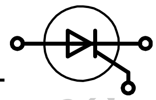
IXYS Thyristor Chip CWP 7-12

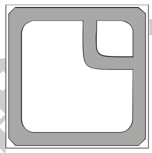
preliminary

Type	Ag*	Al*	V_{DRM} / V_{RRM} [V]	V_{DSM} / V_{RSM} [V]	$I_{T(AV)}$ [A]	Chip Size [mm] x [mm]	Package Options
CWP 7-12	☑	☑	1200	1300	19	4.45 4.45	sawn on foil ☑ unsawn wafer ☑ * in waffle pack ☑

*Frontside options

*Please contact IXYS chip sales





Mechanical Parameters

Area active	0.06	cm^2
Area total	0.20	cm^2
Wafer size Ø	150	mm
Thickness	290	µm
Material	Si	
Max. possible chips per wafer	682	
Passivation front side	Glassivation	
Metallization top side	solderable: Ti / Ni / Ag *	
top side	bondable: 4 µm Al	
Recom. wire bonds (Al)	Cathode	Gate
Number / Ø [µm]	6 / 300	1 / 300
Metallization backside	solderable (only): Ti / Ni / Ag *	
Reject Ink Dot Size	Ø 0.4-1.0	mm
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
T_{stg}	-40 ... 40	°C

*Sinterable top/bottom side on request

Features

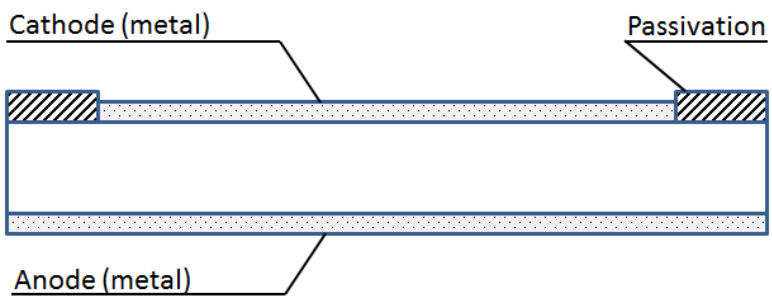
- planar passivated with guardring and channelstopper
- Planar front and back surface
- Non-structured anode contact on full area bottom side

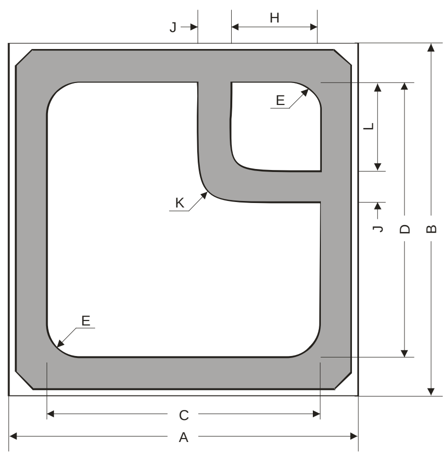
Applications

- DC motor control
- AC power control
- Softstart AC motor controller
- Light, heat and temperature control

Dimensions

A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	H [mm]	J [mm]	K [mm]	L [mm]
4.45	4.45	2.90	2.90	0.34	1.50	0.25	0.30	1.00





IXYS reserve the right to change limits, conditions and dimensions. 20160229a preliminary

Electrical parameters

Symbol	Conditions			min.	typ.	max.	
				Ratings			
I_R	V_D = Vr = Vrr	T_{VJ} = 25°C				0.05	mA
		T_{VJ} = 150°C				5	mA
V_T	I_T = 20 A	T_{VJ} = 25 °C				1.27	V
		T_{VJ} = 150 °C				1.24	V
V_{T0}	For power-loss calculations only					0.86	V
r_T	T_{VJ} = 150 °C					19.00	mΩ
V_{GT}	V_D = 6 V	T_{VJ} = 25°C				1.5	V
		T_{VJ} = -40°C				2.5	V
I_{GT}	V_D = 6 V	T_{VJ} = 25°C		13		24	mA
		T_{VJ} = -40°C				50	mA
V_{GD}	T_{VJ} = 125 °C	V = ⅔ V_{DRM}				0.2	V
I_{GD}						4	mA
I_L	t_p = 10 µs	T_{VJ} = 25°C	I_G = 0.1 A di_G/dt = 0.1 A/µs			75	mA
I_H	R_{GK} = ∞	T_{VJ} = 25°C	V_D = 6 V			60	mA
t_{gd}	V_D = ½ V_{DRM}	T_{VJ} = 25°C				2	µs
	I_G = 0.5 A	di_G/dt = 0.5 A/µ					
t_q	V_R = 100 V	I_T = 20 A	-di/dt = 10 A/µs			150	µs
	t_p = 200 µs	dv/dt = V/µs	V_D = ⅔ Vdrm T_{VJ} = 125 °C				
$(di/dt)_{cr}$	repetitive	I_T = 20 A				100	A/µs
	non repetitive	I_T = 19 A				500	A/µs
	V = ⅔ V_{DRM}	T_{VJ} = 150 °C	di_G/dt = 0.1 A/µs				
	I_G = 0.1 A	t_p = 200 µs	f = 50 Hz				
$(dv/dt)_{cr}$	T_{VJ} = 150 °C	V_{DR} = ⅔ V_{DRM}				500	V/µs
	R_{GK} = ∞	method 1 (linear voltage rise)					
P_{GM}	T_{VJ} = 125 °C	t_p = 30 µs				10	W
		t_p = 3E µs				5	W
P_{GAV}						0.5	W
V_{RGM}						10	V
T_{VJ}				-40		150	°C
$I_{T(AV)}$	T_C = 100 °C	180° rect.				19	A
	T_{VJ} = 150 °C	180° sine				18	A
I_{TSM} *	T_{VJ} = 45°C	t = 10 ms (50) Hz, sine				180	A
	V_R = 0 V	t = 8.3 ms (60) Hz, sine				210	A
	T_{VJ} = 150 °C	t = 10 ms (50) Hz, sine				170	A
	V_R = 0 V	t = 8.3 ms (60) Hz, sine				180	A
I^2t *	T_{VJ} = 45°C	t = 10 ms (50) Hz, sine				162	A^2s
	V_R = 0 V	t = 8.3 ms (60) Hz, sine				183	A^2s
	T_{VJ} = 150 °C	t = 10 ms (50) Hz, sine				145	A^2s
	V_R = 0 V	t = 8.3 ms (60) Hz, sine				134	A^2s
R_{thJC} *	DC current				1.7		K/W

* Data according to assembled product CS 19

Data according to IEC 60747

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- the conclusion of quality agreements;

- to establish joint measures to ensure application specific product capabilities and notify that IXYS may delivery dependent on the realization of any such measures.