



# BAS16VY

## High-speed switching diode

16 July 2026

Product data sheet

### 1. General description

High-speed switching diode, encapsulated in a very small SOT363-3 (SC-88) Surface-Mounted Device (SMD) plastic package.

### 2. Features and benefits

- High switching speed:  $t_{rr} \leq 4$  ns
- Low capacitance
- Low leakage current
- Reverse voltage:  $V_R \leq 100$  V
- Repetitive peak reverse voltage:  $V_{RRM} \leq 100$  V

### 3. Applications

- High-speed switching
- General-purpose switching

### 4. Quick reference data

Table 1. Quick reference data

| Symbol           | Parameter             | Conditions                                                                                                | Min | Typ | Max | Unit    |
|------------------|-----------------------|-----------------------------------------------------------------------------------------------------------|-----|-----|-----|---------|
| <b>Per diode</b> |                       |                                                                                                           |     |     |     |         |
| $V_R$            | reverse voltage       |                                                                                                           | -   | -   | 100 | V       |
| $I_R$            | reverse current       | $V_R = 80$ V                                                                                              | -   | -   | 0.5 | $\mu$ A |
| $t_{rr}$         | reverse recovery time | $I_F = 10$ mA; $I_R = 10$ mA; $R_L = 100$ $\Omega$ ;<br>$I_{R(meas)} = 1$ mA; $T_{amb} = 25$ $^{\circ}$ C | -   | -   | 4   | ns      |

### 5. Pinning information

Table 2. Pinning information

| Pin | Symbol | Description       | Simplified outline                                           | Graphic symbol   |
|-----|--------|-------------------|--------------------------------------------------------------|------------------|
| 1   | A1     | anode (diode 1)   | <p>Transparent<br/>top view<br/><b>TSSOP6 (SOT363-3)</b></p> | <p>006aab106</p> |
| 2   | A2     | anode (diode 2)   |                                                              |                  |
| 3   | A3     | anode (diode 3)   |                                                              |                  |
| 4   | K3     | cathode (diode 3) |                                                              |                  |
| 5   | K2     | cathode (diode 2) |                                                              |                  |
| 6   | K1     | cathode (diode 1) |                                                              |                  |

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6. Ordering information

Table 3. Ordering information

| Type number | Package |                                          |          |
|-------------|---------|------------------------------------------|----------|
|             | Name    | Description                              | Version  |
| BAS16VY     | TSSOP6  | Plastic surface-mounted package; 6 leads | SOT363-3 |

7. Marking

Table 4. Marking codes

| Type number | Marking code[1] |
|-------------|-----------------|
| BAS16VY     | 16%             |

[1] % = placeholder for manufacturing site code

8. Limiting values

Table 5. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

| Symbol           | Parameter                           | Conditions                                                       |             | Min | Max | Unit |
|------------------|-------------------------------------|------------------------------------------------------------------|-------------|-----|-----|------|
| Per diode        |                                     |                                                                  |             |     |     |      |
| V <sub>RRM</sub> | repetitive peak reverse voltage     |                                                                  |             | -   | 100 | V    |
| V <sub>R</sub>   | reverse voltage                     |                                                                  |             | -   | 100 | V    |
| I <sub>F</sub>   | forward current                     |                                                                  | [1] [2]     | -   | 200 | mA   |
| I <sub>FSM</sub> | non-repetitive peak forward current | t <sub>p</sub> = 1 μs; square wave; T <sub>j(init)</sub> = 25 °C |             | -   | 4   | A    |
|                  |                                     | t <sub>p</sub> = 1 ms; square wave; T <sub>j(init)</sub> = 25 °C |             | -   | 1   | A    |
|                  |                                     | t <sub>p</sub> = 1 s; square wave; T <sub>j(init)</sub> = 25 °C  |             | -   | 0.5 | A    |
| I <sub>FRM</sub> | repetitive peak forward current     | t <sub>p</sub> ≤ 0.5 ms; δ ≤ 0.25                                |             | -   | 500 | mA   |
| P <sub>tot</sub> | total power dissipation             | T <sub>sp</sub> ≤ 85 °C                                          | [1] [2] [3] | -   | 250 | mW   |
| Per device       |                                     |                                                                  |             |     |     |      |
| T <sub>j</sub>   | junction temperature                |                                                                  |             | -   | 150 | °C   |
| T <sub>amb</sub> | ambient temperature                 |                                                                  |             | -65 | 150 | °C   |
| T <sub>stg</sub> | storage temperature                 |                                                                  |             | -65 | 150 | °C   |

[1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

[2] Single diode loaded.

