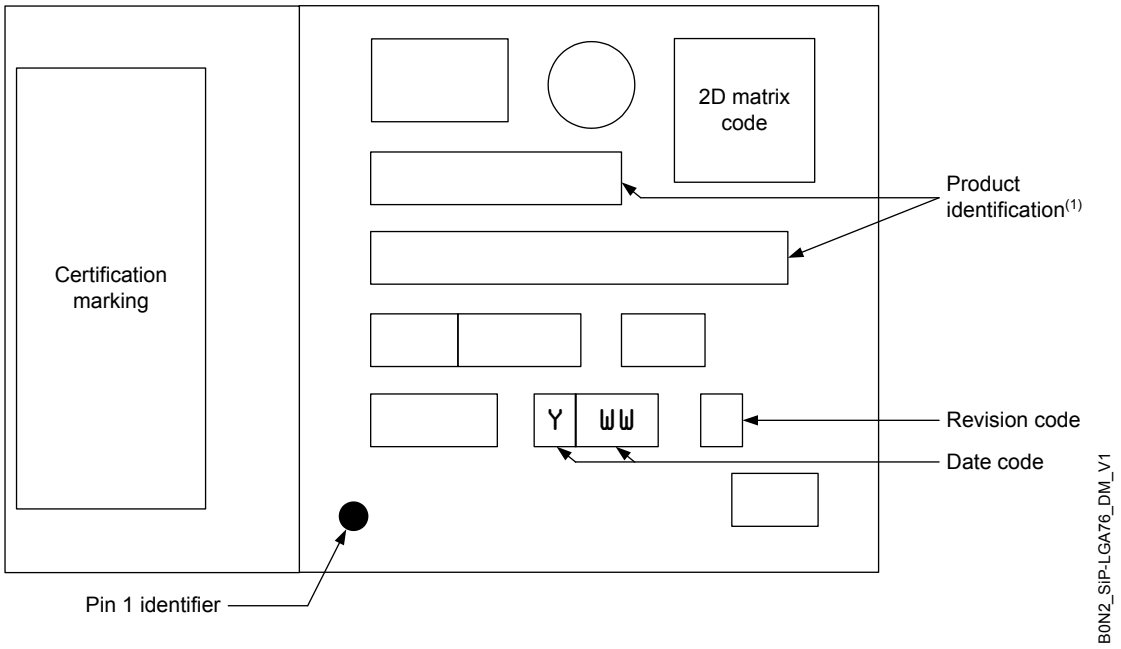
12 Device markings for SiP-LGA packages

12.1 Device marking for SiP-LGA76 8 × 10.5 mm (B0N2)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 74. SiP-LGA76 marking example (package top view)



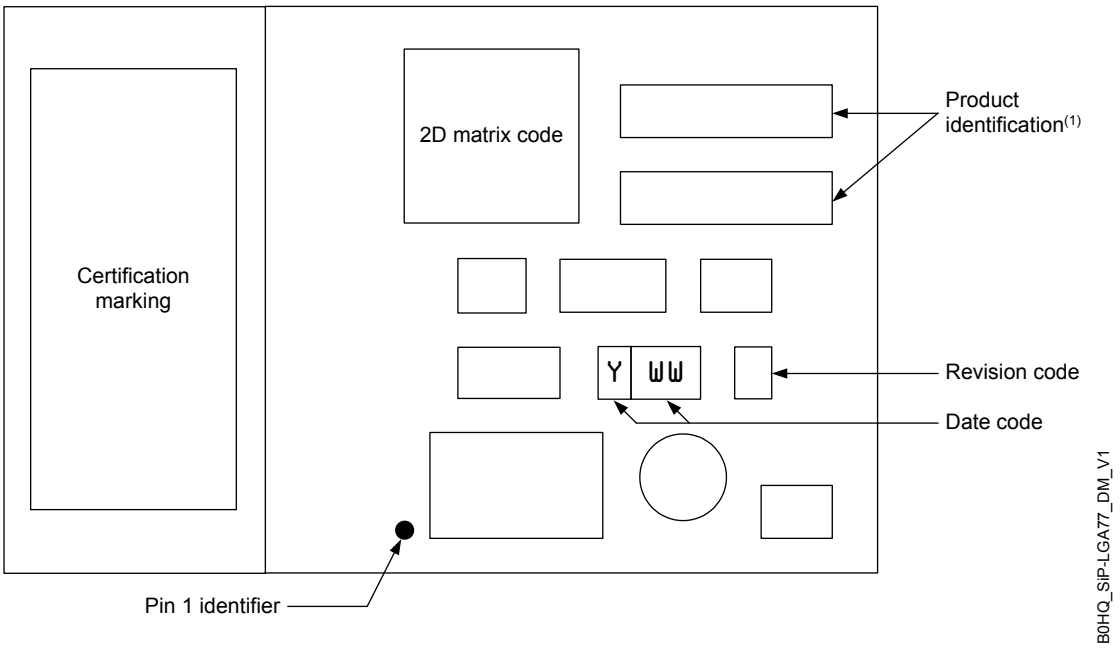
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

