IXYS Thyristor Chip CWP 93-18

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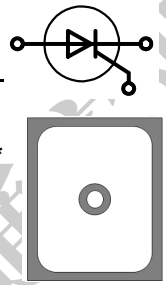
Type	Ag* Al*	V_{DRM} / V_{RRM}	V_{DSM} / V_{RSM} [V]	$I_{T(AV)}$ [A]	Chip Size [mm] x [mm]	Package Options
CWP 93-18	☑ ☑	1800	1900	165	15.20 12.0	sawn on foil ☑ unsawn wafer ☑ * in waffle pack ☑

*Frontside options

*Please contact IXYS chip sales



Mechanical Parameters

Area active	1.10	cm^2	
Area total	1.82	cm^2	
Wafer size Ø	150	mm	
Thickness	380	µm	
Material	Si		
Max. possible chips per wafer	72		
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]	*8 / 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

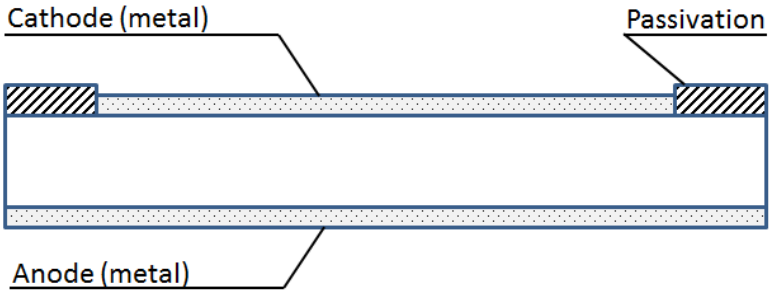
- planar design (non-mesa)
- ultra rugged for easy assembly (flat backside)
- excellent long term stability
- very low leakage current
- very low forward voltage drop

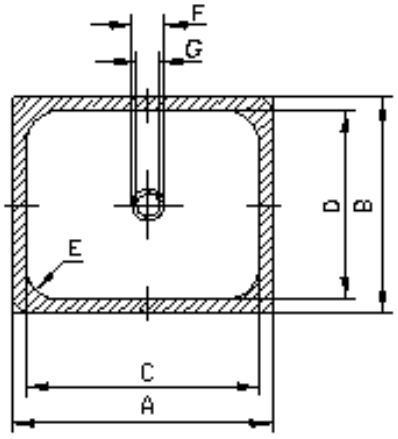
Applications

- 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]	F [mm]	G [mm]
15.20	12.00	12.60	9.30	1.10	2.80	2.10





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Electrical parameters

Symbol	Conditions			Ratings min.	typ.	max.	
I_R	V_D = Vr = Vrr	T_{VJ} = 25°C				0.05	mA
		T_{VJ} = 150°C				20	mA
V_T	I_T = 300 A	T_{VJ} = 25 °C				1.40	V
		T_{VJ} = 150 °C				1.35	V
V_{T0}	For power-loss calculations only					0.89	V
r_T	T_{VJ} = 150 °C					1.50	mΩ
V_{GT}	V_D = 6 V	T_{VJ} = 25°C				1.4	V
		T_{VJ} = -40°C				1.5	V
I_{GT}	V_D = 6 V	T_{VJ} = 25°C		40		145	mA
		T_{VJ} = -40°C				tbd	mA
V_{GD}	T_{VJ} = 150 °C	V = ⅔ V_{DRM}				0.2	V
I_{GD}						10	mA
I_L	t_p = 10 µs	T_{VJ} = 25°C	I_G = 0.45 A di_G/dt = 0.45 A/µs			450	mA
I_H	R_{GK} = ∞	T_{VJ} = 25°C	V_D = 6 V			200	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 = 165 A	-di/dt = 10 A/µs				µs
	t_p = 200 µs	dv/dt = 20 V/µs	V_D = ⅔ Vdrm T_{VJ} = 125 °C				
$(di/dt)_{cr}$	repetitive	I_T = 250 A				150	A/µs
	non repetitive	I_T = 165 A				200	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				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.				165	A
	T_{VJ} = °C	180° sine				155	A
I_{TSM} *	T_{VJ} = 45°C	t = 10 ms (50) Hz, sine				2200	A
	V_R = 0 V	t = 8.3 ms (60) Hz, sine				2400	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				24200	A^2s
	V_R = 0 V	t = 8.3 ms (60) Hz, sine				23904	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				0.22		K/W

* Data according to assembled product

Data according to IEC 60747

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- the conclusion of quality agreements;

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