



SIDC112D170H

Fast switching diode

Features:

- 1700V technology, Emitter Controlled Diode 3rd generation, 200 µm chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

This chip is used for:

- power modules



Applications:

- resonant applications, drives

| Chip Type | V_R | I_F | Die Size | Package |
|--------------|-------|-------|-----------------------------|--------------|
| SIDC112D170H | 1700V | 205A | 11.8 x 9.52 mm ² | sawn on foil |

Mechanical Parameters

| | | |
|---------------------------------|--|-----------------|
| Raster size | 11.8 x 9.52 | mm ² |
| Area total | 112.3 | |
| Anode pad size | 9.78 x 7.5 | |
| Thickness | 200 | µm |
| Wafer size | 150 | mm |
| Max. possible chips per wafer | 114 | |
| 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, ≤500µm | |
| Reject ink dot size | Ø 0.65mm; 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 | |

Maximum Ratings

| Parameter | Symbol | Condition | Value | Unit |
|------------------------------------|-----------|--|------------|------|
| Repetitive peak reverse voltage | V_{RRM} | $T_{vj} = 25^\circ C$ | 1700 | V |
| Continuous forward current | I_F | $T_{vj} < 150^\circ C$ | 1) 410 | A |
| Maximum repetitive forward current | I_{FRM} | $T_{vj} < 150^\circ C$ | | |
| Junction temperature range | T_{vj} | | -40...+175 | °C |
| Operating junction temperature | T_{vj} | | -40...+150 | °C |
| Dynamic ruggedness ²⁾ | P_{max} | $I_{Fmax} = 410A, V_{Rmax} = 1700V, T_{vj} \leq 150^\circ C$ | tbd | kW |

1) depending on thermal properties of assembly

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

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

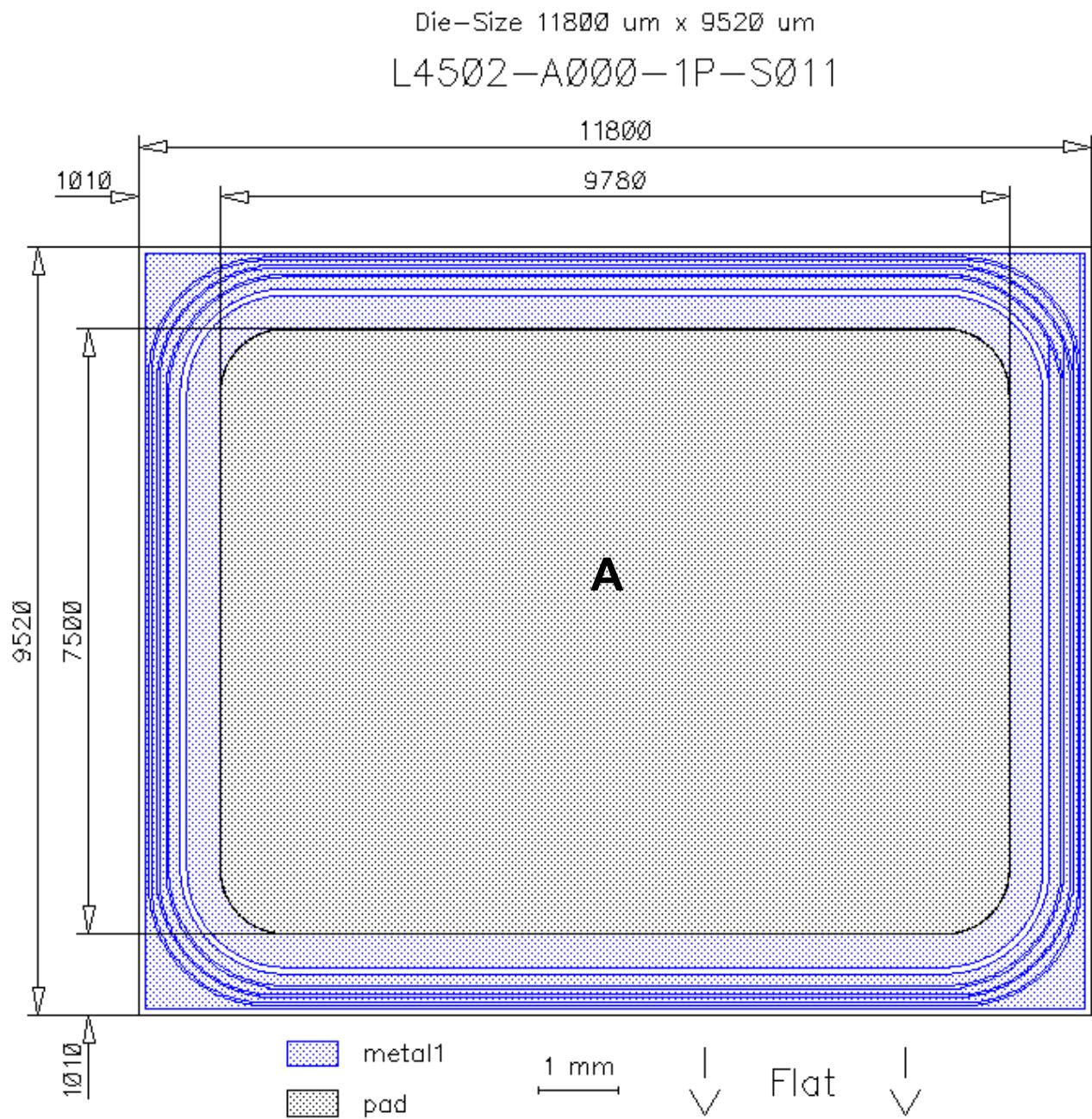
| Parameter | Symbol | Conditions | Value | | | Unit |
|---------------------------------|---------------------|----------------|-------|------|------|------|
| | | | min. | typ. | max. | |
| Reverse leakage current | I_R | $V_R = 1700V$ | | | 20 | µA |
| Cathode-Anode breakdown Voltage | V_{BR} | $I_R = 0.25mA$ | 1700 | | | V |
| Diode forward voltage | V_F ³⁾ | $I_F = 205A$ | | 1.9 | 2.3 | V |

3) V_F tested at lower current

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



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FURTHER ELECTRICAL CHARACTERISTICS

This chip data sheet refers to the
module data sheet

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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