



5. Pinning information

Table 2. Pinning information

| Pin | Symbol | Description | Simplified outline | Graphic symbol |
|-----|--------|-------------|---|---|
| 1 | K | Cathode |  SOD123 |  sym001 |
| 2 | A | Anode | | |

6. Ordering information

Table 3. Ordering information

| Type number | Package | | |
|-------------|---------|--|---------|
| | Name | Description | Version |
| BAS16GW | SOD123 | Plastic surface-mounted package; 2 leads | SOD123 |

7. Marking

Table 4. Marking codes

| Type number | Marking code |
|-------------|--------------|
| BAS16GW | GA |

8. Limiting values

Table 5. Limiting values

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

| Symbol | Parameter | Conditions | | Min | Max | Unit |
|------------------|-------------------------------------|--|-----|-----|-----|--------------------|
| V_{RRM} | repetitive peak reverse voltage | $T_j = 25\text{ }^{\circ}\text{C}$ | | - | 100 | V |
| V_R | reverse voltage | | | - | 100 | V |
| I_F | forward current | | | - | 215 | mA |
| I_{FRM} | repetitive peak forward current | $t_p \leq 0.5\text{ ms}$; $\delta \leq 0.25$ | | - | 500 | mA |
| I_{FSM} | non-repetitive peak forward current | $t_p = 1\text{ }\mu\text{s}$; $T_{j(\text{init})} = 25\text{ }^{\circ}\text{C}$; square wave | | - | 4 | A |
| | | $t_p = 1\text{ ms}$; $T_{j(\text{init})} = 25\text{ }^{\circ}\text{C}$; square wave | | - | 1 | A |
| | | $t_p = 1\text{ s}$; $T_{j(\text{init})} = 25\text{ }^{\circ}\text{C}$; square wave | | - | 0.5 | A |
| P_{tot} | total power dissipation | $T_{\text{amb}} \leq 25\text{ }^{\circ}\text{C}$ | [1] | - | 357 | mW |
| | | | [2] | - | 600 | mW |
| T_j | junction temperature | | | - | 150 | $^{\circ}\text{C}$ |
| T_{amb} | ambient temperature | | | -55 | 150 | $^{\circ}\text{C}$ |
| T_{stg} | storage temperature | | | -65 | 150 | $^{\circ}\text{C}$ |

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

[2] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated mounting pad for cathode 1 cm^2 .

9. Thermal characteristics

Table 6. Thermal characteristics

| Symbol | Parameter | Conditions | | Min | Typ | Max | Unit |
|-----------------------|--|-------------|-----|-----|-----|-----|------|
| $R_{\text{th}(j-a)}$ | thermal resistance from junction to ambient | In free air | [1] | - | - | 350 | K/W |
| | | | [2] | - | - | 210 | K/W |
| $R_{\text{th}(j-sp)}$ | thermal resistance from junction to solder point | | [3] | - | - | 58 | K/W |

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

[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated mounting pad for cathode 1 cm^2 .

[3] Soldering point of cathode tab.

