

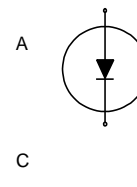
## Silicon Carbide Schottky Diode

### 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
SIDC01D60SIC2	600V	4A	1.17 x 0.99 mm <sup>2</sup>	sawn on foil	Q67050-A4161-A1
SIDC01D60SIC2	600V	4A	1.17 x 0.99 mm <sup>2</sup>	unsawn	Q67050-A4161-A2

### MECHANICAL PARAMETER:

Raster size	1.17 x 0.99	mm
Anode pad size	0.85 x 0.67	
Area total / active	0.992 / 0.581	mm <sup>2</sup>
Thickness	401	µm
Wafer size	50	mm
Flat position	0	deg
Max. possible chips per wafer	1472 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, ≤ 250µm	
Reject Ink Dot Size	Ø = 0.3 mm	
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month	

## 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 $T_{jmax}$	$I_F$		4	A
Single pulse forward current (depending on wire bond configuration)	$I_{FSM}$	$T_C=25^{\circ}C, t_p=10\text{ ms sinusoidal}$	12.5	
Maximum repetitive forward current limited by $T_{jmax}$	$I_{FRM}$	$T_C=100^{\circ}C, T_j=150^{\circ}C, D=0.1$	18	
Non repetitive peak forward current	$I_{FMAX}$	$T_C=25^{\circ}C, t_p=10\mu s$	40	
Operating junction and storage temperature	$T_j, T_{stg}$		-55...+175	$^{\circ}C$

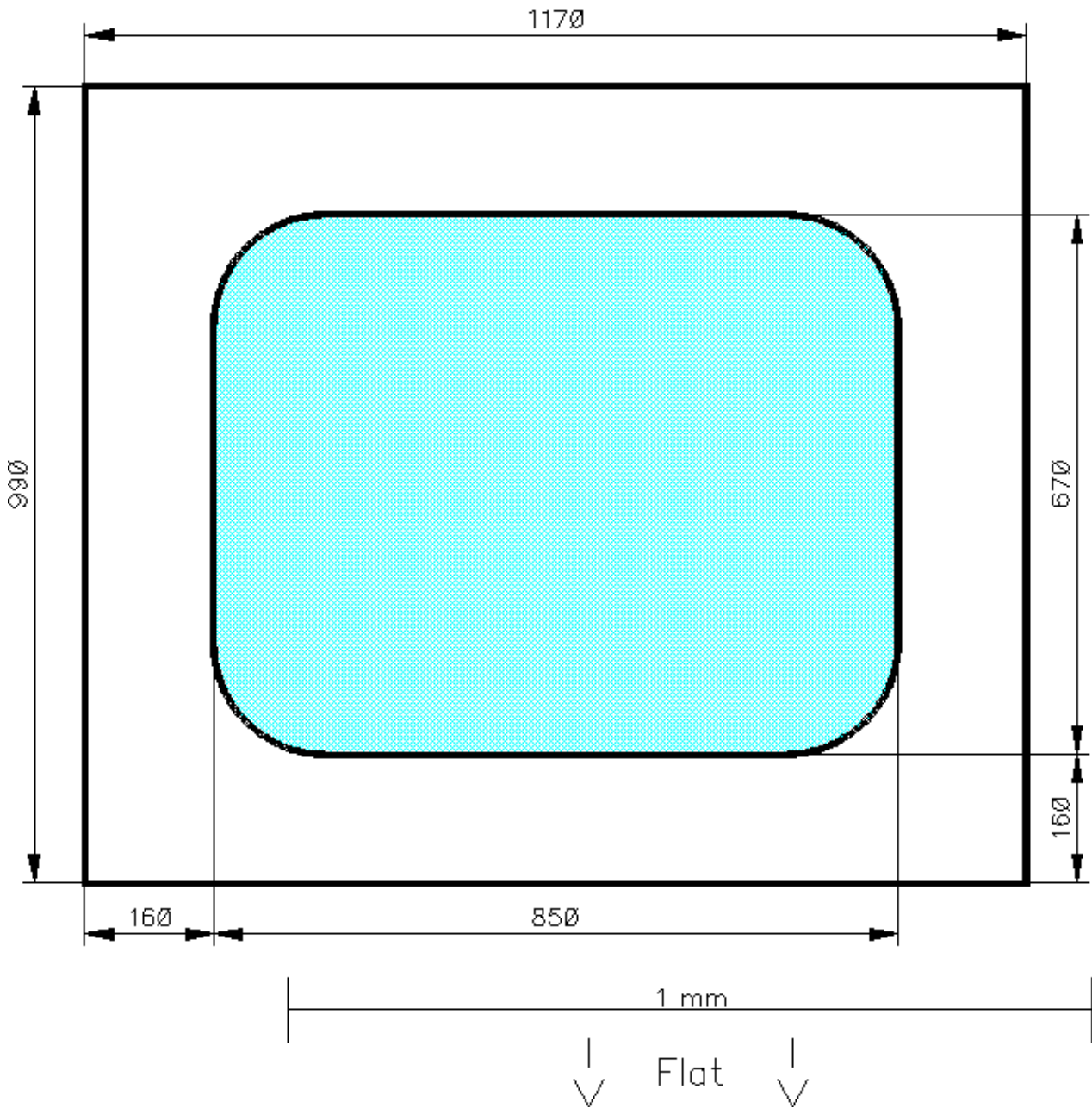
## Static Electrical Characteristics (tested on chip), $T_j=25^{\circ}C$ , unless otherwise specified

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse leakage current	$I_R$	$V_R=600V$	$T_j=25^{\circ}C$		15	200	$\mu A$
Forward voltage drop	$V_F$	$I_F=4A$	$T_j=25^{\circ}C$		1.7	1.9	V

## 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	$Q_C$	$I_F=4A$ $di/dt=200A/ms$ $V_R=400V$	$T_j=150^{\circ}C$		13		nC
Switching time	$t_{rr}$	$I_F=4A$ $di/dt=200A/ms$ $V_R=400V$	$T_j=150^{\circ}C$		n.a.		ns
Total capacitance	C	$I_F=4A$ $di/dt=200A/ms$ $T_j=25^{\circ}C$ $f=1MHz$	$V_R=0V$		150		pF
			$V_R=300V$		10		
			$V_R=600V$		7		

CHIP DRAWING:





Preliminary

# SIDC01D60SIC2

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**FURTHER ELECTRICAL CHARACTERISTICS:**

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This chip data sheet refers to the device data sheet

INFINEON TECHNOLOGIES

SDP04S60

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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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