

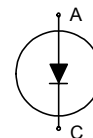
2nd generation thinQ!TM SiC Schottky Diode

Features:

- Revolutionary semiconductor material - Silicon Carbide
- Switching behavior benchmark
- No reverse recovery
- No temperature influence on the switching behavior
- No forward recovery
- High surge current capability

Applications:

- SMPS, PFC, snubber



Chip Type	V _{BR}	I _F	Die Size	Package
IDC08S60CE	600V	8A	1.658 x 1.52 mm ²	sawn on foil

Mechanical Parameter

Raster size	1.658x 1.52	mm ²
Anode pad size	1.421 x 1.283	
Area total	2.52	
Thickness	355	µm
Wafer size	100	mm
Max. possible chips per wafer	2682	
Passivation frontside	Photoimide	
Anode metal	3200 nm Al	
Cathode metal	Ni Ag –system suitable for epoxy and soft solder die bonding	
Die bond	Electrically conductive glue or solder	
Wire bond	Al, ≤ 350µm	
Reject ink dot size	Ø ≥ 0.3 mm	
Recommended storage environment	Store in original container, in dry nitrogen, in dark environment, < 6 month at an ambient temperature of 23°C	

Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	V_{RRM}	$T_{vj} = 25\text{ °C}$	600	V
DC blocking voltage	V_{DC}		600	
Continuous forward current limited by T_{vjmax}	I_F	$T_{vj} < 150\text{ °C}$	8	A
Surge non repetitive forward current sine halfwave	$I_{F,SM}$	$T_C = 25\text{ °C}, t_p = 10\text{ ms}$	59	
Repetitive peak forward current limited by T_{vjmax}	$I_{F,RM}$	$T_C = 100\text{ °C}, T_{vj} = 150\text{ °C}, D = 0.1$	35	
Non-repetitive peak forward current	$I_{F,max}$	$T_C = 25\text{ °C}, t_p = 10\text{ }\mu\text{s}$	264	
Operating junction and storage temperature	T_{vj}, T_{stg}		-55...+175	°C

Static Characteristics (tested on wafer)