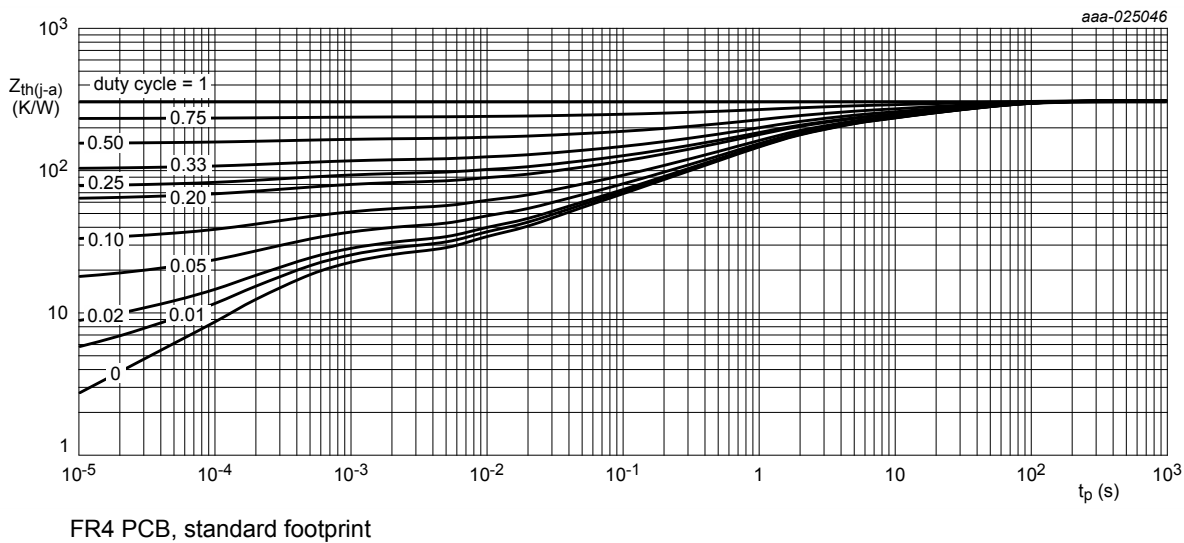


Fig. 1. Transient thermal impedance from junction to ambient as a function of pulse duration; typical values

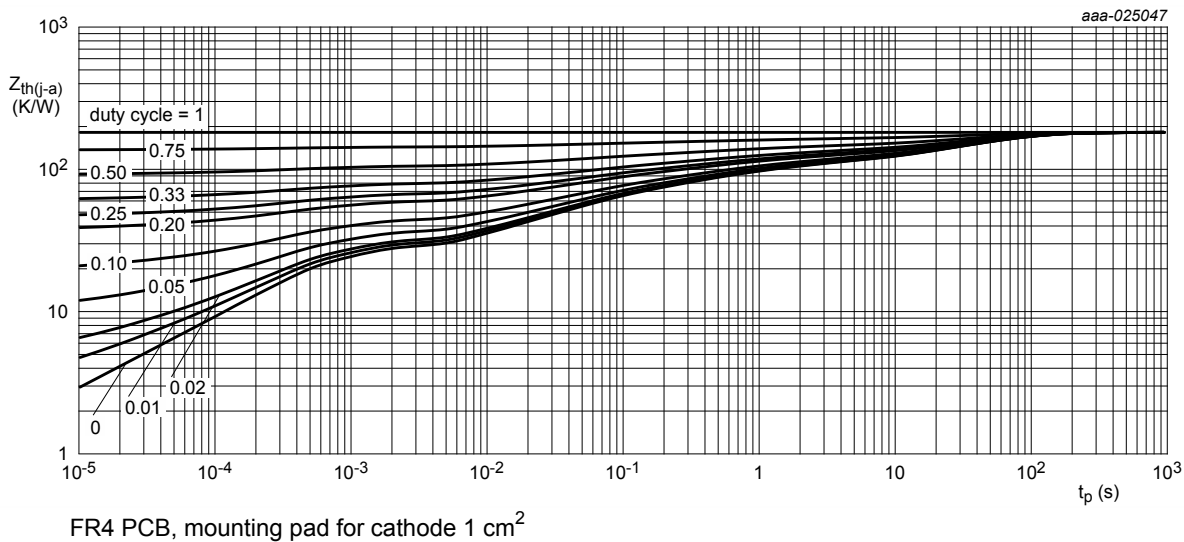
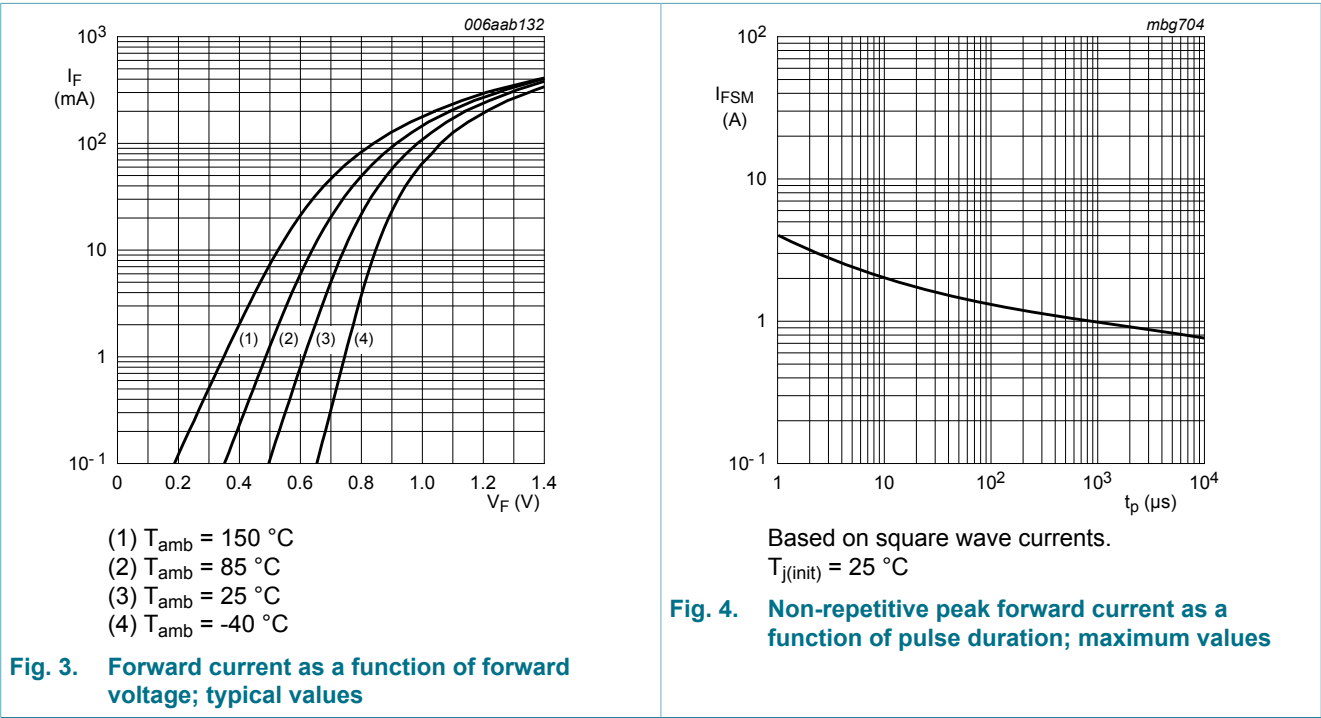


