

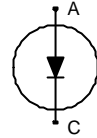
## Fast switching diode chip in EMCON 3 -Technology

### FEATURES:

- 600V EMCON 3 technology 70 µm chip
- soft, fast switching
- low reverse recovery charge
- small temperature coefficient

### This chip is used for:

- power module



### Applications:

- drives

Chip Type	V <sub>R</sub>	I <sub>F</sub>	Die Size	Package	Ordering Code
SIDC50D60C6	600V	200A	9.2 x 5.44 mm <sup>2</sup>	sawn on foil	Q67050-A4356-A101

### MECHANICAL PARAMETER:

Raster size	9.2 x 5.44	mm <sup>2</sup>
Area total / active	50.05 / 44.47	
Anode pad size	8.52 x 4.74	
Thickness	70	µm
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	282 pcs	
Passivation frontside	Photoimide	
Anode metallization	3200 nm AlSiCu	
Cathode metallization	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	$V_{RRM}$		600	V
Continuous forward current limited by $T_{jmax}$	$I_F$		1)	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 $T_{jmax}$	$I_{FRM}$		600	
Operating junction and storage temperature	$T_j, T_{stg}$		-40...+175	°C

1) depending on thermal properties of assembly

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	$I_R$	$V_R=600\text{ V}$	$T_j=25\text{ °C}$			1250	µA
Cathode-Anode breakdown Voltage	$V_{Br}$	$I_R=0.25\text{ mA}$	$T_j=25\text{ °C}$	600			V
Forward voltage drop	$V_F$	$I_F=200\text{ A}$	$T_j=25\text{ °C}$	1.2	1.6	1.9	V

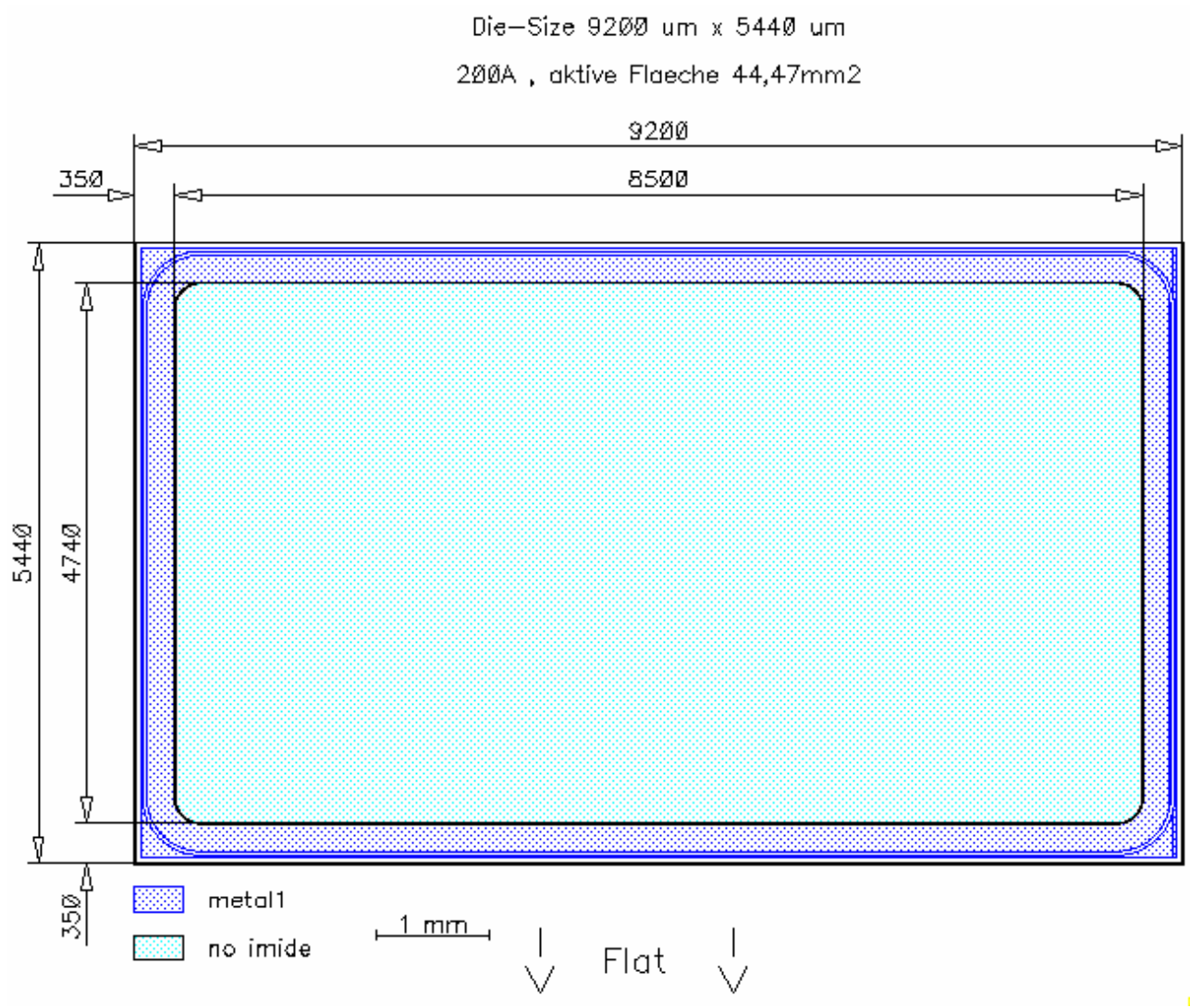
Dynamic Electrical Characteristics (verified by design/characterization), inductive load

