

SIDC14D120E6

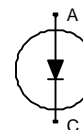
Fast switching diode chip in EMCON-Technology

FEATURES:

- 1200V EMCON technology 130 µm chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

This chip is used for:

- EUPEC power modules and discrete devices



Applications:

- SMPS, resonant applications, drives

| Chip Type | V _R | I _F | Die Size | Package | Ordering Code |
|--------------|----------------|----------------|---------------------------|--------------|-------------------|
| SIDC14D120E6 | 1200V | 15A | 3.8 x 3.8 mm ² | sawn on foil | Q67050-A4123-A001 |

MECHANICAL PARAMETER:

| | | |
|---------------------------------|--|-----------------|
| Raster size | 3.8 x 3.8 | mm ² |
| Area total / active | 14.44 / 9.8 | |
| Anode pad size | 3.08 x 3.08 | |
| Thickness | 130 | µm |
| Wafer size | 150 | mm |
| Flat position | 180 | deg |
| Max. possible chips per wafer | 1018 pcs | |
| Passivation frontside | Photoimide | |
| Anode metallisation | 3200 nm AlSiCu | |
| Cathode metallisation | 1400 nm 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, < 6 month at an ambient temperature of 23°C | |

Maximum Ratings

| Parameter | Symbol | Condition | Value | Unit |
|---|----------------|---------------------------------|------------|------|
| Repetitive peak reverse voltage | V_{RRM} | | 1200 | V |
| Continuous forward current limited by T_{jmax} | I_F | | 15 | A |
| Single pulse forward current (depending on wire bond configuration) | I_{FSM} | $t_p = 10\text{ ms sinusoidal}$ | tbd | |
| Maximum repetitive forward current limited by T_{jmax} | I_{FRM} | | 30 | |
| Operating junction and storage temperature | T_j, T_{stg} | | -55...+150 | °C |

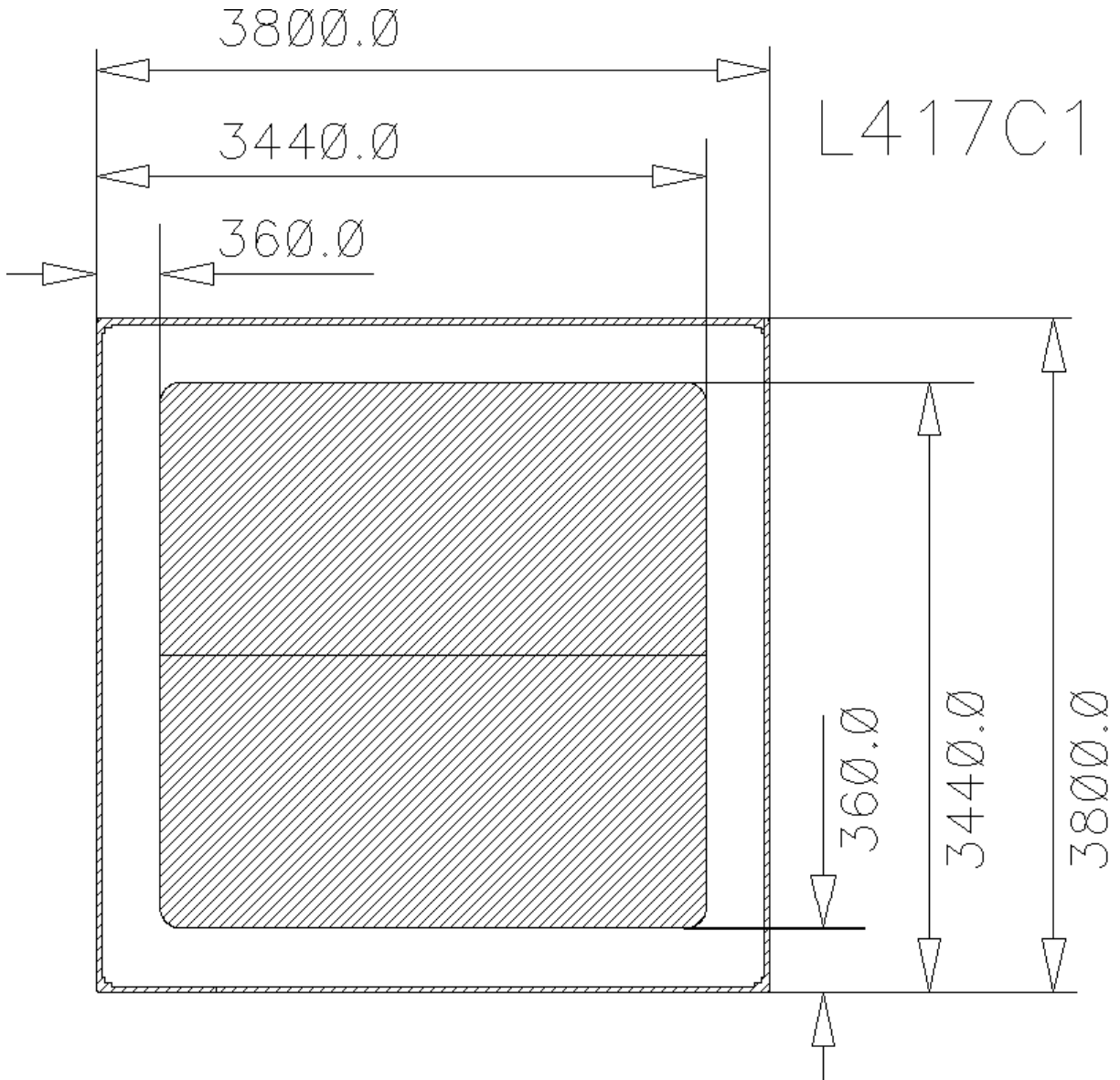
Static Electrical Characteristics (tested on chip), $T_j=25\text{ °C}$, unless otherwise specified