Fig. 2. Transient thermal impedance from junction to ambient as a function of pulse duration; typical values

10. Characteristics

Table 7. Characteristics

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|-----------------|--------------------------|---|-----|-----|------|------|
| V _F | forward voltage | I _F = 1 mA; t _p ≤ 300 μs; δ = 0.02 ; T _j = 25 °C | - | - | 715 | mV |
| | | I _F = 10 mA; t _p ≤ 300 μs; δ = 0.02 ; T _j = 25 °C | - | - | 855 | mV |
| | | I _F = 50 mA; t _p ≤ 300 μs; δ = 0.02 ; T _j = 25 °C | - | - | 1 | V |
| | | I _F = 150 mA; t _p ≤ 300 μs; δ = 0.02 ; T _j = 25 °C | - | - | 1.25 | V |
| I _R | reverse current | V _R = 25 V; pulsed; T _j = 25 °C | - | - | 30 | nA |
| | | V _R = 80 V; pulsed; T _j = 25 °C | - | - | 0.5 | μA |
| | | V _R = 25 V; pulsed; T _j = 150 °C | - | - | 30 | μA |
| | | V _R = 80 V; pulsed; T _j = 150 °C | - | - | 50 | μA |
| C _d | diode capacitance | f = 1 MHz; V _R = 0 V; T _j = 25 °C | - | - | 1.5 | pF |
| t _{rr} | reverse recovery time | I _F = 10 mA; I _R = 10 mA; R _L = 100 Ω; I _{R(meas)} = 1 mA; Switched from I _F = 10 mA to I _R = 10 mA; T _j = 25 °C | - | - | 4 | ns |
| V _{FR} | forward recovery voltage | I _F = 10 mA; t _r = 20 ns | - | - | 1.75 | V |



