

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
SIDC11D60SIC3	600V	4A	1.15 x 0.97 mm ²	sawn on foil	Q67050-A4161- A104

MECHANICAL PARAMETER:

Raster size	1.15 x 0.97	~~~			
Anode pad size	0.85 x 0.67				
Area total / active	1.116 / 0.581	mm ²			
Thickness	355	μm			
Wafer size	75	mm			
Flat position	0	deg			
Max. possible chips per wafer	3555 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, $\leq 250 \mu m$				
Reject Ink Dot Size	Ø ≥ 0.3 mm				
Recommended Storage Environmentstore 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	v
Continuous forward current limited by	1_		Λ	
T _{jmax}	7F		4	
Single pulse forward current	lesm	$T_{\rm C} = 25^{\circ} C$, $t_{\rm D} = 10$ ms sinusoidal	12.5	A
(depending on wire bond configuration)	· F 3 WI			
Maximum repetitive forward current	1	$T_C = 100^{\circ}C, \ T_j = 150^{\circ}C,$	19	
limited by T _{jmax}	'FRM	D=0.1	10	
Non repetitive peak forward current	I _{FMAX}	$T_C = 25^{\circ}C, tp = 10\mu s$	40	
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

Paramotor	Symbol	Condi	Value			Unit	
Falameter	Symbol	Conditions		min.	Тур.	max.	
Reverse leakage current	I _R	V _R =600V	<i>T_j</i> =25 ° <i>C</i>		15	200	μA
Forward voltage drop	V _F	I _F =4A	<i>T_j</i> =25°C		1.7	1.9	V

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

Paramotor	Symbol	Conditions		Value			Unit
Falalletel	Symbol	Conar	Conditions		Тур.	max.	
Total capacitive charge	Q _C	$I_F=4A$ di/dt=200A/ms $V_R=400V$	$T_j = 150 \ ^\circ \mathrm{C}$		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	С	$I_F=4A$ di/dt=200A/ms $T_j=25$ °C f=1MHz	$V_R = 1 V$		150		
			V _R =300V		10		pF
			V _R =600V		7		



CHIP DRAWING:





FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet

INFINEON TECHNOLOGIES

SDP04S60

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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