IXYS Thyristor Chip CWP 590-18

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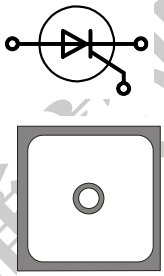
Type	Ag* Al*	V_{DRM} / V_{RRM}	V_{DSM} / V_{RSM} [V]	$I_{T(AV)}$ [A]	Chip Size [mm] x [mm]	Package Options
CWP 590-18	☐ ☑	1800	1900	423	24.30 24.3	sawn on foil ☑ unsawn wafer ☑ * in waffle pack ☑

*Frontside options

*Please contact IXYS chip sales



Mechanical Parameters

Area active	4.47	cm^2	
Area total	5.90	cm^2	
Wafer size Ø	150	mm	
Thickness	380	µm	
Material	Si		
Max. possible chips per wafer	21		
Passivation front side	Glassivation		
Metallization top side	solderable: Ti / Ni / Ag *		
top side	bondable: Al		
Recom. wire bonds (Al)	Cathode	Gate	
* = Stitchbonds Number / Ø [µm]	60* / 500	1 / 500	
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

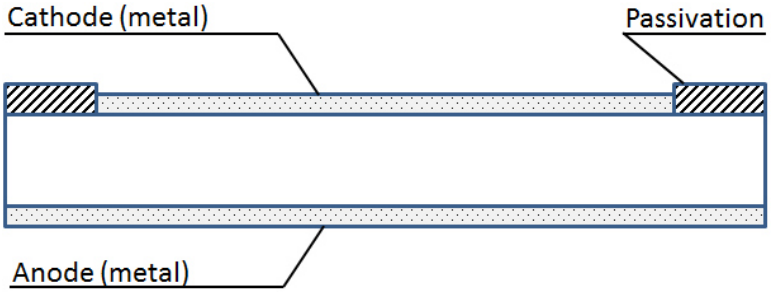
- planar design (non-mesa)
- ultra rugged for easy assembly (flat backside)
- excellent long term stability
- very low leakage current
- very low forward voltage drop

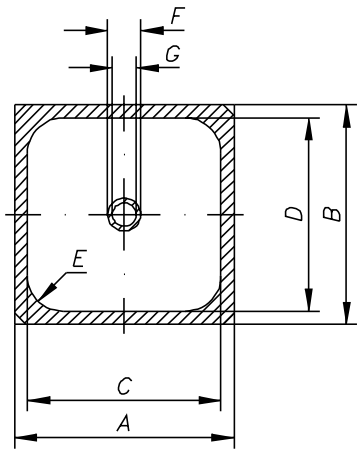
Applications

- DC motor control
- AC power control
- Softstrart AC motor controller
- Light, heat and temperature control
- Solid state relays
- Controlled rectifier circuits

Dimensions

A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
24.30	24.30	21.70	21.70	2.00





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Electrical parameters

Symbol	Conditions		Ratings min.	typ.	max.	
I_R	V_D = Vr = Vrr	T_{VJ} = 25°C			0.5	mA
		T_{VJ} = 150°C			60	mA
V_T	I_T = 600 A	T_{VJ} = 25 °C			1.20	V
		T_{VJ} = 150 °C			1.17	V
V_{T0}	For power-loss calculations only				0.98	V
r_T	T_{VJ} = 150 °C				0.32	mΩ
V_{GT}	V_D = 6 V	T_{VJ} = 25°C			1.4	V
		T_{VJ} = -40°C			3	V
I_{GT}	V_D = 6 V	T_{VJ} = 25°C			145	mA
		T_{VJ} = -40°C			220	mA
V_{GD}	T_{VJ} = 150 °C	V = ⅔ V_{DRM}			0.25	V
I_{GD}					10	mA
I_L	t_p = 30 µs	T_{VJ} = 25°C I_G = 0.45 A di_G/dt = 0.45 A/µs			350	mA
I_H	R_{GK} = ∞	T_{VJ} = 25°C V_D = 6 V			190	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 = 600 A -di/dt = 10 A/µs				µs
	t_p = 200 µs	dv/dt = 50 V/µs V_D = ⅔ Vdrm T_{VJ} = 150 °C				
$(di/dt)_{cr}$	repetitive	I_T = 750 A			100	A/µs
	non repetitive	I_T = 423 A			0	A/µs
	V = ⅔ V_{DRM}	T_{VJ} = 150 °C di_G/dt = 0.45 A/µs				
	I_G = 0.45 A	t_p = 200 µs f = 50 Hz				
$(dv/dt)_{cr}$	T_{VJ} = 150 °C	V_{DR} = ⅔ V_{DRM}			1000	V/µs
	R_{GK} = ∞	method 1 (linear voltage rise)				
P_{GM}	T_{VJ} = 150 °C	t_p = 30 µs			120	W
		t_p = 5E µs			60	W
P_{GAV}					20	W
V_{RGM}					10	V
T_{VJ}			-40		150	°C
$I_{T(AV)}$	T_C = 100 °C	180° rect.			423	A
	T_{VJ} = °C	180° sine			tbd	A
I_{TSM} *	T_{VJ} = 45°C	t = 10 ms (50) Hz, sine			9300	A
	V_R = 0 V	t = 8.3 ms (60) Hz, sine			tbd	A
	T_{VJ} = 150 °C	t = 10 ms (50) Hz, sine			tbd	A
	V_R = 0 V	t = 8.3 ms (60) Hz, sine			tbd	A
I^2t *	T_{VJ} = 45°C	t = 10 ms (50) Hz, sine			432450	A^2s
	V_R = 0 V	t = 8.3 ms (60) Hz, sine			tbd	A^2s
	T_{VJ} = 150 °C	t = 10 ms (50) Hz, sine			tbd	A^2s
	V_R = 0 V	t = 8.3 ms (60) Hz, sine			tbd	A^2s
R_{thJC} *	DC current			0.102		K/W

* Data according to assembled product (soldered chip)

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.