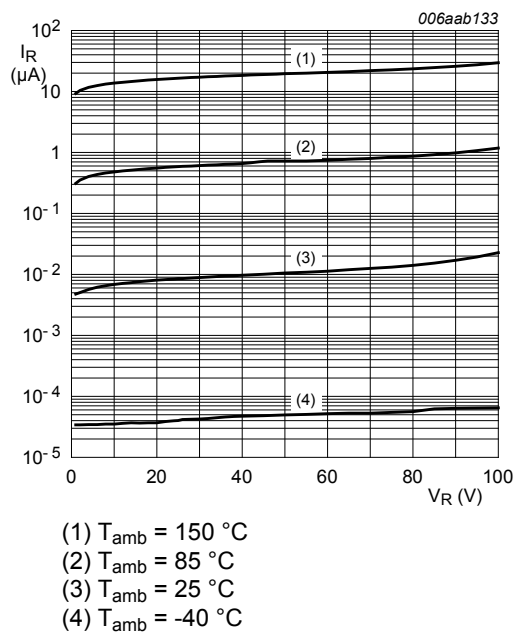


Fig. 5. Reverse current as a function of reverse voltage; typical values

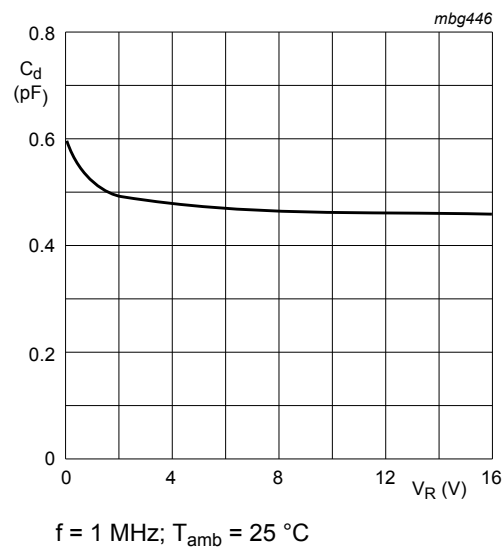


Fig. 6. Diode capacitance as a function of reverse voltage; typical values

11. Test information

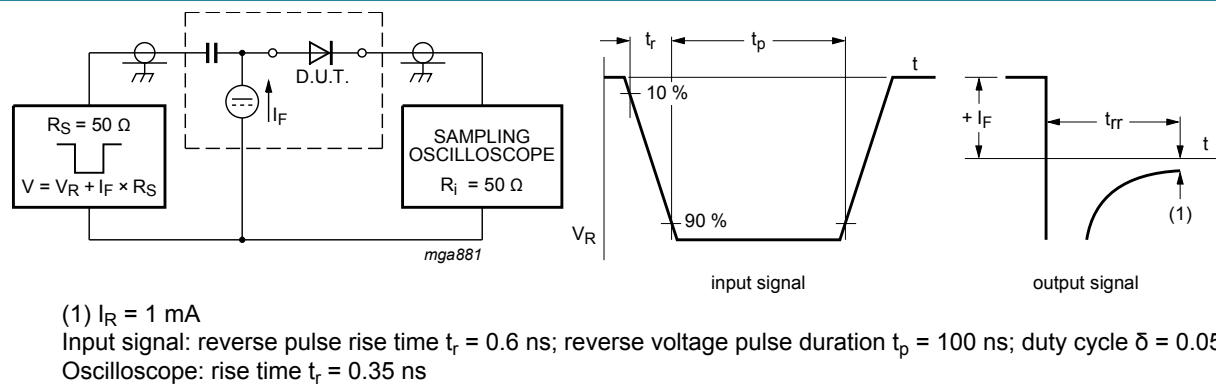


Fig. 7. Reverse recovery time test circuit and waveforms

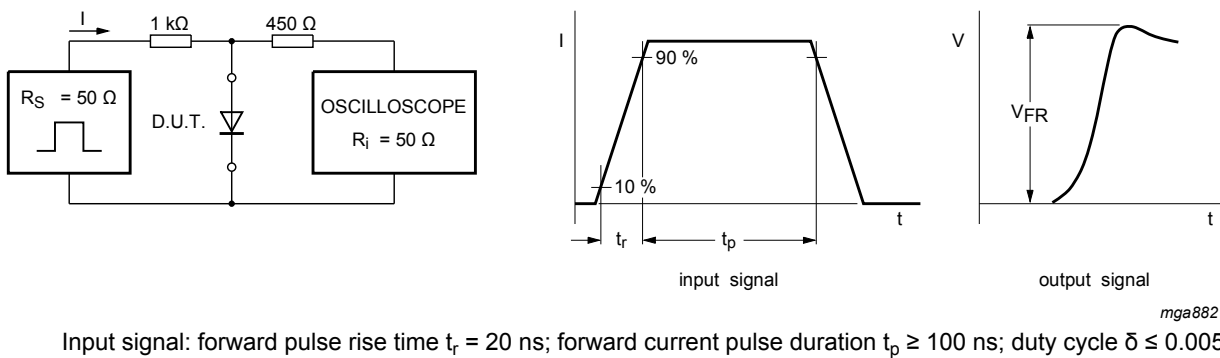


