

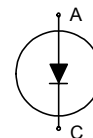
Fast switching diode

Features:

- 600V Emitter Controlled technology 70 μm chip
- soft , fast switching
- low reverse recovery charge
- small temperature coefficient

This chip is used for:

- power modules and discrete devices



Applications:

- SMPS, resonant applications, drives

| Chip Type | V_R | I_F | Die Size | Package |
|-------------|-------|-------|-----------------------------|--------------|
| SIDC07D60F6 | 600V | 22.5A | 2.12 x 3.41 mm ² | sawn on foil |

Mechanical Parameters

| | | |
|---------------------------------|--|-----------------|
| Raster size | 2.12 x 3.41 | mm ² |
| Area total | 7.23 | |
| Anode pad size | 1.638 x 2.928 | |
| Thickness | 70 | μm |
| Wafer size | 150 | mm |
| Max. possible chips per wafer | 2000 | |
| Passivation frontside | Photoimide | |
| Pad metal | 3200 nm AlSiCu | |
| Backside metal | Ni Ag –system suitable for epoxy and soft solder die bonding | |
| Die bond | Electrically conductive glue or solder | |
| Wire bond | Al, $\leq 250\mu\text{m}$ | |
| Reject ink dot size | $\varnothing 0.65\text{mm}$; max 1.2mm | |
| Recommended storage environment | Store in original container, in dry nitrogen, in dark environment, < 6 month at an ambient temperature of 23°C | |



SIDC07D60F6

Maximum Ratings

| Parameter | Symbol | Condition | Value | Unit |
|------------------------------------|-----------|---|---------------|------|
| Repetitive peak reverse voltage | V_{RRM} | $T_{vj} = 25\text{ °C}$ | 600 | V |
| Continuous forward current | I_F | $T_{vj} < 150\text{ °C}$ | ¹⁾ | A |
| Maximum repetitive forward current | I_{FRM} | $T_{vj} < 150\text{ °C}$ | 45 | |
| Junction temperature range | T_{vj} | | -40...+175 | °C |
| Operating junction temperature | T_{vj} | | -40...+150 | °C |
| Dynamic ruggedness ²⁾ | P_{max} | $I_{Fmax} = 45A, V_{Rmax} = 600V,$ $T_{vj} \leq 150\text{ °C}$ | tbd | kW |

¹⁾ depending on thermal properties of assembly

²⁾ not subject to production test - verified by design/characterisation

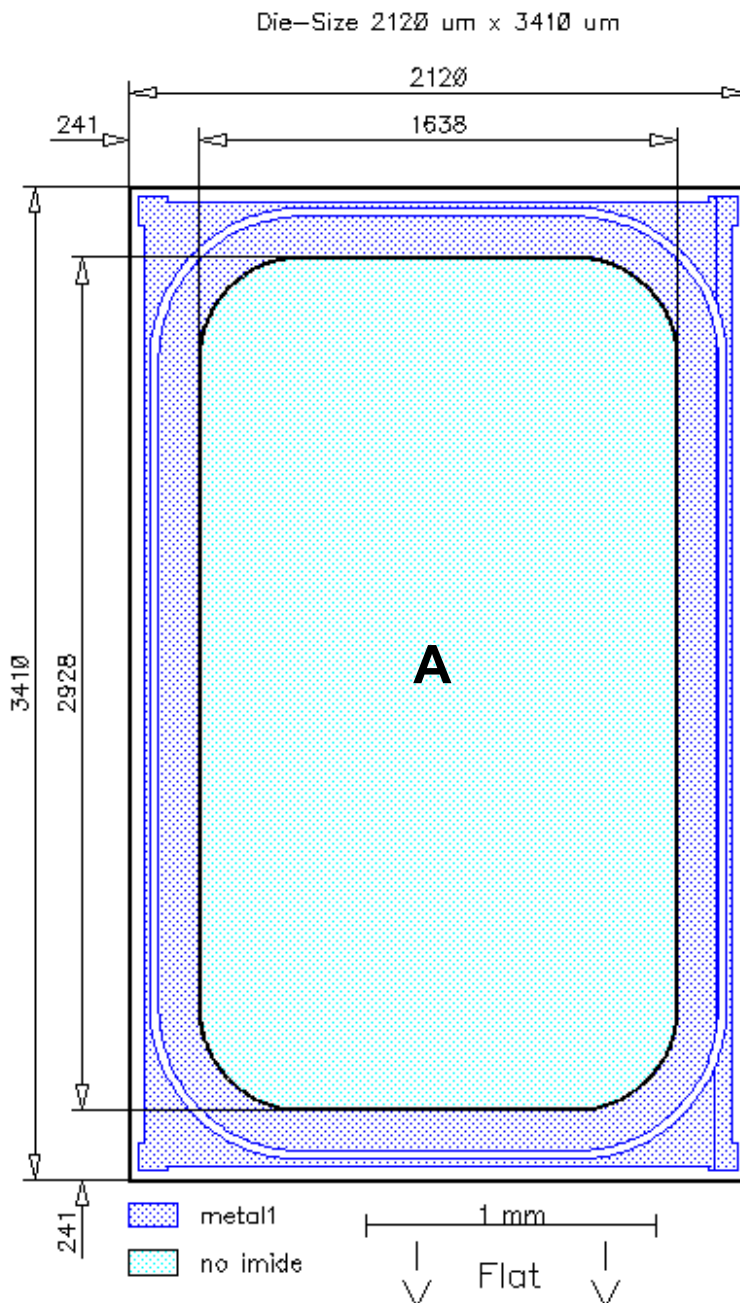
Static Characteristic (tested on wafer), $T_{vj} = 25\text{ °C}$

| Parameter | Symbol | Conditions | Value | | | Unit |
|---------------------------------|----------|---------------|-------|------|------|---------|
| | | | min. | typ. | max. | |
| Reverse leakage current | I_R | $V_R = 600V$ | | | 27 | μA |
| Cathode-Anode breakdown Voltage | V_{BR} | $I_R = 1.5mA$ | 600 | | | V |
| Diode forward voltage | V_F | $I_F = 22.5A$ | | 1.6 | | V |

Further Electrical Characteristics

Switching characteristics and thermal properties are depending strongly on module design and mounting technology and can therefore not be specified for a bare die.

Chip Drawing



A: Anode pad



SIDC07D60F6

Description

AQL 0,65 for visual inspection according to failure catalogue

Electrostatic Discharge Sensitive Device according to MIL-STD 883

Revision History

| Version | Subjects (major changes since last revision) | Date |
|---------|--|------|
| | | |
| | | |

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