

Fast switching diode chip in EMCON-Technology

FEATURES:

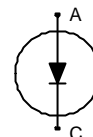
- 600V EMCON technology 70 μm chip
- soft , fast switching
- low reverse recovery charge
- small temperature coefficient

This chip is used for:

- EUPEC power modules and discrete devices

Applications:

- SMPS, resonant applications, drives



Chip Type	V_R	I_F	Die Size	Package	Ordering Code
SIDC09D60E6	600V	20A	3 x 3 mm ²	sawn on foil	Q67050-A4006-A001

MECHANICAL PARAMETER:

Raster size	3 x 3	mm ²
Area total / active	9 / 6.7	
Anode pad size	2.51 x 2.51	
Thickness	70	μm
Wafer size	150	mm
Flat position	180	deg
Max. possible chips per wafer	1667 pcs	
Passivation frontside	Photoimide	
Anode metallisation	3200 nm Al Si 1%	
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, $\leq 500\mu\text{m}$	
Reject Ink Dot Size	\varnothing 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		20	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}		60	
Operating junction and storage temperature	T_j, T_{stg}		-55...+150	°C

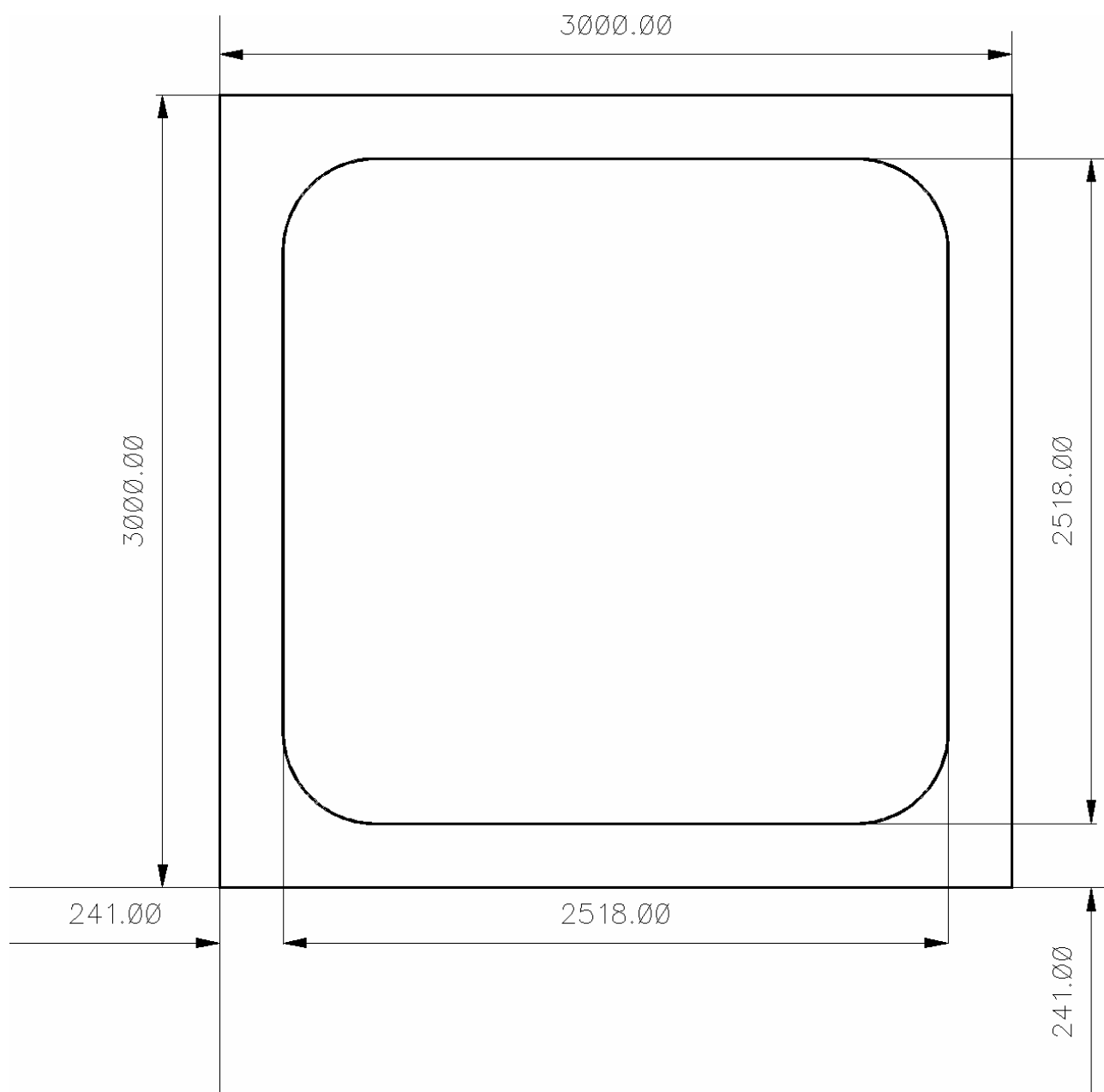
Static Electrical Characteristics (tested on chip), $T_j=25\text{ °C}$, unless otherwise specified

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	I_R	$V_R=600\text{ V}$	$T_j=25\text{ °C}$			250	µA
Cathode-Anode breakdown Voltage	V_{Br}	$I_R=3\text{ mA}$	$T_j=25\text{ °C}$	600			V
Forward voltage drop	V_F	$I_F=20\text{ A}$	$T_j=25\text{ °C}$		1.25		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}	$I_F=20\text{ A}$	$T_j = 25\text{ °C}$		tbd		ns
	t_{rr2}	$di/dt=900\text{ A/ms}$ $V_R=300\text{ V}$	$T_j = 125\text{ °C}$				
Peak recovery current	I_{RRM1}	$I_F=20\text{ A}$	$T_j = 25\text{ °C}$		29		A
	I_{RRM2}	$di/dt=900\text{ A/ms}$ $V_R= 300\text{ V}$	$T_j = 125\text{ °C}$		32.1		
Reverse recovery charge	Q_{rr1}	$I_F=20\text{ A}$	$T_j=25\text{ °C}$		1.7		µC
	Q_{rr2}	$di/dt=900\text{ A/ms}$ $V_R= 300\text{ V}$	$T_j=125\text{ °C}$		2.75		
Peak rate of fall of reverse recovery current	di_{rr1}/dt	$I_F=20\text{ A}$	$T_j = 25\text{ °C}$		tbd		A/µs
	di_{rr2}/dt	$di/dt=900\text{ A/ms}$ $V_R= 300\text{ V}$	$T_j=125\text{ °C}$				
Softness	S1	$I_F=20\text{ A}$	$T_j=25\text{ °C}$		tbd		1
	S2	$di/dt=900\text{ A/ms}$ $V_R= 300\text{ V}$	$T_j=125\text{ °C}$				

CHIP DRAWING:



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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