[3] Soldering points at pins 4, 5 and 6.

9. Thermal characteristics

Table 6. Thermal characteristics

| Symbol                | Parameter                                        | Conditions |         | Min | Typ | Max | Unit |
|-----------------------|--------------------------------------------------|------------|---------|-----|-----|-----|------|
| R <sub>th(j-sp)</sub> | thermal resistance from junction to solder point |            | [1] [2] | -   | -   | 260 | K/W  |

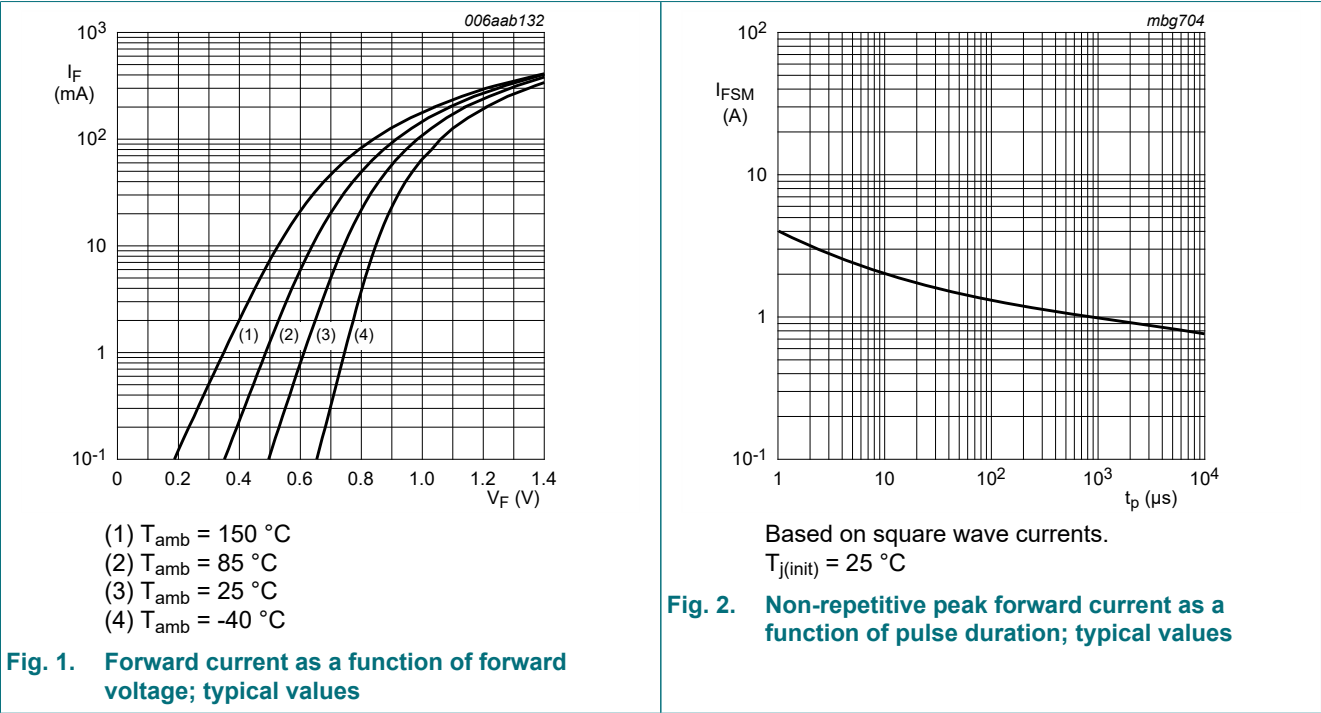
[1] Single diode loaded.

[2] Soldering points at pins 4, 5 and 6.