12.2 Device marking for SiP-LGA77 6.5 × 10 mm (B0HQ)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 75. **SiP-LGA77 marking example (package top view)**



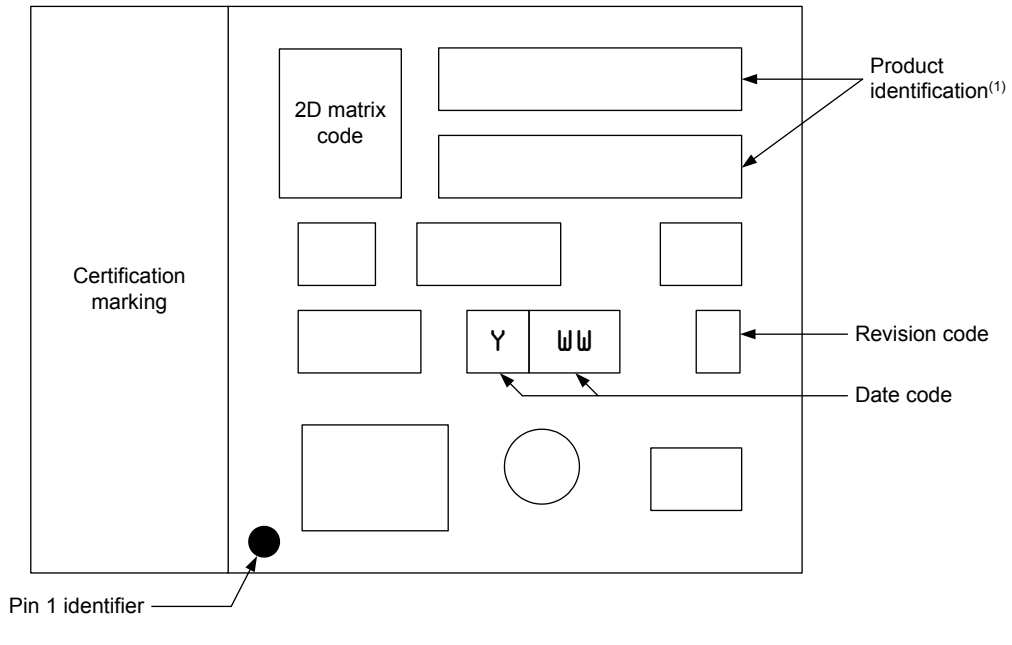
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

12.3 Device marking for SiP-LGA86 7.3 × 11 mm (B0CQ)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 76. **SiP-LGA86 marking example (package top view)**



