



IDC05S60C

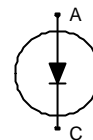
2nd generation thinQ!TM SiC Schottky Diode

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
IDC05S60C	600V	5A	1.45 x 1.162 mm ²	sawn on foil

MECHANICAL PARAMETER:

Raster size	1.45x 1.162	mm
Anode pad size	1.213 x 0.925	
Area total / active	1.68 / 1.22	mm ²
Thickness	355	µm
Wafer size	75	mm
Flat position	0	deg
Max. possible chips per wafer	2182 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, ≤ 350µm	
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	



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Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	V_{RRM}		600	V
DC blocking voltage	V_{DC}		600	
Continuous forward current limited by T_{jmax}	I_F		5	A
Surge non repetitive forward current sine halfwave	$I_{F,SM}$	$T_C=25^\circ C, t_P=10\text{ ms}$	42	
Repetitive peak forward current limited by T_{jmax}	$I_{F,RM}$	$T_C=100^\circ C, T_j=150^\circ C, D=0.1$	21	
Non-repetitive peak forward current	$I_{F,max}$	$T_C=25^\circ C, t_P=10\mu s$	180	
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 current	I_R	$V_R=600V$ $T_j=25^\circ C$		0.6	70	μA
Diode forward voltage	V_F	$I_F=5A$ $T_j=25^\circ C$		1.5	1.7	V

Dynamic Electrical Characteristics, at $T_j=25^\circ C$, unless otherwise specified, tested at component

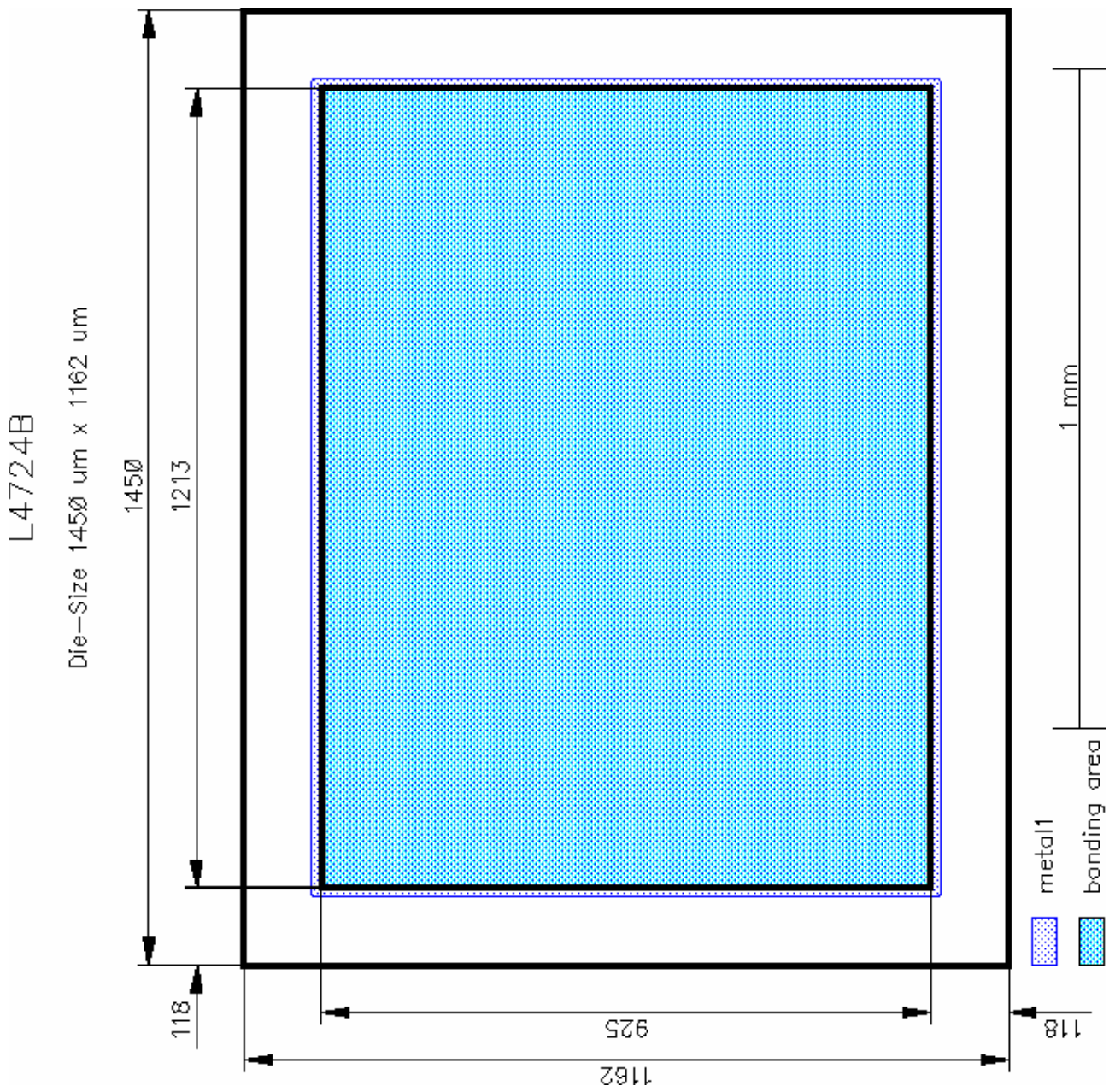
Parameter	Symbol	Conditions	Value			Unit
			min.	Typ.	max.	
Total capacitive charge	Q_C	$I_F \leq I_{F,max}$ $di/dt=200A/ms$ $V_R=400V$		12		nC
Switching time ¹⁾	t_c	$V_R=400V$			<10	ns
Total capacitance	C	$f=1MHz$	$V_R=1V$		240	pF
			$V_R=300V$		30	
			$V_R=600V$		30	

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



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CHIP DRAWING:





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FURTHER ELECTRICAL CHARACTERISTICS:

This chip data sheet refers to the device data sheet

INFINEON TECHNOLOGIES

IDT05S60C

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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