Fig. 8. Forward recovery voltage test circuit and waveforms

12. Package outline

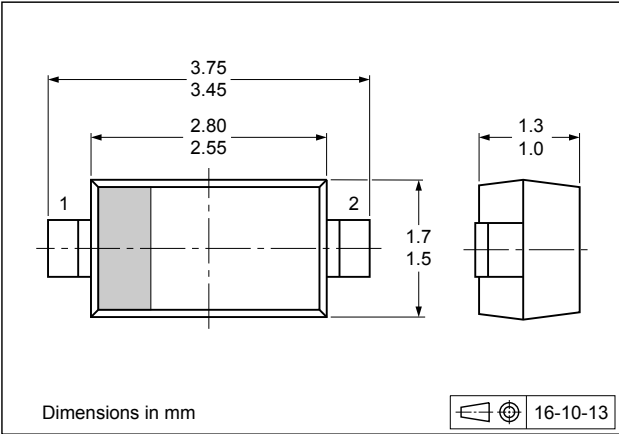


Fig. 9. Package outline SOD123

13. Soldering

SOD123

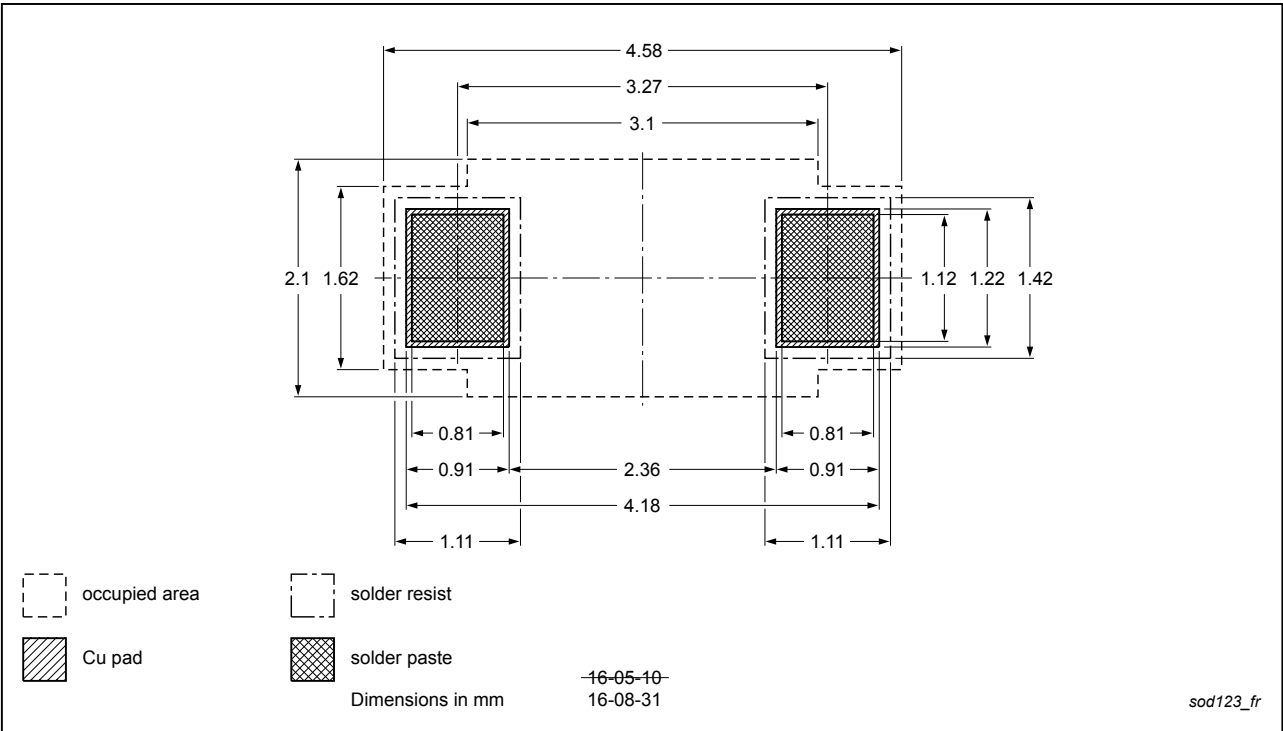


Fig. 10. Reflow soldering footprint for SOD123

SOD123

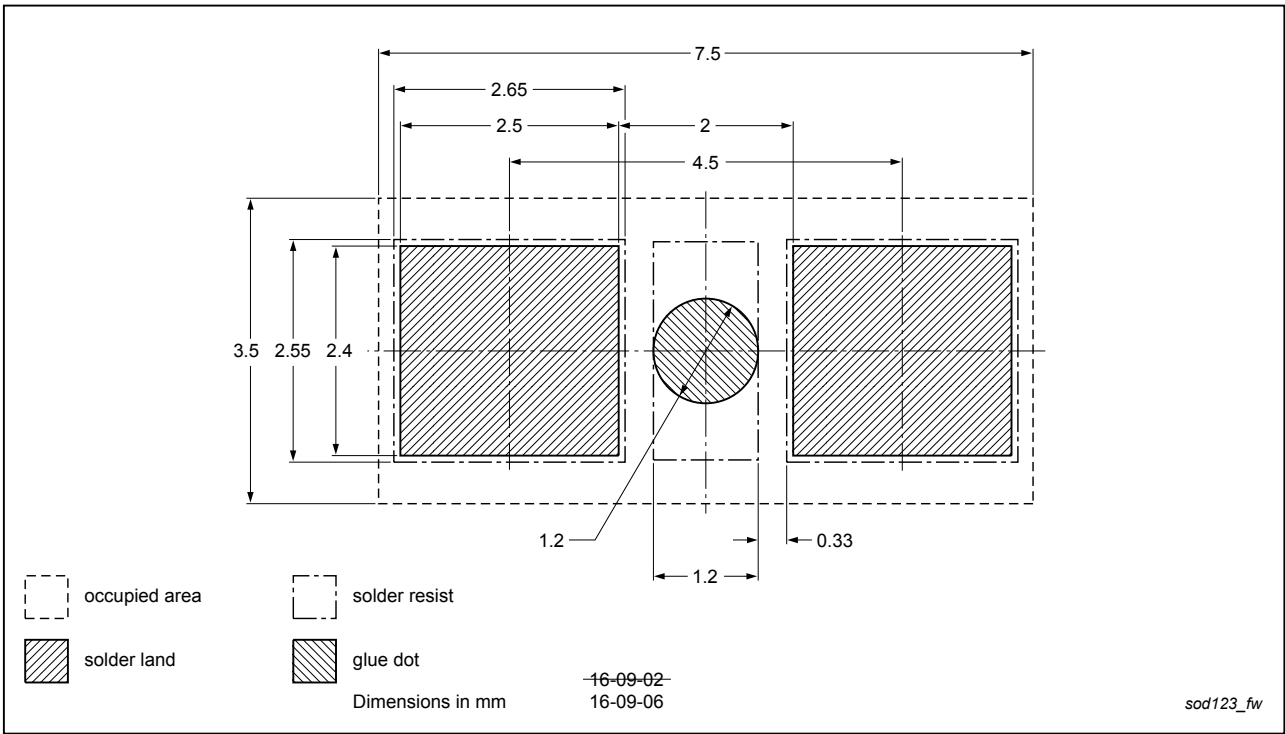


Fig. 11. Wave soldering footprint for SOD123

14. Revision history

Table 8. Revision history

| Data sheet ID | Release date | Data sheet status | Change notice | Supersedes |
|---------------|--------------|--------------------|---------------|------------|
| BAS16GW v.1 | 20161123 | Product data sheet | - | - |

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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