10. Characteristics

Table 7. Characteristics

| Symbol           | Parameter                     | Conditions                                                                                                                    | Min | Typ | Max  | Unit |
|------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----|-----|------|------|
| Per diode        |                               |                                                                                                                               |     |     |      |      |
| V <sub>F</sub>   | forward voltage               | I <sub>F</sub> = 1 mA; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C                                            | -   | -   | 715  | mV   |
|                  |                               | I <sub>F</sub> = 10 mA; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C                                           | -   | -   | 855  | mV   |
|                  |                               | I <sub>F</sub> = 50 mA; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C                                           | -   | -   | 1    | V    |
|                  |                               | I <sub>F</sub> = 150 mA; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C                                          | -   | -   | 1.25 | V    |
| I <sub>R</sub>   | reverse current               | V <sub>R</sub> = 25 V                                                                                                         | -   | -   | 30   | nA   |
|                  |                               | V <sub>R</sub> = 80 V                                                                                                         | -   | -   | 0.5  | μA   |
|                  |                               | V <sub>R</sub> = 25 V; T <sub>j</sub> = 150 °C                                                                                | -   | -   | 30   | μA   |
|                  |                               | V <sub>R</sub> = 80 V; T <sub>j</sub> = 150 °C                                                                                | -   | -   | 50   | μA   |
| C <sub>d</sub>   | diode capacitance             | V <sub>R</sub> = 0 V; f = 1 MHz; T <sub>amb</sub> = 25 °C                                                                     | -   | -   | 1.5  | pF   |
| t <sub>rr</sub>  | reverse recovery time         | I <sub>F</sub> = 10 mA; I <sub>R</sub> = 10 mA; R <sub>L</sub> = 100 Ω; I <sub>R(meas)</sub> = 1 mA; T <sub>amb</sub> = 25 °C | -   | -   | 4    | ns   |
| V <sub>FRM</sub> | peak forward recovery voltage | I <sub>F</sub> = 10 mA; t <sub>r</sub> = 20 ns; T <sub>amb</sub> = 25 °C                                                      | -   | -   | 1.75 | V    |



