

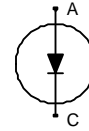
## Silicon Carbide Schottky Diode

### FEATURES:

- Worlds first 600V Schottky diode
- Revolutionary semiconductor material - Silicon Carbide
- Switching behavior benchmark
- No reverse recovery
- No temperature influence on the switching behavior
- Ideal diode for Power Factor Correction
- No forward recovery

### Applications:

- SMPS, PFC, snubber



Chip Type	V <sub>BR</sub>	I <sub>F</sub>	Die Size	Package	Ordering Code
SIDC00D60SIC2	600V	2A	0.84 x 0.59 mm <sup>2</sup>	sawn on foil	Q67050-A4201-A101
SIDC00D60SIC2	600V	2A	0.84 x 0.59 mm <sup>2</sup>	unsawn	Q67050-A4201-A102

### MECHANICAL PARAMETER:

Raster size	0.84 x 0.59	mm
Anode pad size	0.632 x 0.382	
Area total / active	0.496 / 0.255	mm <sup>2</sup>
Thickness	401	µm
Wafer size	50	mm
Flat position	0	deg
Max. possible chips per wafer	3473 pcs	
Passivation frontside	Photoimide	
Anode metalization	3200 nm Al	
Cathode metalization	1400 nm Ni Ag –system suitable for epoxy and soft solder die bonding	
Die bond	electrically conductive glue or solder	
Wire bond	Al, ≤ 125µm	
Reject Ink Dot Size	∅ ≥ 0.2 mm	
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
Surge peak reverse voltage	$V_{RSM}$		600	
Continuous forward current limited by $T_{jmax}$	$I_F$		2	A
Single pulse forward current (depending on wire bond configuration)	$I_{FSM}$	$T_C = 25^\circ C, t_p = 10 \text{ ms sinusoidal}$	4.1	
Maximum repetitive forward current limited by $T_{jmax}$	$I_{FRM}$	$T_C = 100^\circ C, T_j = 150^\circ C, D = 0.1$	7.3	
Non repetitive peak forward current	$I_{FMAX}$	$T_C = 25^\circ C, t_p = 10 \mu s$	17	
Operating junction and storage temperature	$T_j, T_{stg}$		-55...+175	$^\circ C$

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

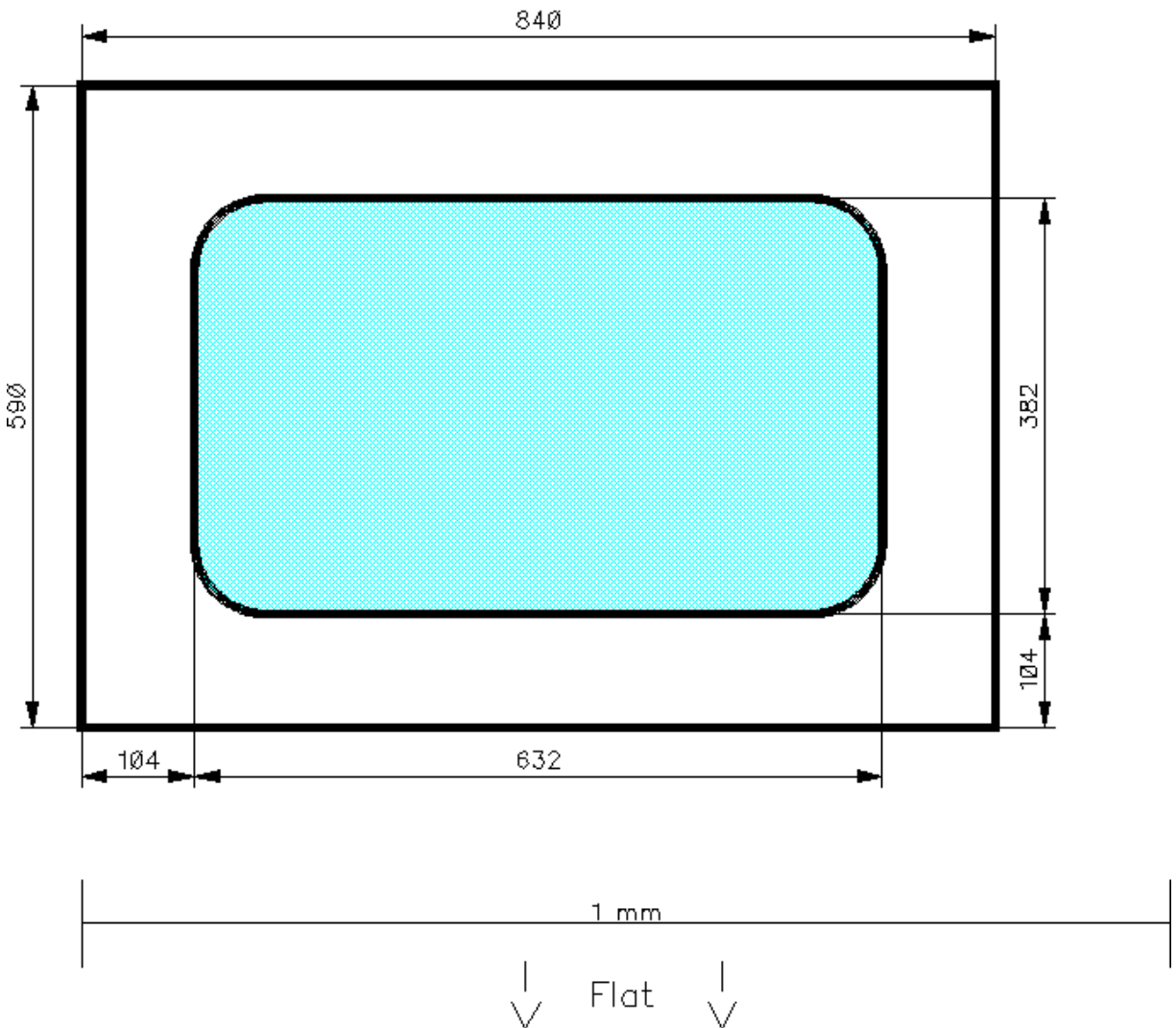
Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	$I_R$	$V_R = 600V^*$	$T_j = 25^\circ C$		7	100	$\mu A$
Forward voltage drop	$V_F$	$I_F = 2A$	$T_j = 25^\circ C$		1.6	2	V

\* blocking characteristic measured under protective gas atmosphere. Chip should not be used without being embedded in potting with breakdown field strength lower than 9 KV/mm at full blocking voltage.

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

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Total capacitive charge	$Q_C$	$I_F = 2A$ $di/dt = 200A/\mu s$ $V_R = 400V$	$T_j = 150^\circ C$		4.6		nC
Switching time	$t_{rr}$	$I_F = 2A$ $di/dt = 200A/\mu s$ $V_R = 400V$	$T_j = 150^\circ C$		n.a.		ns
Total capacitance	C	$I_F = 2A$ $di/dt = 200A/\mu s$ $T_j = 25^\circ C$ $f = 1MHz$	$V_R = 1V$		50		pF
			$V_R = 300V$		5.2		
			$V_R = 600V$		5		

**CHIP DRAWING:**



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**FURTHER ELECTRICAL CHARACTERISTICS:**

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This chip data sheet refers to the  
device data sheet

INFINEON TECHNOLOGIES

SDP02S60

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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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