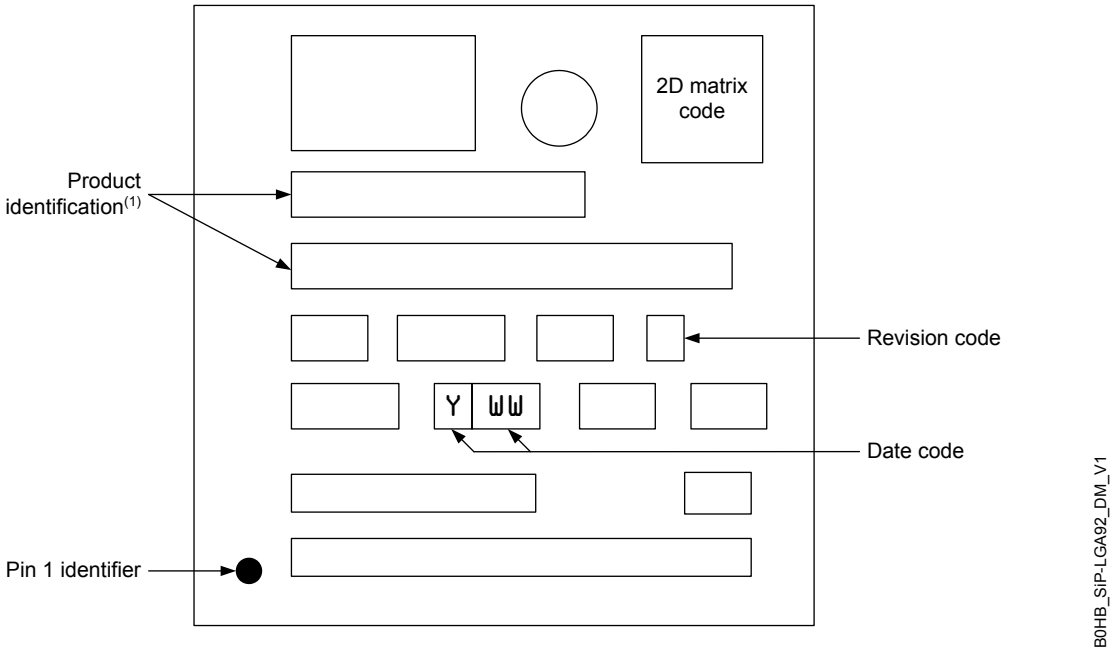
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

12.4 Device marking for SiP-LGA92 10 × 10 mm (B0HB)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 77. **SiP-LGA92 marking example (package top view)**



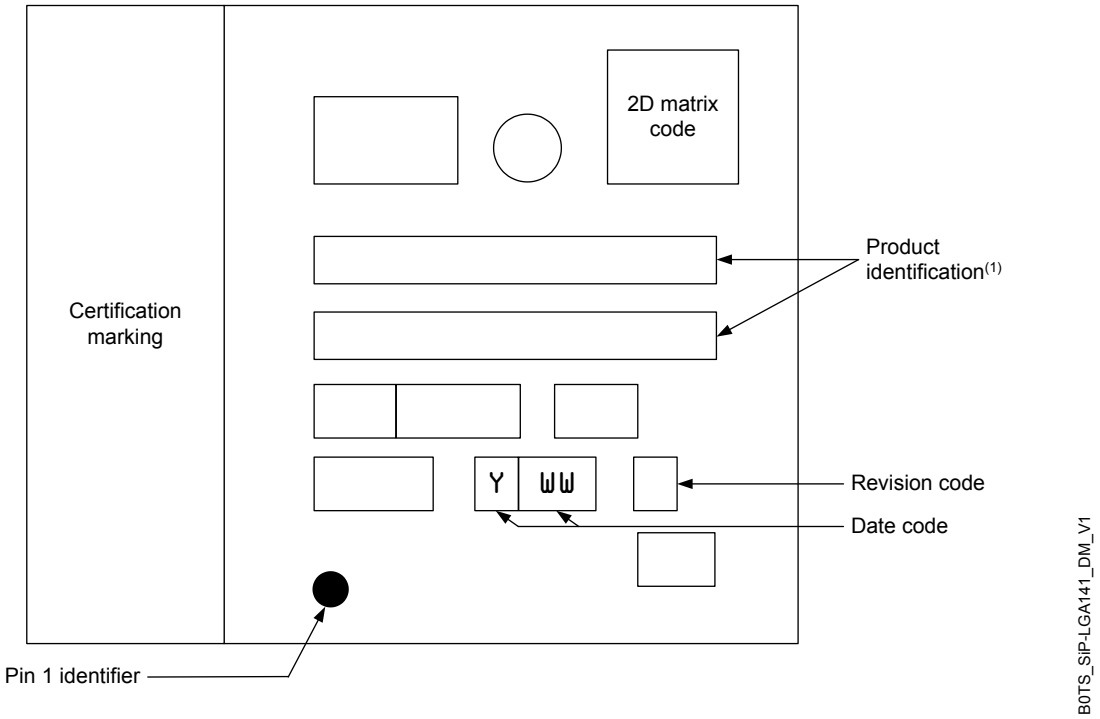
1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

12.5 Device marking for SiP-LGA141 11.1 × 13.4 mm (B0TS)

The following figure gives an example of the locations and orientation of the marking areas versus pin 1 and allows engineering samples to be identified.

