

Features

- $V_{RRM} = 1200\text{ V}$
- $I_{Fn} = 10\text{ A}$
- 1200 V emitter controlled technology
- Soft, fast switching
- Low reverse recovery charge
- Small temperature coefficient

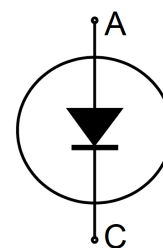
Potential applications

- SMPS
- Resonant applications
- Drives

Description

Recommended for:

- Power modules
- Discrete devices



| Type | Die size | Delivery form |
|--------------|-----------------|---------------|
| SIDC08D120H8 | 3.7 mm x 2.2 mm | Sawn on foil |



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1 Mechanical parameters

Table 1 Mechanical parameters

| Parameter | Values |
|--|---|
| Die size | 3.7 mm x 2.2 mm |
| Area total | 8.14 mm ² |
| Anode pad size | See chip drawing |
| Silicon thickness | 120 µm |
| Wafer size | 200 mm |
| Maximum possible chips per wafer | 3420 |
| Passivation frontside | Photoimide |
| Pad metal | 3.2 µm AlSiCu |
| Backside metal | Ni Ag – system; To achieve a reliable solder connection it is strongly recommended not to consume the Ni layer completely during production process |
| Die attach | Electrically conductive epoxy glue and soft solder |
| Frontside interconnect | Wire bond: Al ≤ 500 µm |
| Reject ink dot size (valid for inked delivery form only) | Ø 0.65 mm; max. 1.2 mm |
| Storage environment (<6 months) for original and sealed MBB bags | Ambient atmosphere air, temperature 17°C – 25°C |
| Storage environment (<6 months) for open MBB bags | Acc. IEC 62258-3; Section 9.4 Storage Environment |

2 Characteristics

Table 2 Maximum ratings

| Parameter | Symbol | Note or test condition | | Values | Unit |
|---|------------|------------------------|-------------------------|-----------|------|
| Repetitive peak reverse voltage | V_{RRM} | | $T_{vj} = 25\text{ °C}$ | 1200 | V |
| Continuous forward current, limited by $T_{vj,max}$ ¹⁾ | I_F | | | - | A |
| Maximum repetitive forward current, tp limited by $T_{vj,max}$ | I_{FRM} | | | 20 | A |
| Junction temperature range | T_{vj} | | | -40...175 | °C |
| Operating junction temperature | T_{vjop} | | | -40...150 | °C |

1) Depending on thermal properties of assembly

Table 3 Static characteristics (tested on wafer), $T_{vj} = 25\text{ °C}$

| Parameter | Symbol | Note or test condition | Values | | | Unit |
|---------------------------------|----------|------------------------|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| Diode forward voltage | V_F | $I_F = 10\text{ A}$ | 1.23 | 1.6 | 1.97 | V |
| Reverse leakage current | I_R | $V_R = 1200\text{ V}$ | | | 27 | μA |
| Cathode-anode breakdown voltage | V_{BR} | $I_R = 0.25\text{ mA}$ | 1200 | | | V |

Note: In general, from reliability and lifetime point of view, the lower the operation junction temperature and/or the applied voltage, the greater the expected lifetime of any semiconductor device.

For "Maximum ratings": Not subject to production test, specified by design.

