

## 1. General description

Hyperfast power diode (Bare die without sawn).

## 2. Features and benefits

- Fast switching
- Low forward voltage drop
- Soft recovery characteristic
- Bare die

## 3. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Notes	Values			Unit
$V_{RRM}$	repetitive peak reverse voltage		[1]	600			V
$I_{F(AV)}$	average forward current	$\delta = 0.5$ ; square-wave pulse	[2]	2			A
Symbol	Parameter	Conditions	Notes	Min	Typ	Max	Unit
<b>Static characteristics</b>							
$V_F$	forward voltage	$I_F = 2\text{ A}$ ; $T_j = 25\text{ °C}$	[2]	0.70	1.40	1.70	V
<b>Dynamic characteristics</b>							
$Q_r$	recovered charge	$I_F = 1\text{ A}$ ; $di_F/dt = 20\text{ A}/\mu\text{s}$ ; $V_R = 20\text{ V}$ ; $T_j = 25\text{ °C}$	[2]	-	-	20	nC
$t_{rr}$	reverse recovery time	$I_F = 1\text{ A}$ ; $V_R = 30\text{ V}$ ; $di_F/dt = 100\text{ A}/\mu\text{s}$ ; $T_j = 25\text{ °C}$	[2]	-	30	-	ns

## 4. Ordering information

Table 2. Ordering information

Product type	Orderable part number	Description	Packing method
WB02FC60AL	WB02FC60ALZ	Bare die on wafer	Unsawn wafer, Vacuum packing

## 5. Limiting values

**Table 3. Limiting values**

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Notes	Values	Unit
$V_{RRM}$	repetitive peak reverse voltage		[1]	600	V
$V_{RWM}$	crest working reverse voltage		[1]	600	V
$V_R$	reverse voltage	DC	[1]	600	V
$I_{F(AV)}$	average forward current	$\delta = 0.5$ ; square-wave pulse	[2]	2	A
$I_{FRM}$	repetitive peak forward current	$\delta = 0.5$ ; $t_p = 25 \mu\text{s}$ ; square-wave pulse	[2]	4	A
$I_{FSM}$	non-repetitive peak forward current	$t_p = 10 \text{ ms}$ ; $T_{j(\text{init})} = 25 \text{ }^\circ\text{C}$ ; sine-wave pulse	[2]	10	A
		$t_p = 8.3 \text{ ms}$ ; $T_{j(\text{init})} = 25 \text{ }^\circ\text{C}$ ; sine-wave pulse	[2]	11	A
$V_{ESD}$	electrostatic discharge voltage	human body model (MIL-STD-883)	[2]	2000	V
$T_j$	junction temperature			-40 to 175	$^\circ\text{C}$

## 6. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Notes	Min	Typ	Max	Unit
<b>Static characteristics</b>							
$V_F$	forward voltage	$I_F = 2\text{ A}$ ; $T_J = 25\text{ °C}$	[2]	0.70	1.40	1.70	V
$I_R$	reverse current	$V_R = 600\text{ V}$ ; $T_J = 25\text{ °C}$	[1]	-	-	6	$\mu\text{A}$
		$V_R = 600\text{ V}$ ; $T_J = 125\text{ °C}$	[2]	-	-	0.2	mA
<b>Dynamic characteristics</b>							
$Q_r$	recovered charge	$I_F = 1\text{ A}$ ; $di_F/dt = 20\text{ A}/\mu\text{s}$ ; $V_R = 20\text{ V}$ ; $T_J = 25\text{ °C}$	[2]	-	-	20	nC
$t_{rr}$	reverse recovery time	$I_F = 1\text{ A}$ ; $V_R = 30\text{ V}$ ; $di_F/dt = 100\text{ A}/\mu\text{s}$ ; $T_J = 25\text{ °C}$	[2]	-	30	-	ns

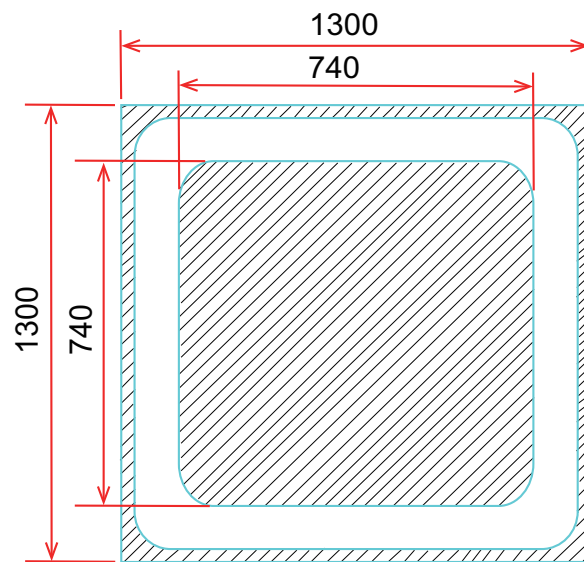
Notes:

[1] means that parameter are 100% test at  $T_{amb} = 25\text{ °C}$ .

[2] means that the guaranteed ratings and parameter limits will depend on the assembled structure. When correctly assembled with suitable die bonding and wire bonding, the device will have ratings and characteristics guaranteed in this data sheet.

MECHANICAL PATAMETER		
Chip size	1.3 x 1.3	mm <sup>2</sup>
Anode pad size	0.74 x 0.74	mm <sup>2</sup>
Area total / active	1.69 / 0.55	mm <sup>2</sup>
Thickness	300	µm
Wafer size	125	mm
Max possible chips per wafer	6732	pcs
Passivation	Glass	
Front metal	Al	
Back metal	Ti Ni Ag	

**CHIP LAYOUT**



**Die size: 1300µm x 1300µm**  
**Bond pad size: 740µm x 740µm**

## 7. Legal information

### Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

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