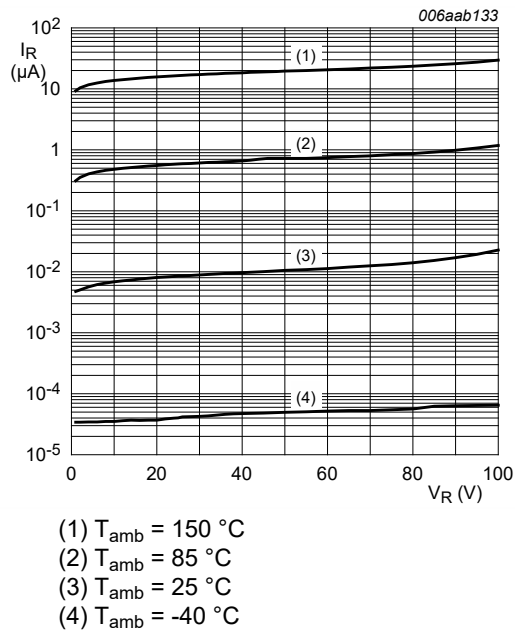


Fig. 3. Reverse current as a function of reverse voltage; typical values

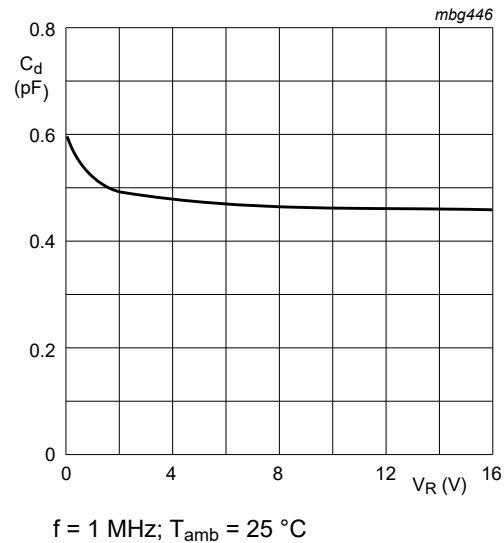


Fig. 4. Diode capacitance as a function of reverse voltage; typical values

11. Test information

