

Fast switching diode chip in EMCON-Technology

**FEATURES:**

- 600V EMCON technology 70 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 <sub>R</sub>	I <sub>F</sub>	Die Size	Package	Ordering Code
SIDC14D60F6	600V	45A	3.8 x 3.8 mm <sup>2</sup>	sawn on foil	Q67050-A4165-A001

**MECHANICAL PARAMETER:**

Raster size	3.8 x 3.8	mm <sup>2</sup>
Area total / active	14.44 / 9.8	
Anode pad size	3.08 x 3.08	
Thickness	70	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	$V_{RRM}$		600	V
Continuous forward current limited by $T_{jmax}$	$I_F$		45	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 $T_{jmax}$ (depending on wire bond configuration)	$I_{FRM}$		90	
Operating junction and storage temperature	$T_j, T_{stg}$		-55...+150	°C

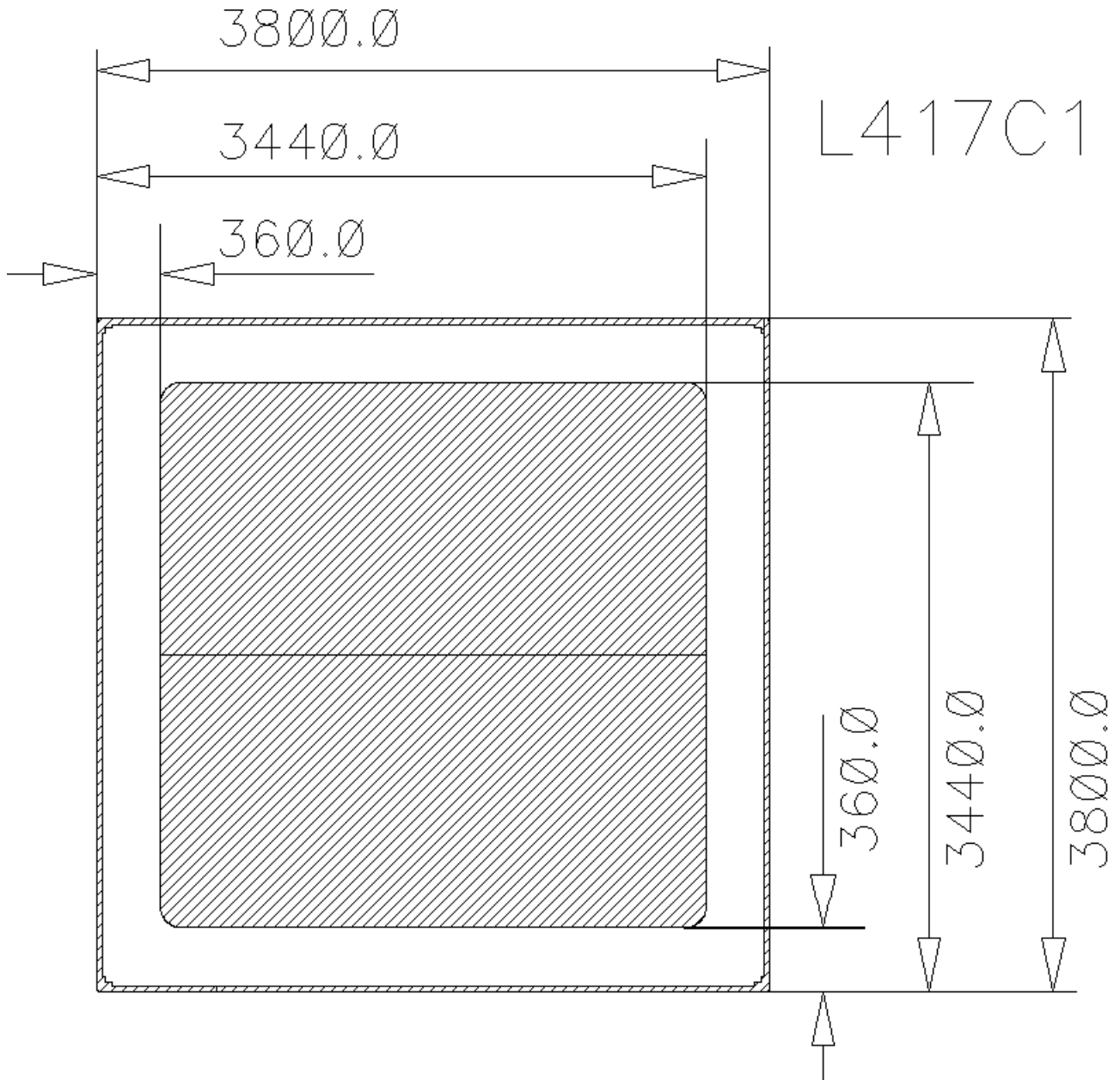
**Static Electrical Characteristics** (tested on chip),  $T_j=25\text{ °C}$ , unless otherwise specified

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	$I_R$	$V_R=600V$	$T_j=25\text{ °C}$			27	µA
Cathode-Anode breakdown Voltage	$V_{Br}$	$I_R=3mA$	$T_j=25\text{ °C}$	600			V
Forward voltage drop	$V_F$	$I_F=45A$	$T_j=25\text{ °C}$		1.45		V

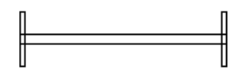
**Dynamic Electrical Characteristics**, at  $T_j = 25\text{ °C}$ , unless otherwise specified, tested at component

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse recovery time	$t_{rr1}$	$I_F=45A$	$T_j = 25\text{ °C}$		140		ns
	$t_{rr2}$	$di/dt=1000A/ms$ $V_R=400V$	$T_j = 150\text{ °C}$		195		
Peak recovery current	$I_{RRM1}$	$I_F=45A$	$T_j = 25\text{ °C}$		23		A
	$I_{RRM2}$	$di/dt=1000A/ms$ $V_R= 400V$	$T_j = 150\text{ °C}$		29		
Reverse recovery charge	$Q_{rr1}$	$I_F=45A$	$T_j=25\text{ °C}$		1400		nC
	$Q_{rr2}$	$di/dt=1000A/ms$ $V_R= 400V$	$T_j=150\text{ °C}$		2900		
Peak rate of fall of reverse recovery current	$di_{rr1}/dt$	$I_F=45A$	$T_j = 25\text{ °C}$				A/µs
	$di_{rr2}/dt$	$di/dt=1000A/ms$ $V_R= 400V$	$T_j=150\text{ °C}$				
Softness	S1	$I_F=45A$	$T_j=25\text{ °C}$		3.1		1
	S2	$di/dt=1000A/ms$ $V_R= 400V$	$T_j=150\text{ °C}$		4.4		

CHIP DRAWING:



Flatside



1 mm

all measurements in μm



Preliminary

# SIDC14D60F6

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**FURTHER ELECTRICAL CHARACTERISTICS:**

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This chip data sheet refers to the device data sheet

INFINEON TECHNOLOGIES /  
EUPEC

tbd

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**Description:**

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AQL 0,65 for visual inspection according to failure catalog

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Electrostatic Discharge Sensitive Device according to MIL-STD 883

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Test-Normen Villach/Prüffeld

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**Published by**  
**Infineon Technologies AG**  
**Bereich Kommunikation**  
**St.-Martin-Strasse 53**  
**D-81541 München**  
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