

Fast switching diode chip in EMCN-Technology

FEATURES:

- 600V EMCN 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 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, $\leq 500\mu\text{m}$	
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	
Single pulse forward current (depending on wire bond configuration)	I_{FSM}	$t_P = 10 \text{ ms sinusoidal}$ $T_j = 25^\circ\text{C}$	80	A
Maximum repetitive forward current limited by T_{jmax}	I_{FRM}		60	
Operating junction and storage temperature	T_j, T_{stg}		-55...+150	°C

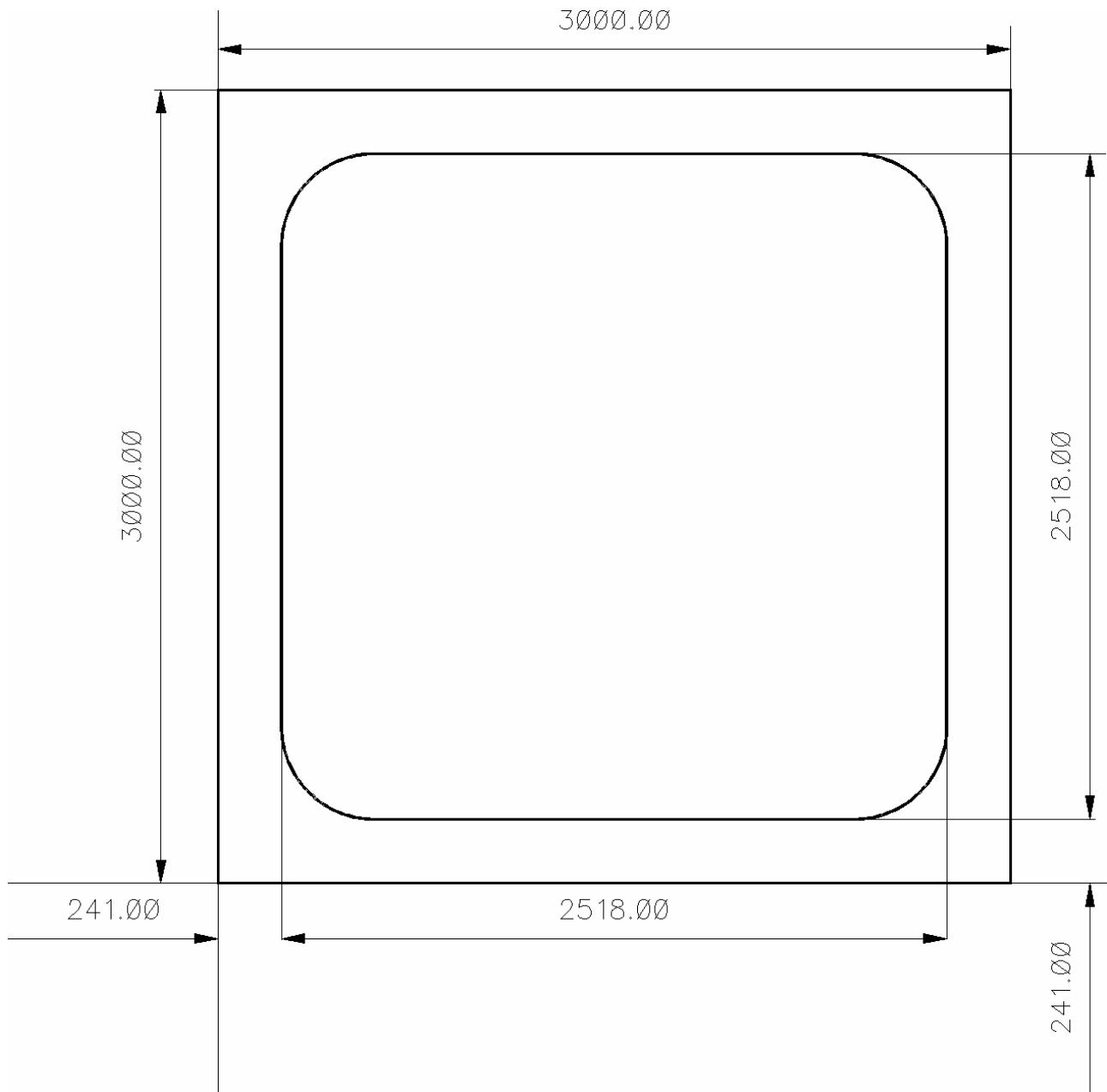
Static Electrical Characteristics (tested on chip), $T_j=25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	I_R	$V_R=600V$	$T_j=25^\circ\text{C}$			250	µA
Cathode-Anode breakdown Voltage	V_{Br}	$I_R=3mA$	$T_j=25^\circ\text{C}$	600			V
Forward voltage drop	V_F	$I_F=20A$	$T_j=25^\circ\text{C}$	-	1.25	1.7	V

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

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse recovery time	t_{rr1}	$I_F=20A$ $di/dt=700A/\text{ms}$ $V_R=400V$	$T_j = 25^\circ\text{C}$		150		ns
	t_{rr2}		$T_j = 125^\circ\text{C}$		200		
Peak recovery current	I_{RRM1}	$I_F=20A$ $di/dt=900A/\text{ms}$ $V_R= 300V$	$T_j = 25^\circ\text{C}$		20		A
	I_{RRM2}		$T_j = 125^\circ\text{C}$		25		
Reverse recovery charge	Q_{rr1}	$I_F=20A$ $di/dt=900A/\text{ms}$ $V_R= 300V$	$T_j=25^\circ\text{C}$		1.7		µC
	Q_{rr2}		$T_j=125^\circ\text{C}$		2.7		

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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