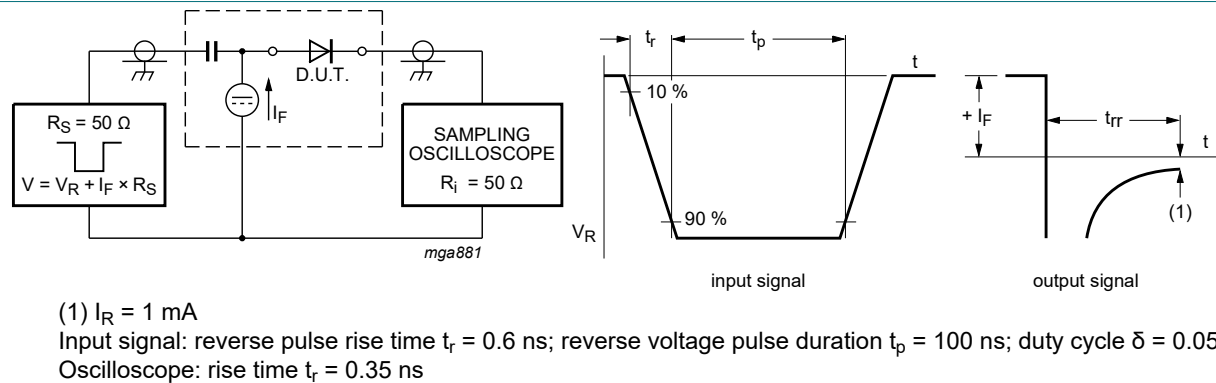


Fig. 5. Reverse recovery time test circuit and waveforms

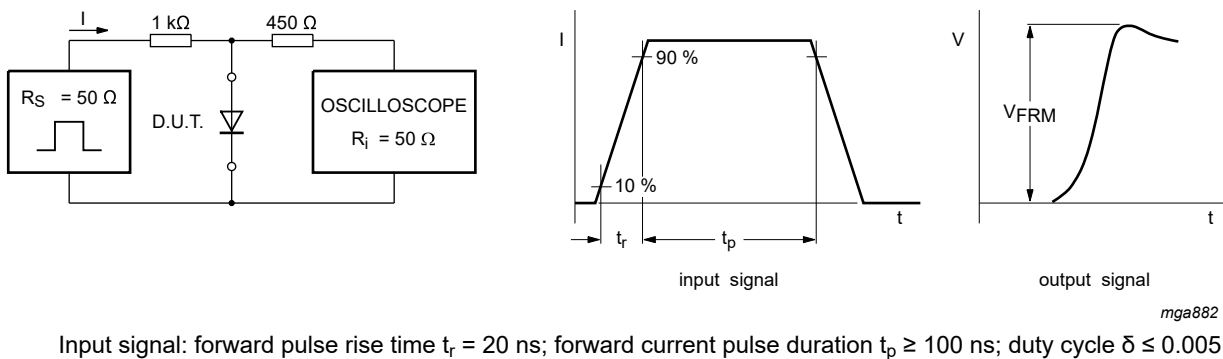
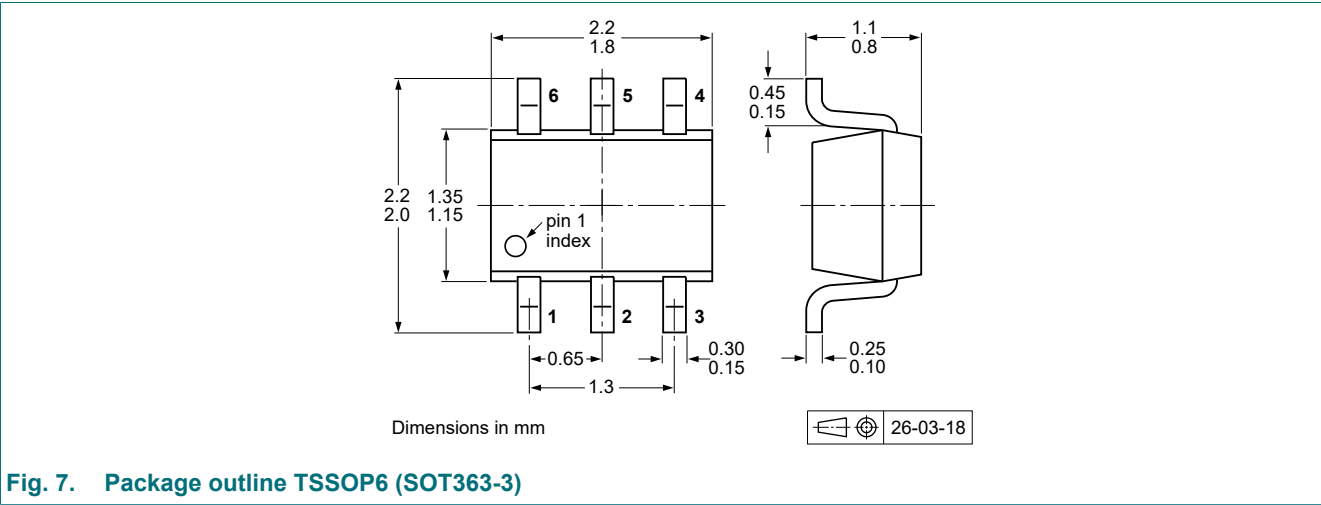
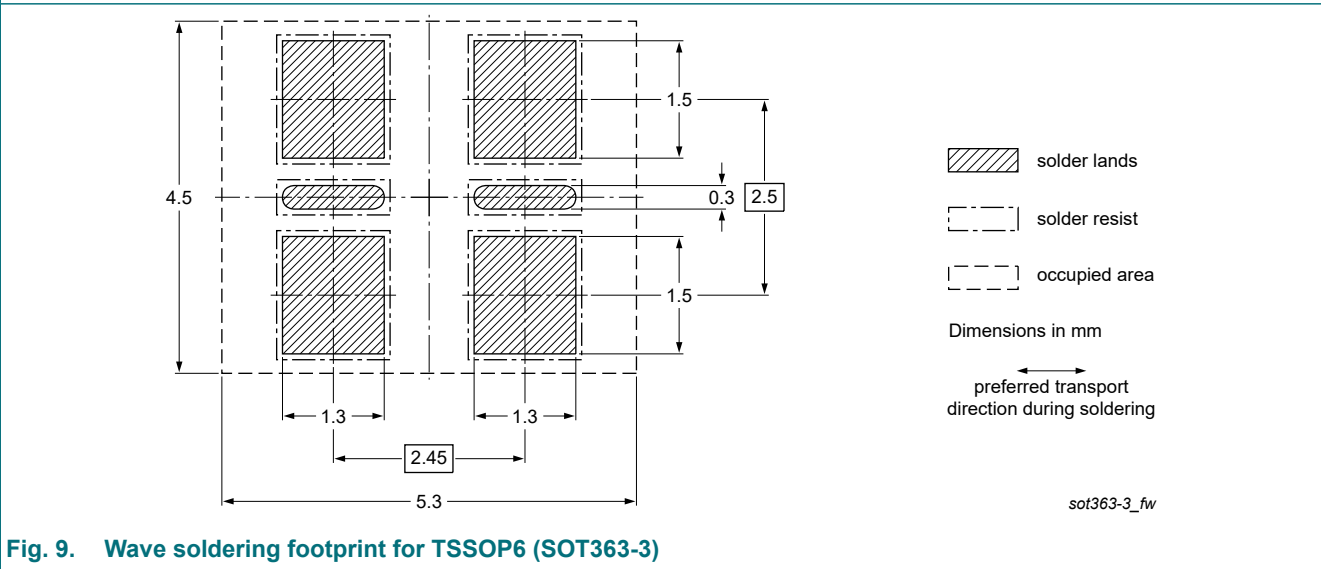
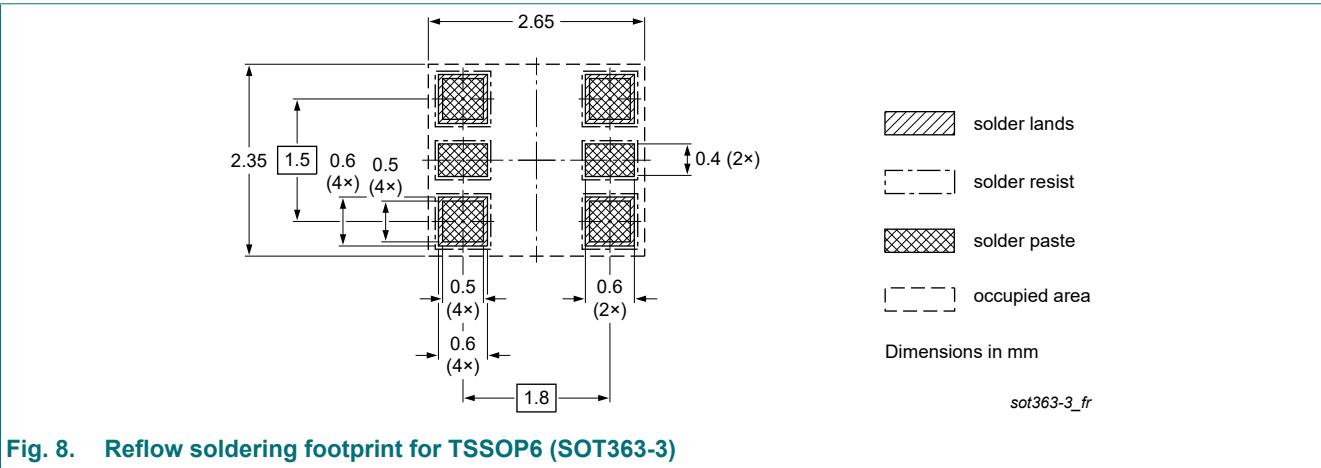