| Parameter | Symbol | Conditions | | Value | | | Unit |
|---------------------------------|----------|---------------------|--------------------|-------|------|------|------|
| | | | | min. | Typ. | max. | |
| Reverse leakage current | I_R | $V_R=1200\text{ V}$ | $T_j=25\text{ °C}$ | | | 27 | µA |
| Cathode-Anode breakdown Voltage | V_{BR} | $I_R=1\text{ mA}$ | $T_j=25\text{ °C}$ | 1200 | | | V |
| Forward voltage drop | V_F | $I_F=15\text{ A}$ | $T_j=25\text{ °C}$ | | 1.9 | | V |

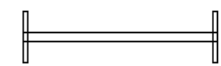
Dynamic Electrical Characteristics, at $T_j = 25\text{ °C}$, unless otherwise specified, tested at component

| Parameter | Symbol | Conditions | | Value | | | Unit |
|---|---------------|--|-----------------------|-------|------|------|------|
| | | | | min. | Typ. | max. | |
| Reverse recovery time | t_{rr1} | $I_F=15\text{ A}$ | $T_j = 25\text{ °C}$ | | tbd | | ns |
| | t_{rr2} | $di/dt=390\text{ A/ms}$ $V_R=600\text{ V}$ | $T_j = 125\text{ °C}$ | | | | |
| Peak recovery current | I_{RRM1} | $I_F=15\text{ A}$ | $T_j = 25\text{ °C}$ | | 10.9 | | A |
| | I_{RRM2} | $di/dt=390\text{ A/ms}$ $V_R= 600\text{ V}$ | $T_j = 125\text{ °C}$ | | 14.5 | | |
| Reverse recovery charge | Q_{rr1} | $I_F=15\text{ A}$ | $T_j=25\text{ °C}$ | | 1.45 | | µC |
| | Q_{rr2} | $di/dt=390\text{ A/ms}$ $V_R= 600\text{ V}$ | $T_j=125\text{ °C}$ | | 3.23 | | |
| Peak rate of fall of reverse recovery current | di_{rr1}/dt | $I_F=15\text{ A}$ | $T_j= 25\text{ °C}$ | | tbd | | A/µs |
| | di_{rr2}/dt | $di/dt=390\text{ A/ms}$ $V_R= 600\text{ V}$ | $T_j= 125\text{ °C}$ | | | | |
| Softness | S1 | $I_F=15\text{ A}$ | $T_j=25\text{ °C}$ | | tbd | | 1 |
| | S2 | $di/dt=390\text{ A/ms}$ $V_R= 600\text{ V}$ | $T_j= 125\text{ °C}$ | | | | |

CHIP DRAWING:



Flatside



1 mm

all measurements in um



Preliminary

SIDC14D120E6

FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet

INFINEON TECHNOLOGIES /
EUPEC

tbd

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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