$T_j = 25\text{ °C}$ , unless otherwise specified

Parameter	Symbol	Conditions		Value <sup>2)</sup>			Unit
				min.	Typ.	max.	
Reverse recovery time	$t_{rr1}$	$I_F=200\text{ A}$	$T_j = 25\text{ °C}$		tbd		ns
	$t_{rr2}$	$di/dt=tbdA/ms$ $V_R=300\text{ V}$	$T_j = 125\text{ °C}$		tbd		
Peak recovery current	$I_{RRM1}$	$I_F=200\text{ A}$	$T_j = 25\text{ °C}$		tbd		A
	$I_{RRM2}$	$di/dt=tbdA/ms$ $V_R=300\text{ V}$	$T_j = 125\text{ °C}$		tbd		
Reverse recovery charge	$Q_{rr1}$	$I_F=200\text{ A}$	$T_j=25\text{ °C}$		tbd		µC
	$Q_{rr2}$	$di/dt=tbdA/ms$ $V_R=300\text{ V}$	$T_j=125\text{ °C}$		tbd		
Peak rate of fall of reverse recovery current	$di_{rr1}/dt$	$I_F=200\text{ A}$	$T_j = 25\text{ °C}$		tbd		A/µs
	$di_{rr2}/dt$	$di/dt=tbdA/ms$ $V_R=300\text{ V}$	$T_j=125\text{ °C}$		tbd		
Softness	S1	$I_F=200\text{ A}$	$T_j=25\text{ °C}$		tbd		1
	S2	$di/dt=tbdA/ms$ $V_R=300\text{ V}$	$T_j=125\text{ °C}$		tbd		

<sup>2)</sup> values also influenced by parasitic L- and C- in measurement and package.

**CHIP DRAWING:**



---

**FURTHER ELECTRICAL CHARACTERISTICS:**

---

This chip data sheet refers to the device data sheet	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

---

**Published by**  
**Infineon Technologies AG**  
**Bereich Kommunikation**  
**St.-Martin-Strasse 53**  
**D-81541 München**  
**© Infineon Technologies AG 2004**  
**All Rights Reserved.**

**Attention please!**

The information herein is given to describe certain components and shall not be considered as warranted characteristics.

Terms of delivery and rights to technical change reserved.

We hereby disclaim any and all warranties, including but not limited to warranties of non-infringement, regarding circuits, descriptions and charts stated herein.

Infineon Technologies is an approved CECC manufacturer.

**Information**

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office in Germany or our Infineon Technologies Representatives world-wide (see address list).

**Warnings**

Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office.

Infineon Technologies components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body, or to support and / or maintain and sustain and / or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.