Fig. 6. Forward recovery voltage test circuit and waveforms

12. Package outline



13. Soldering



14. Revision history

Table 8. Revision history

| Data sheet ID     | Release date                              | Data sheet status     | Change notice | Supersedes                                                                                              |
|-------------------|-------------------------------------------|-----------------------|---------------|---------------------------------------------------------------------------------------------------------|
| BAS16VY v.8       | 20260716                                  | Product data sheet    | -             | BAS16VY v.7                                                                                             |
| Modifications:    | • Package changed from SOT363 to SOT363-3 |                       |               |                                                                                                         |
| BAS16VY v.7       | 20220701                                  | Product data sheet    | -             | BAS16_SER_6                                                                                             |
| BAS16_SER_6       | 20140924                                  | Product data sheet    | -             | BAS16_SER_5                                                                                             |
| BAS16_SER_5       | 20080825                                  | Product data sheet    | -             | BAS16_4 BAS16H_1<br>BAS16J_1 BAS16L_1<br>BAS16T_1<br>BAS16VV_BAS16VY_3<br>BAS16W_4 BAS316_4<br>BAS516_1 |
| BAS16_4           | 20011010                                  | Product specification | -             | BAS16_3                                                                                                 |
| BAS16H_1          | 20050415                                  | Product data sheet    | -             | -                                                                                                       |
| BAS16J_1          | 20070308                                  | Product data sheet    | -             | -                                                                                                       |
| BAS16L_1          | 20030623                                  | Product specification | -             | -                                                                                                       |
| BAS16T_1          | 19980120                                  | Product specification | -             | -                                                                                                       |
| BAS16VV_BAS16VY_3 | 20070420                                  | Product data sheet    | -             | BAS16VV_BAS16VY_2                                                                                       |
| BAS16W_4          | 19990506                                  | Product specification | -             | BAS16W_3                                                                                                |
| BAS316_4          | 20040204                                  | Product specification | -             | BAS316_3                                                                                                |
| BAS516_1          | 19980831                                  | Product specification | -             | -                                                                                                       |

## 15. Legal information

### Data sheet status

| Document status [1][2]         | Product status [3] | Definition                                                                            |
|--------------------------------|--------------------|---------------------------------------------------------------------------------------|
| Objective [short] data sheet   | Development        | This document contains data from the objective specification for product development. |
| Preliminary [short] data sheet | Qualification      | This document contains data from the preliminary specification.                       |
| Product [short] data sheet     | Production         | This document contains the product specification.                                     |

- [1] Please consult the most recently issued document before initiating or completing a design.
- [2] The term 'short data sheet' is explained in section "Definitions".
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