

SIDC19D60SIC3

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 _{BR}	l _F	Die Size	Package	Ordering Code
SIDC19D60SIC3	600V	6A	1.38 x 1.38 mm ²	sawn on foil	Q67050-A4162- A104

MECHANICAL PARAMETER:

Raster size	1.38 x 1.38	~~~			
Anode pad size	1.08 x 1.08	mm			
Area total / active	1.904 / 1.191	mm ²			
Thickness	355	μm			
Wafer size	75	mm			
Flat position	0	deg			
Max. possible chips per wafer	2058 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	AI, ≤ 250µm				
Reject Ink Dot Size	Ø ≥ 0.3 mm				
Recommended Storage Environment	store in original container, in dry nitrogen, < 6 month at an ambient temperature of 23°C				



SIDC19D60SIC3

Maximum Ratings

Parameter	Symbol	Condition	Value	Unit	
Repetitive peak reverse voltage	V _{RRM}		600	V	
Surge peak reverse voltage	V _{RSM}		600	ŢŇ	
Continuous forward current limited by $T_{j\text{max}}$	I _F		6		
Single pulse forward current (depending on wire bond configuration)	I _{FSM}	$T_C = 25^{\circ}C, t_P = 10 \text{ ms sinusoidal}$	21.5	А	
Maximum repetitive forward current limited by T _{jmax}	I _{FRM}	$T_C = 100^{\circ}C, \ T_j = 150^{\circ}C, \ D=0.1$	28		
Non repetitive peak forward current	I _{FMAX}	$T_C = 25^{\circ}C, tp = 10\mu s$	60		
Operating junction and storage temperature	$T_{\rm j}$, $T_{ m stg}$		-55+175	°C	

Static Electrical Characteristics (tested on chip), T_j =25 °C, unless otherwise specified

Parameter	Symbol	Cond	Value			Unit	
T arameter	Gymbol	Conditions		min.	Тур.	max.	
Reverse leakage current	I _R	V _R =600V	<i>T_j</i> =25 ° <i>C</i>		20	200	μA
Forward voltage drop	V _F	I _F =6A	<i>T_j</i> =25°C		1.5	1.7	V

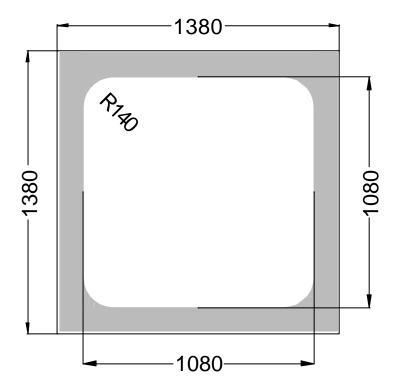
Dynamic Electrical Characteristics, at T_j = 25 °C, unless otherwise specified, tested at component

Parameter	Symbol	Conditions		Value			Unit
	Symbol			min.	Тур.	max.	
Total capacitive charge	Q _C	$I_F=6A$ di/dt=200A/ms $V_R=400V$	$T_j = 150 \ ^\circ C$		21		nC
Switching time	t _{rr}	$I_{F}=6A$ di/dt=200A/ms $V_{R}=400V$	$T_j = 150 \ ^\circ C$		n.a.		ns
Total capacitance	С	$I_F=6A$ di/dt=200A/ms $T_j=25^{\circ}C$ f=1MHz	$V_R = 1 V$		300		pF
			V _R =300V		20		
			V _R =600V		15		



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CHIP DRAWING:





FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet

INFINEON TECHNOLOGIES

SPD06S60

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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