

## Circuit Diagram



## Product Summary

Characteristics	Value	Unit
$V_{RRM}$	650	V
$I_{F(AV)}$	110	A
Chip Dimensions	7x5	mm
unsawn wafer	Contact Bare Die Sales	
sawn on foil	Yes	
in waffle pack	Yes	

## Applications

- antiparallel diode for high frequency switching
- antisaturation diode
- snubber diode
- freewheeling diode in converters & motor control
- rectifiers in switch mode power supplies (SMPS)
- inductive heating & melting
- uninterruptible power supplies (UPS)
- ultrasonic cleaners & welders

## Features

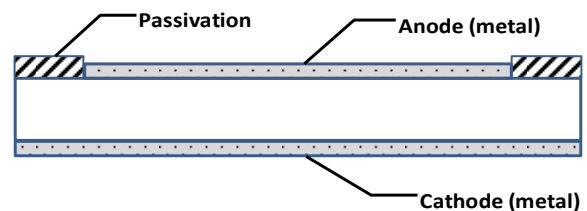
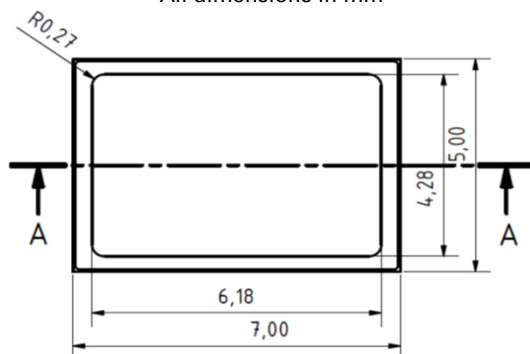
- fast, soft SONIC diode
- low forward voltage drop
- small temp. Coefficient
- low switching losses
- high ruggedness
- anode top
- $T_{vj} = 175^{\circ}\text{C}$

## Mechanical Characteristic

Characteristic	Conditions		Value	Unit
Area active			27,62	mm <sup>2</sup>
Area total			35,00	mm <sup>2</sup>
Thickness			70	μm
Wafer size Ø			150	mm
Die Per Wafer			415	
Material			Si	
Passivation front side			SiN	
Metalisation front side		bondable:	Al	
Metalisation back side		solderable (only):	Al/Ti/NiV/Ag	
Recom. wire bonds (Al)	Anode	Number	6	
*= stitch bonds		Ø	380	μm
Reject ink dot size		Ø	0.4 - 1.0	mm
Recom. solder temp.			<300	°C
Recom. Storage environment	sawn on foil	in org. container, in dry nitrogen	<6	month
	unsawn wafer	in org. container, in dry nitrogen	<2	year
	in waffle pack	in org. container, in dry nitrogen	<2	year
Storage temp.			-40...40	°C

## Dimensions

All dimensions in mm



## Electrical Parameters

Symbol	Conditions	Value			Unit
		Min	Typ	Max	

### Static Characteristics

$I_R$	$V = V_{RRM}$	$T_{vj} = 25^\circ\text{C}$		100	$\mu\text{A}$
		$T_{vj} = 150^\circ\text{C}$		1,8	$\text{mA}$
$V_F$	$I_f = 125\text{A}$	$T_{vj} = 25^\circ\text{C}$	1,40	1,60	V
		$T_{vj} = 150^\circ\text{C}$	1,35		V
$V_{FO}$	For power loss calculations only			1	V
$r_F$		$T_{vj} = 175^\circ\text{C}$		4,0	$\text{m}\Omega$
$T_{VJ}$			-55	175	$^\circ\text{C}$
$I_{F(AV)}$ *	DC	$T_c = 80^\circ\text{C}$	110		A
$I_{FSM}$ *	$V = 0\text{V}$	$T_{vj} = 45^\circ\text{C}$		500	A
$R_{thJC}$ *	DC current			0,6	K/W

### Dynamic Characteristics

$Q_{rr}$				-	$\mu\text{C}$
$I_{RM}$	$V = 300\text{V}$	$T_{vj} = 25^\circ\text{C}$		-	A
$t_{rr}$	$I_f = 125\text{A}$	$di/dt = 2000\text{A}/\mu\text{s}$		-	ns
$E_{rec}$				-	mJ
$Q_{rr}$				8	$\mu\text{C}$
$I_{RM}$	$V = 300\text{V}$	$T_{vj} = 150^\circ\text{C}$		90	A
$t_{rr}$	$I_f = 125\text{A}$	$di/dt = 2000\text{A}/\mu\text{s}$		150	ns
$E_{rec}$				1,5	mJ

 \* Data according to assembled 380 $\mu\text{m}$  DCB

Data according to IEC 60747

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