



SIDC24D30SIC3

Silicon Carbide Schottky Diode

FEATURES:

- Revolutionary semiconductor material - Silicon Carbide
- Switching behavior benchmark
- No reverse recovery
- No temperature influence on the switching behavior
- No forward recovery

Applications:

- SMPS, snubber, secondary side rectification



| Chip Type | V _{BR} | I _F | Die Size | Package | Ordering Code |
|---------------|-----------------|----------------|------------------------------|--------------|-------------------|
| SIDC24D30SIC3 | 300V | 10A | 1.706 x 1.38 mm ² | sawn on foil | Q67050-A4163-A103 |

MECHANICAL PARAMETER:

| | | |
|---------------------------------|--|-----------------|
| Raster size | 1.706x 1.38 | mm |
| Anode pad size | 1.405 x 1.08 | |
| Area total / active | 2.354 / 1.548 | mm ² |
| Thickness | 355 | μm |
| Wafer size | 75 | mm |
| Flat position | 0 | deg |
| Max. possible chips per wafer | 1649 pcs | |
| Passivation frontside | Photoimide | |
| Anode metalization | 3200 nm Al | |
| Cathode metalization | 1400 nm Ni Ag –system suitable for epoxy and soft solder die bonding | |
| Die bond | Electrically conductive glue or solder | |
| Wire bond | Al, ≤ 350μm | |
| Reject Ink Dot Size | Ø ≥ 0.3 mm | |
| Recommended Storage Environment | store in original container, in dry nitrogen, < 6 month at an ambient temperature of 23°C | |



Maximum Ratings

| Parameter | Symbol | Condition | Value | Unit |
|--|----------------|--|------------|------------|
| Repetitive peak reverse voltage | V_{RRM} | | 300 | V |
| Surge peak reverse voltage | V_{RSM} | | 300 | |
| Continuous forward current limited by T_{jmax} | I_F | | 10 | A |
| Single pulse forward current (depending on wire bond configuration) | I_{FSM} | $T_C = 25^\circ C, t_P = 10 \text{ ms sinusoidal}$ | 36 | |
| Maximum repetitive forward current limited by T_{jmax} | I_{FRM} | $T_C = 100^\circ C, T_j = 150^\circ C, D = 0.1$ | 45 | |
| Non repetitive peak forward current | I_{FMAX} | $T_C = 25^\circ C, t_P = 10 \mu s$ | 100 | |
| Operating junction and storage temperature | T_j, T_{stg} | | -55...+175 | $^\circ C$ |

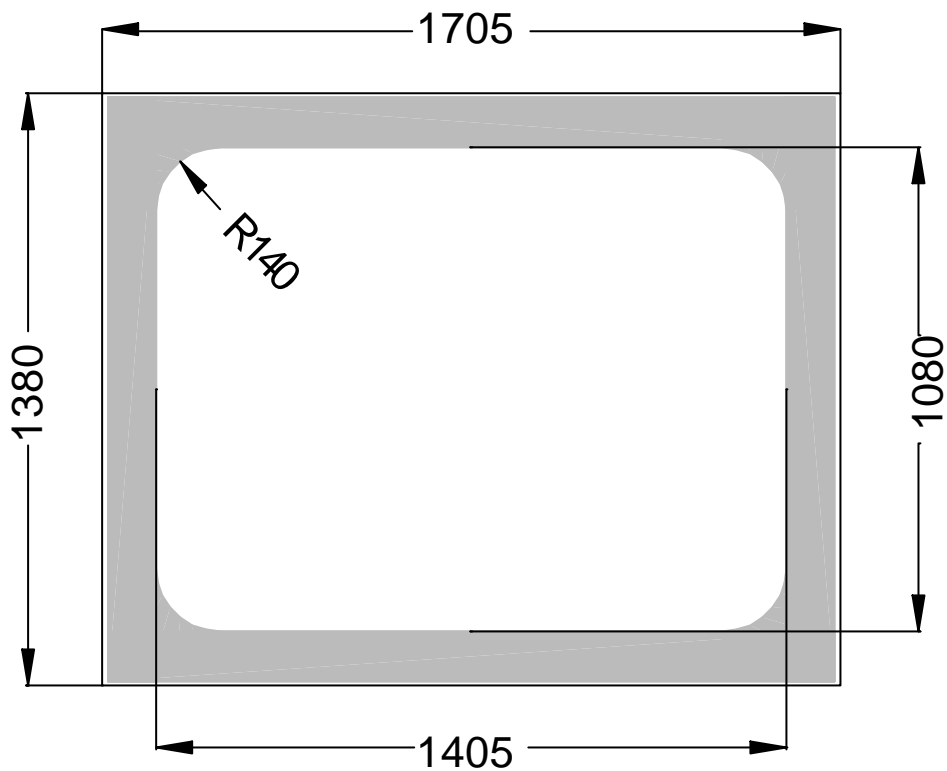
Static Electrical Characteristics (tested on chip), $T_j = 25^\circ C$, unless otherwise specified

| Parameter | Symbol | Conditions | | Value | | | Unit |
|-------------------------|--------|---------------|--------------------|-------|------|------|---------|
| | | | | min. | Typ. | max. | |
| Reverse leakage current | I_R | $V_R = 300 V$ | $T_j = 25^\circ C$ | | 15 | 200 | μA |
| Forward voltage drop | V_F | $I_F = 10 A$ | $T_j = 25^\circ C$ | | 1.5 | 1.7 | V |

Dynamic Electrical Characteristics, at $T_j = 25^\circ C$, unless otherwise specified, tested at component

| Parameter | Symbol | Conditions | | Value | | | Unit |
|-------------------------|----------|---|---------------------|-------|------|------|------|
| | | | | min. | Typ. | max. | |
| Total capacitive charge | Q_C | $I_F = 10 A$ $di/dt = 200 A/ms$ $V_R = 200 V$ | $T_j = 150^\circ C$ | | 23 | | nC |
| Switching time | t_{rr} | $I_F = 10 A$ $di/dt = 200 A/ms$ $V_R = 200 V$ | $T_j = 150^\circ C$ | | n.a. | | ns |
| Total capacitance | C | $I_F = 10 A$ $di/dt = 200 A/ms$ $T_j = 25^\circ C$ $f = 1 MHz$ | $V_R = 1 V$ | | 600 | | pF |
| | | | $V_R = 150 V$ | | 55 | | |
| | | | $V_R = 300 V$ | | 40 | | |

CHIP DRAWING:





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FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the
device data sheet

INFINEON TECHNOLOGIES

SDP10S30

Description:

AQL 0,65 for visual inspection according to failure catalog

Electrostatic Discharge Sensitive Device according to MIL-STD 883

Test-Normen Villach/Prüffeld

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