

Fast switching diode chip in EMCON 3 -Technology

Features:

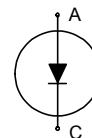
- 650V EMCON 3 technology 65 µm chip
- Soft, fast switching
- Low reverse recovery charge
- Small temperature coefficient
- Qualified according to JEDEC for target applications

Recommended for:

- Power module

Applications:

- Drives
- White goods
- Resonant applications



Chip Type	V_R	$I_{Fn}^{1)}$	Die Size	Package
SIDC38D65C8	650V	150A	4.9 x 7.8 mm ²	sawn on foil

¹⁾ nominal forward current at $T_c = 100^\circ\text{C}$, not subject to production test - verified by design/characterisation

Mechanical Parameters

Mechanical Parameters		
Die size	4.9 x 7.8	mm ²
Area total	38.22	
Anode pad size	4.2 x 7.1	
Thickness	65	µm
Wafer size	200	mm
Max. possible chips per wafer	694	
Passivation frontside	Photoimide	
Pad metal	3200 nm AlSiCu	
Backside metal	Ni Ag –system	
Die bond	Electrically conductive epoxy glue and soft solder	
Wire bond	Al, ≤500µm	
Reject ink dot size	Ø 0.65mm; max 1.2mm	
Storage environment	for original and sealed MBB bags	Ambient atmosphere air, Temperature 17°C – 25°C, < 6 month
	for open MBB bags	Acc. to IEC62258-3: Atmosphere >99% Nitrogen or inert gas, Humidity <25%RH, Temperature 17°C – 25°C, < 6 month



SIDC38D65C8

Maximum Ratings

Parameter	Symbol	Condition	Value	Unit
Repetitive peak reverse voltage	V_{RRM}	$T_{vj} = 25\text{ °C}$	650	V
Continuous forward current	I_F	$T_{vj} < 150\text{ °C}$	¹⁾	A
Maximum repetitive forward current ²⁾	I_{FRM}	$T_{vj} < 150\text{ °C}$	300	
Operating junction temperature	T_{vj}		-40...+175	°C

¹⁾ depending on thermal properties of assembly

²⁾ not subject to production test - verified by design/characterisation

Static Characteristics (tested on wafer), $T_{vj} = 25\text{ °C}$

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Reverse leakage current	I_R	$V_R = 650\text{ V}$			1.8	µA
Cathode-Anode breakdown Voltage	V_{BR}	$I_R = 0.25\text{ mA}$	650			V
Forward voltage drop	V_F	$I_F = 45\text{ A}$	1.03	1.17	1.32	

Electrical Characteristics (not subject to production test - verified by design/characterization)

Parameter		Symbol	Conditions	Value			Unit
				min.	typ.	max.	
Forward voltage drop	$T_{vj} = 25\text{ °C}$	V_F	$I_F = 150\text{ A}$		1.55	1.95	V
	$T_{vj} = 150\text{ °C}$				1.45		

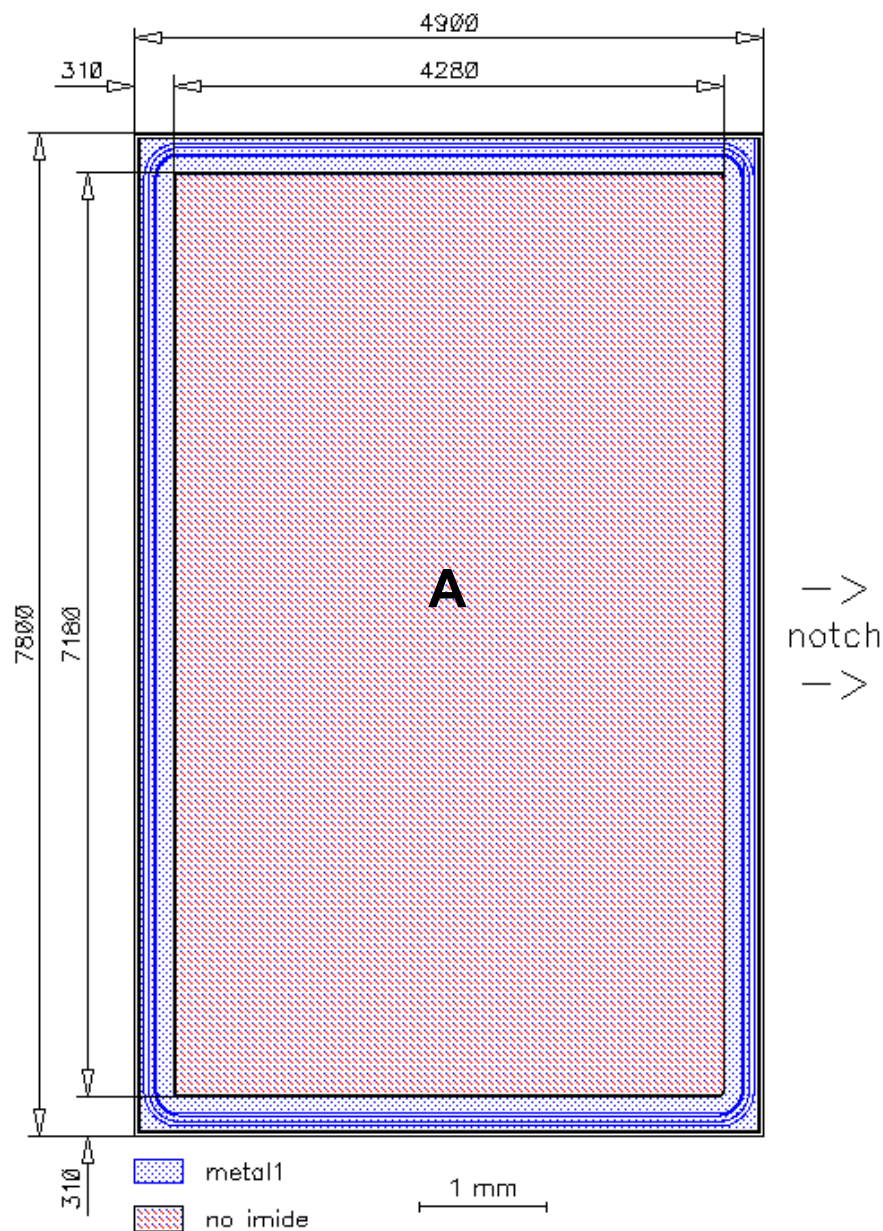
Further Electrical Characteristics

Switching characteristics and thermal properties are depending strongly on module design and mounting technology and can therefore not be specified for a bare die.

This chip data sheet refers to the device data sheet	FS150R07N3E4	Rev. 2.0
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Chip Drawing

Die-Size 4900 um x 7800 um



A: Anode pad



SIDC38D65C8

Description

AQL 0,65 for visual inspection according to failure catalogue

Electrostatic Discharge Sensitive Device according to MIL-STD 883

Revision History

Version	Subjects (major changes since last revision)	Date

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