SIDC19D60SIC3

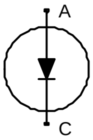
Silicon Carbide Schottky Diode

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}	I_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	mm
Anode pad size	1.08 x 1.08	
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	Al, ≤ 250µm	
Reject Ink Dot Size	∅ ≥ 0.3 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		6	A
Single pulse forward current (depending on wire bond configuration)	I_{FSM}	T_C =25°C, t_P =10 ms sinusoidal	21.5	
Maximum repetitive forward current limited by T_{jmax}	I_{FRM}	T_C = 100°C, T_j=150°C, $D=0.1$	28	
Non repetitive peak forward current	I_{FMAX}	T_C =25°C, $tp=10\mu s$	60	
Operating junction and storage temperature	T_j , T_{stg}		-55...+175	°C

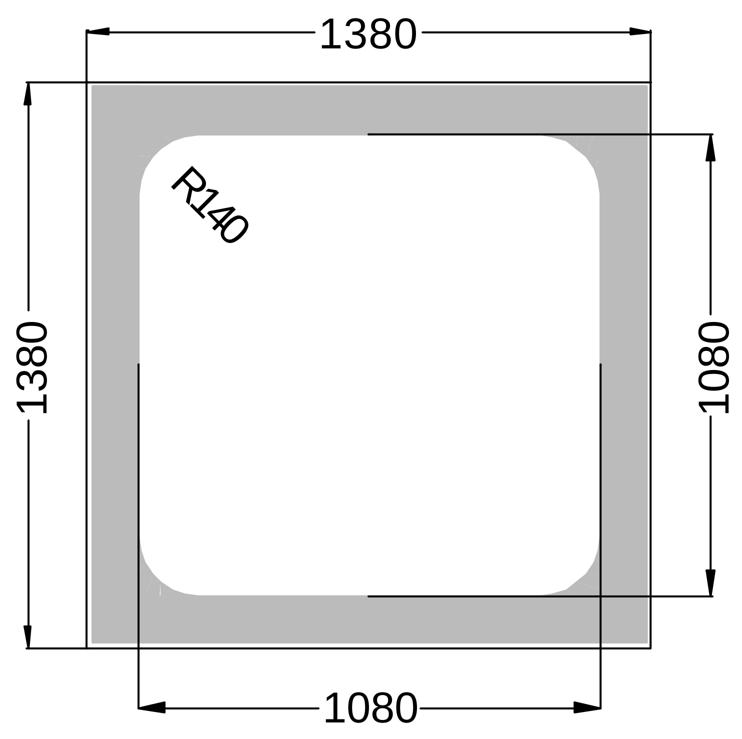
Static Electrical Characteristics (tested on chip), T_j=25 °C, unless otherwise specified

Parameter	**Symbol**	**Conditions**		**Value**			**Unit**
				min.	Typ.	max.	
Reverse leakage current	I_R	V_R=600V	T_j=25°C		20	200	µA
Forward voltage drop	V_F	I_F=6A	T_j=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**
				min.	Typ.	max.	
Total capacitive charge	Q_C	I_F=6A di/dt=200A/ms V_R=400V	T_j = 150 °C		21		nC
Switching time	t_{rr}	I_F=6A di/dt=200A/ms V_R= 400V	T_j = 150 °C		n.a.		ns
Total capacitance	C	I_F=6A di/dt=200A/ms T_j=25°C f=1MHz	V_R=1V		300		pF
			V_R=300V		20		
			V_R=600V		15		

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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