3 Chip drawing

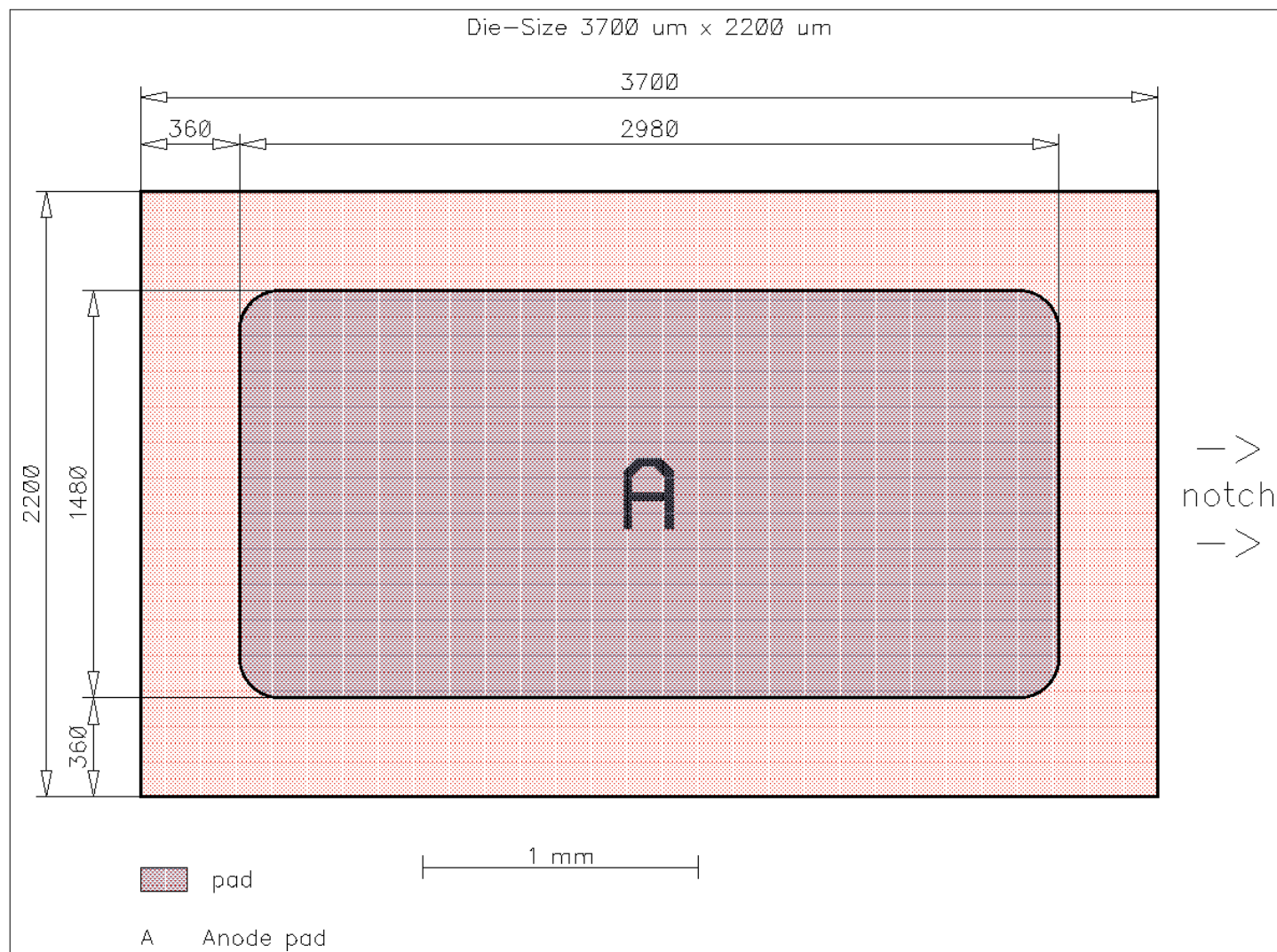


Figure 1

4 Bare die product specifics

- Switching characteristics and thermal properties are dependent on module design and mounting technology and can therefore not be specified for a bare die.
- Test coverage at wafer level cannot cover all application conditions. Therefore it is recommended to test all characteristics, which are relevant for the application at package level, including RBSOA and SCSOA.
- AQL 0.65 for visual inspection according to failure catalogue
- Electrostatic discharge sensitive device according to MIL-STD 883
- The example application may be subject to change without prior notice. It is intended for information purposes only, and should not be interpreted as a commitment.
- Example application: FS10R12VT3

Revision history

| Document revision | Date of release | Description of changes |
|-------------------|-----------------|--|
| 1.00 | 2022-03-23 | Datasheet migrated to a new system **Legacy Revisions** 2.0 Final data sheet 30.12.2014 2.1 Editorial changes 14.10.2015 2.2 Editorial changes (die size X/Y inverted) 25.01.2018 2.3 IF + IFRM conditions changed, Tvj increased to 175°C, editorial changes 23.12.2021 |
| 1.10 | 2022-04-08 | T _{vj} and T _{vjop} updated |

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