

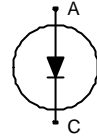
## Silicon Carbide Schottky Diode

### 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
SIDC16D60SIC3	600V	5A	1.26 x 1.26 mm <sup>2</sup>	sawn on foil	Q67050-A4271-A101

### MECHANICAL PARAMETER:

Raster size	1.26 x 1.26	mm
Anode pad size	0.960 x 0.960	
Area total / active	1.588 / 0.96	mm <sup>2</sup>
Thickness	355	µm
Wafer size	75	mm
Flat position	0	deg
Max. possible chips per wafer	2457 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 $T_{jmax}$	$I_F$		5	A
Single pulse forward current (depending on wire bond configuration)	$I_{FSM}$	$T_C = 25^\circ C, t_P = 10 \text{ ms sinusoidal}$	18.5	
Maximum repetitive forward current limited by $T_{jmax}$	$I_{FRM}$	$T_C = 100^\circ C, T_j = 150^\circ C, D = 0.1$	21	
Non repetitive peak forward current	$I_{FMAX}$	$T_C = 25^\circ C, t_P = 10 \mu s$	50	
Operating junction and storage temperature	$T_j, T_{stg}$		-55...+175	°C

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

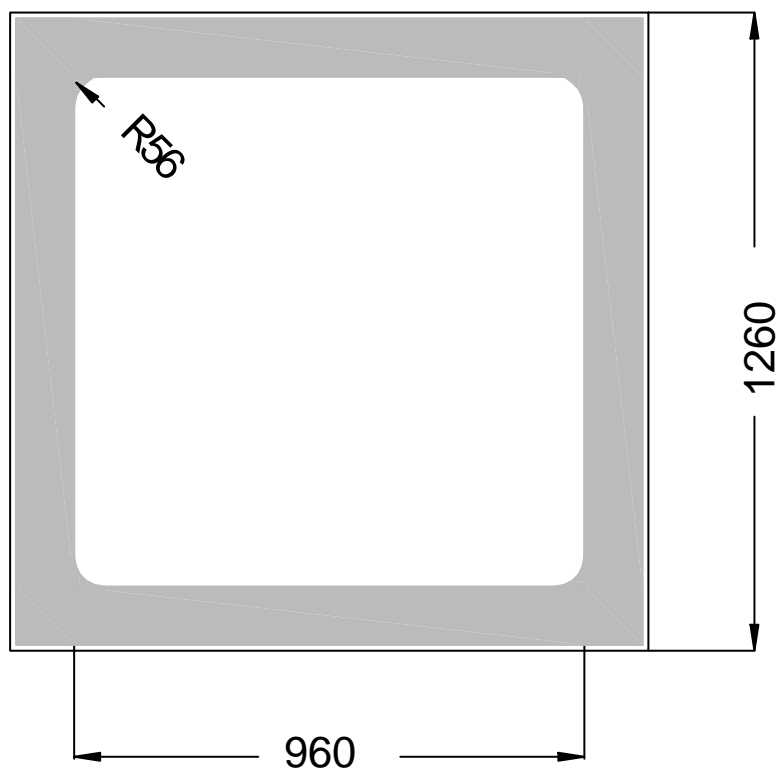
Parameter	Symbol	Conditions	Value			Unit
			min.	Typ.	max.	
Reverse leakage current	$I_R$	$V_R = 600 V^*$ $T_j = 25^\circ C$		19	200	$\mu A$
Forward voltage drop	$V_F$	$I_F = 5 A$ $T_j = 25^\circ C$		1.5	1.7	V

\* blocking characteristic measured under protective gas atmosphere. Chip should not be used without being embedded in pottant 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	$Q_C$	$I_F = 5 A$ $di/dt = 200 A/ms$ $V_R = 400 V$ $T_j = 150^\circ C$		14		nC
Switching time	$t_{rr}$	$I_F = 5 A$ $di/dt = 200 A/ms$ $V_R = 400 V$ $T_j = 150^\circ C$		n.a.		ns
Total capacitance	C	$I_F = 5 A$ $di/dt = 200 A/ms$ $T_j = 25^\circ C$ $f = 1 MHz$	$V_R = 1 V$		170	pF
			$V_R = 300 V$		16	
			$V_R = 600 V$		12	

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

SDT05S60

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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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