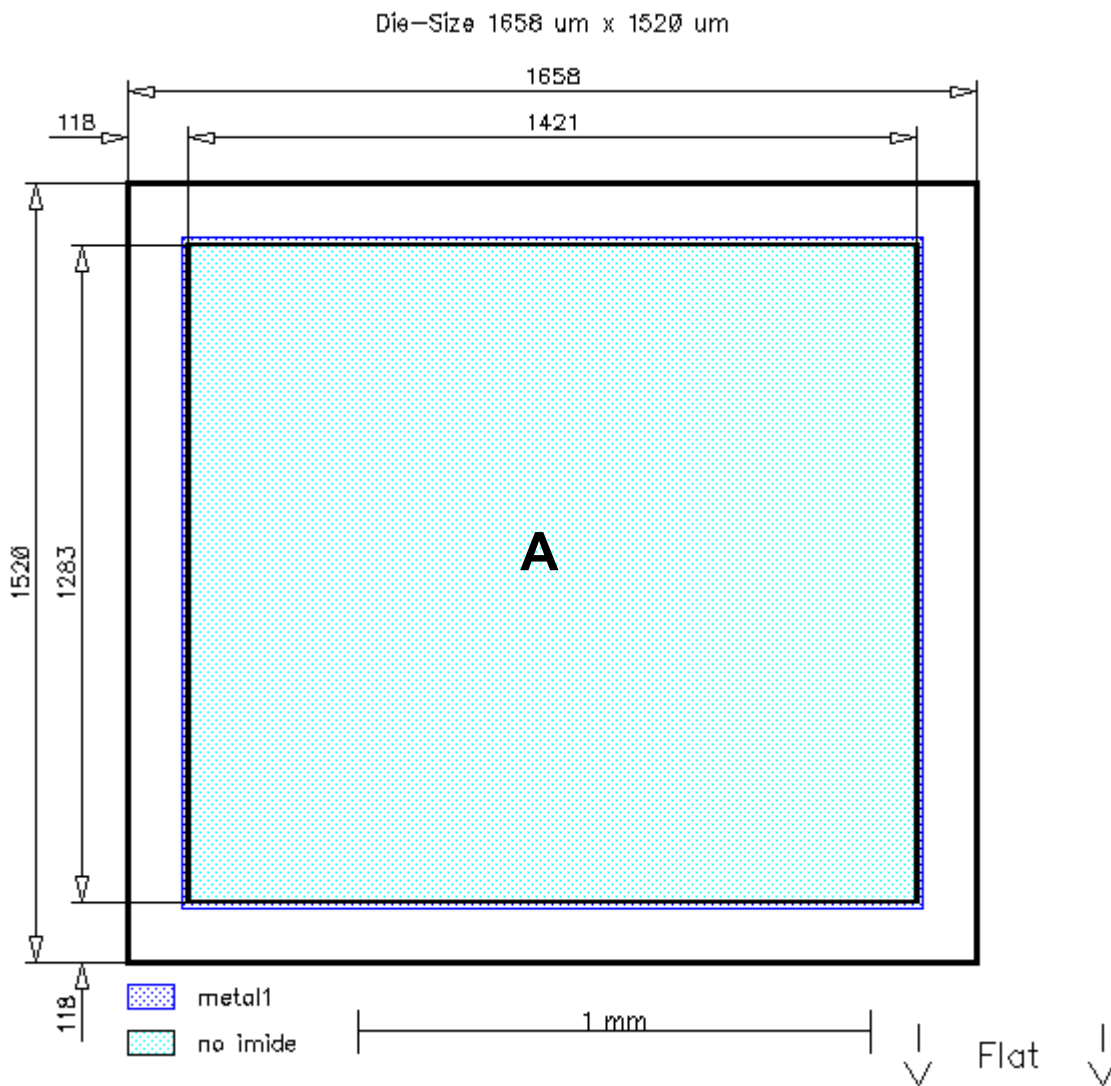
Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Reverse current	I_R	$V_R = 600\text{ V}$	$T_{vj} = 25\text{ °C}$		1	100	μA
Diode forward voltage	V_F	$I_F = 8\text{ A}$	$T_{vj} = 25\text{ °C}$		1.5	1.7	V

Dynamic Characteristics, at $T_{vj} = 25\text{ °C}$, unless otherwise specified, tested at component

Parameter	Symbol	Conditions		Value			Unit
				min.	Typ.	max.	
Total capacitive charge	Q_C	$I_F \leq I_{F,max}$ $di/dt = 200\text{ A}/\mu\text{s}$ $V_R = 400\text{ V}$	$T_{vj} = 150\text{ °C}$		19		nC
Switching time ¹⁾	t_c		$T_{vj} = 150\text{ °C}$			<10	ns
Total capacitance	C	$f = 1\text{ MHz}$	$V_R = 1\text{ V}$		310		pF
			$V_R = 300\text{ V}$		50		
			$V_R = 600\text{ V}$		50		

¹⁾ t_c is the time constant for the capacitive displacement current waveform (independent from T_{vj} , I_{LOAD} and di/dt), different from t_{rr} which is dependent on T_{vj} , I_{LOAD} and di/dt . No reverse recovery time constant t_{rr} due to absence of minority carrier injection

Chip drawing



A: Anode pad



IDC08S60CE

Description

AQL 0,65 for visual inspection according to failure catalog

Electrostatic Discharge Sensitive Device according to MIL-STD 883

Published by
Infineon Technologies AG
81726 Munich, Germany
© 2009 Infineon Technologies AG
All Rights Reserved.

Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

Information

For further information on technology, delivery terms and conditions and prices, please contact the nearest Infineon Technologies Office (www.infineon.com).

Warnings

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office. Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.