With the device text markings oriented as shown below, pin 1 is always located at bottom left.

Figure 78. SiP-LGA141 marking example (package top view)



1. *Parts marked as “ES”, “E” or accompanied by an engineering sample notification letter, are not yet qualified and therefore not approved for use in production. ST is not responsible for any consequences resulting from such use. In no event is ST liable for the customer using any of these engineering samples in production. ST’s Quality department must be contacted prior to any decision to use these engineering samples to run a qualification activity.*

Revision history

Table 1. **Document revision history**

Date	Version	Changes
13-Jan-2023	1	Initial release.
29-Jun-2023	2	The whole document has been updated with the exception of the figures that kept the same index (same vertical text in bottom right corner) as in Rev 1 of the document.
19-Sep-2023	3	Updated Section Introduction . Grouped similar package types into corresponding level 1 sections. Added following device marking sections: • Section 6.6: Device marking for UFQFPN48 6 × 6 mm (A0F2) • Section 7.3: Device marking for VFQFPN48 6 × 6 mm (A0BE) • Section 10.4: Device marking for UFBGA81 5 × 5 mm (B0B8) • Section 11.3: Device marking for VFBGA178 12 × 12 mm (B0GL) • Section 11.5: Device marking for VFBGA223 10 × 10 mm (B0GK) • Section 11.7: Device marking for VFBGA264 14 × 14 mm (B0GH) • Section 12.2: Device marking for SiP-LGA77 6.5 × 10 mm (B0HQ)
22-Apr-2024	4	Added following device marking sections: • Section 11.9: Device marking for VFBGA361 10 × 10 mm (B09U) • Section 11.10: Device marking for VFBGA424 14 × 14 mm (B0MP) • Section 11.11: Device marking for VFBGA436 18 × 18 mm (B0MS)
16-Jul-2024	5	Added following device marking sections: • Section 9.9: Device marking for TFBGA289 14 × 14 mm (B0NY) • Section 9.12: Device marking for TFBGA361 16 × 16 mm (B0N8) • Section 11.2: Device marking for VFBGA169 6 × 6 mm (B0LA) • Section 11.4: Device marking for VFBGA198 10 × 10 mm (B0GJ) • Section 11.8: Device marking for VFBGA273 11 × 11 mm (B0P7)
26-Sep-2025	6	Added following device marking sections: • Section 4.7: Device marking for LQFP80 12 × 12 mm (C03F) • Section 4.10: Device marking for LQFP100 14 × 14 mm (OS) • Section 4.12: Device marking for LQFP128 14 × 14 mm (MT) • Section 5.1: Device marking for TQFP48 7 × 7 mm (ES) • Section 5.2: Device marking for TQFP64 10 × 10 mm (9I) • Section 6.2: Device marking for UFQFPN24 4 × 4 mm (998Z) • Section 11.6: Device marking for VFBGA225 8 × 8 mm (B0P6) • Section 12.1: Device marking for SiP-LGA76 8 × 10.5 mm (B0N2) • Section 12.5: Device marking for SiP-LGA141 11.1 × 13.4 mm (B0TS)
01-Dec-2025	7	Updated following device marking sections: • Section 4.1: Device marking for LQFP32 7 × 7 mm (5V) • Section 4.2: Device marking for LQFP44 10 × 10 mm (4Y) • Section 4.3: Device marking for LQFP48 7 × 7 mm (5B) • Section 4.5: Device marking for LQFP64 14 × 14 mm (1R) • Section 4.6: Device marking for LQFP80 12 × 12 mm (9X) • Section 4.9: Device marking for LQFP100 14 × 14 mm (1L) • Section 4.11: Device marking for LQFP128 14 × 14 mm (TC) • Section 4.13: Device marking for LQFP144 20 × 20 mm (1A) • Section 4.14: Device marking for LQFP176 24 × 24 mm (1T) • Section 4.15: Device marking for LQFP208 28 × 28 mm (UH)

Contents

List of tables

List of figures