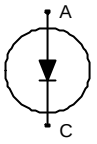
SIDC14D60C6

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
- discrete components

Applications:
- drives



Chip Type	V_R	I_F	Die Size	Package
SIDC14D60C6	600V	50A	4.6 x 3.05 mm^2	sawn on foil

MECHANICAL PARAMETER:

Raster size	4.6 x 3.05	mm^2
Area total / active	14.03 / 11.12	
Anode pad size	3.9 x 2.35	
Thickness	70	µm
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	1013 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	∅ 0.65mm; max 1.2mm	
Recommended storage environment	store in original container, in dry nitrogen, < 6 month at an ambient temperature of 23°C	

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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
Maximum repetitive forward current limited by T_{jmax}	I_{FRM}		100	
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 °C, unless otherwise specified

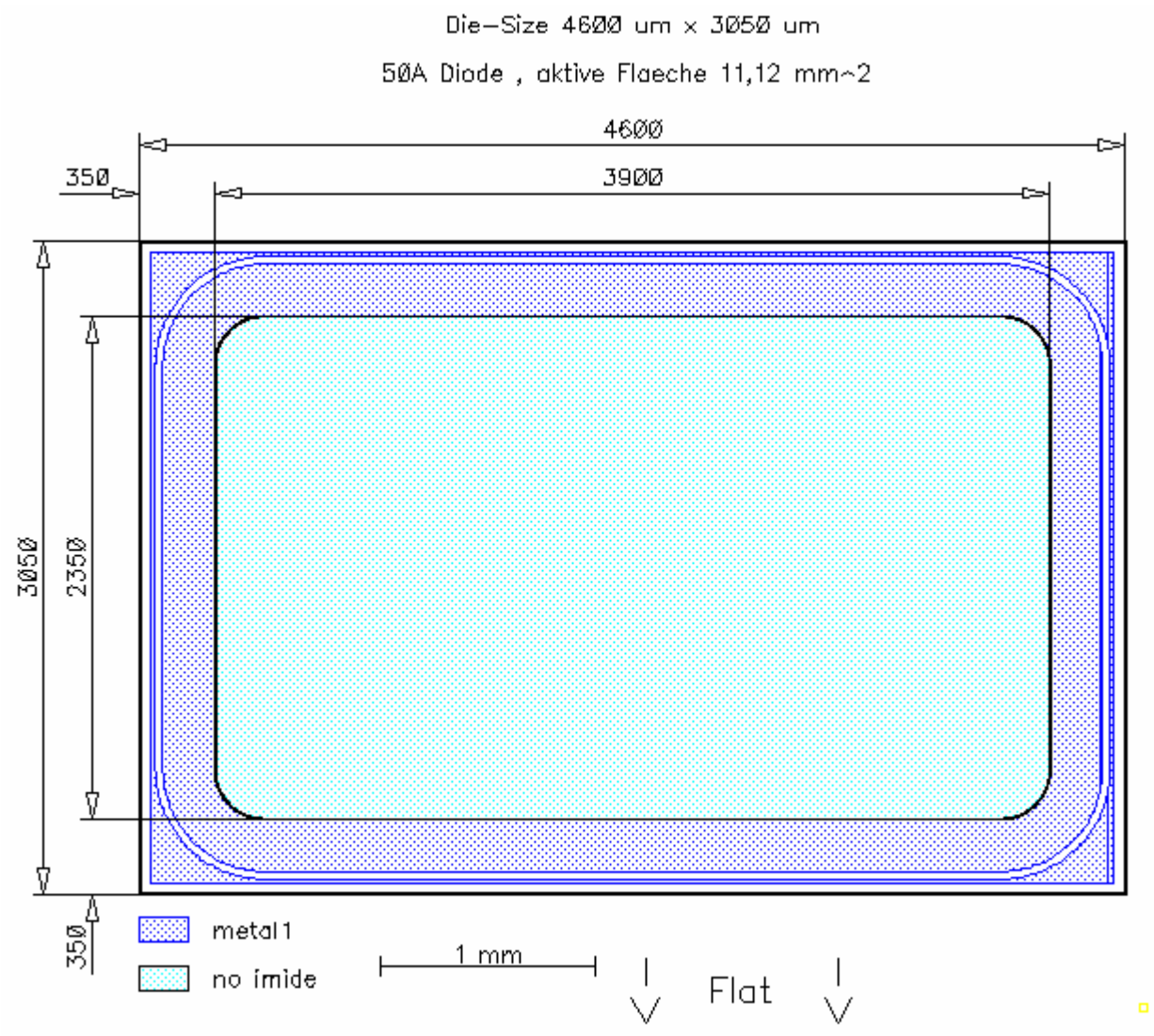
Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	I_R	V_R=600V	T_j=25°C			27	µA
Cathode-Anode breakdown Voltage	V_{Br}	I_R=0.25mA	T_j=25°C	600			V
Forward voltage drop	V_F	I_F=50A	T_j=25°C	1.2	1.6	1.9	V

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

Parameter	Symbol	Conditions		Value [2]			Unit
				min.	Typ.	max.	
Peak reverse recovery current	I_{RM}	I_F=50A di/dt=2800A/ms V_R=300V V_{GE}= -15V	T_j = 25 °C T_j = 125 °C T_j = 150 °C		69.0 76.0 80.0		A
Recovered charge	Q_r	I_F=50A di/dt=2800A/ms V_R=300V V_{GE}= -15V	T_j = 25 °C T_j = 125 °C T_j = 150 °C		1.90 3.40 3.95		µC
Reverse recovery energy	E_{rec}	I_F=50A di/dt=2800A/ms V_R=300V V_{GE}= -15V	T_j = 25 °C T_j = 125 °C T_j = 150 °C		0.60 0.95 1.10		mJ

[2] values also influenced by parasitic L- and C- in measurement and package.

CHIP DRAWING:



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FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet	FS50R06KE3	

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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