

Circuit Diagram



Product Summary

| Characteristics | Value | Unit |
|-----------------|---------|------|
| V_{RRM} | 1600 | V |
| $I_{F(AV)}$ | 48 | A |
| Chip Dimensions | 5,4x5,4 | mm |
| unsawn wafer | Yes | |
| sawn on foil | Yes | |
| in waffle pack | Yes | |

Applications

- DC Power Supplies
- Field Supply for DC motors
- Battery DC Power Supplies
- Power Rectifiers

Features

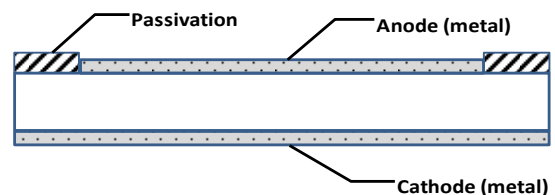
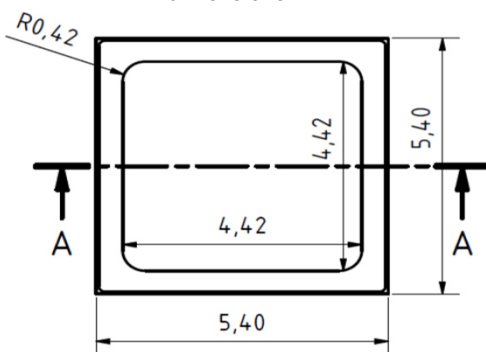
- glassivation
 - advanced planar technology
 - soft recovery rectifier diode
 - high commutation robustness
 - anode top
- $T_{vj} = 150^{\circ}\text{C}$

Mechanical Characteristic

| Characteristic | Conditions | | Value | Unit |
|----------------------------|----------------|------------------------------------|--------------|-----------------|
| Area active | | | 20,10 | mm ² |
| Area total | | | 29,16 | mm ² |
| Thickness | | | 265 | μm |
| Wafer size Ø | | | 150 | mm |
| Die Per Wafer | | | 471 | |
| Material | | | Si | |
| Passivation front side | | | Glass | |
| Metalisation front side | | bondable: | Al | |
| Metalisation back side | | solderable (only): | Al/Ti/NiV/Ag | |
| Recom. wire bonds (Al) | Anode | Number | 5 | |
| *= stitch bonds | | Ø | 380 | μm |
| Reject ink dot size | | Ø | 0.4 - 1.0 | mm |
| Recom. solder temp. | | | <300 | °C |
| Recom. Storage environment | sawn on foil | in org. container, in dry nitrogen | <6 | month |
| | unsawn wafer | in org. container, in dry nitrogen | <2 | year |
| | in waffle pack | in org. container, in dry nitrogen | <2 | year |
| Storage temp. | | | -40...40 | °C |

Dimensions

All dimensions in mm



Electrical Parameters

| Symbol | Conditions | Value | | | Unit |
|--------|------------|-------|-----|-----|------|
| | | Min | Typ | Max | |

Static Characteristics

| | | | | | | |
|---------------|----------------------------------|------------------------------|----------------|------|------|------------------|
| V_R | $V = V_{RRM}$ | $T_{vj} = 25^\circ\text{C}$ | | | 1600 | V |
| I_R | $V = V_{RRM}$ | $T_{vj} = 25^\circ\text{C}$ | | | 50 | μA |
| | | $T_{vj} = 150^\circ\text{C}$ | | | 0,5 | mA |
| V_F | $I_f = 60\text{A}$ | $T_{vj} = 25^\circ\text{C}$ | | 1,10 | 1,20 | V |
| | | $T_{vj} = 150^\circ\text{C}$ | | 1,04 | | V |
| V_{F0} | For power loss calculations only | | | | 0,90 | V |
| r_F | | $T_{vj} = 150^\circ\text{C}$ | | | 4,2 | m Ω |
| T_{VJ} | | | -40 | | 150 | $^\circ\text{C}$ |
| $I_{F(AV)}$ * | DC | $T_c = 100^\circ\text{C}$ | | 48 | | A |
| R_{thJC} * | DC current | | | | 0,8 | K/W |
| I_{FSM} | $T_{vj} = 45^\circ\text{C}$ | $t = 10\text{ ms}$ | (50) Hz , sine | | 640 | A |
| | $V_R = 0\text{ V}$ | $t = 8.3\text{ ms}$ | (60) Hz , sine | | 680 | A |
| | $T_{vj} = 150^\circ\text{C}$ | $t = 10\text{ ms}$ | (50) Hz , sine | | 550 | A |
| | $V_R = 0\text{ V}$ | $t = 8.3\text{ ms}$ | (60) Hz , sine | | 580 | A |
| I^2t | $T_{vj} = 45^\circ\text{C}$ | $t = 10\text{ ms}$ | (50) Hz , sine | | 2000 | A ² s |
| | $V_R = 0\text{ V}$ | $t = 8.3\text{ ms}$ | (60) Hz , sine | | 1900 | A ² s |
| | $T_{vj} = 150^\circ\text{C}$ | $t = 10\text{ ms}$ | (50) Hz , sine | | 1500 | A ² s |
| | $V_R = 0\text{ V}$ | $t = 8.3\text{ ms}$ | (60) Hz , sine | | 1300 | A ² s |

* Data according to assembled 380 μm DCB

Data according to IEC 60747

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