

Phase Control Thyristors

-Phaseleg Topology-
in ISOPLUS i4-PAC™

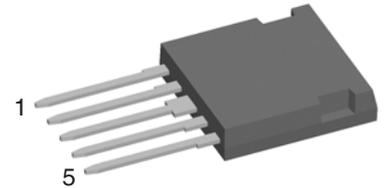
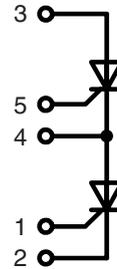
$$V_{DRM} = V_{RRM} = 1200 \text{ V}$$

$$I_{T(AV)} = 21 \text{ A}$$

$$I_{TSM} = 300 \text{ A}$$

Preliminary Data

V_{RSM}	V_{RRM}	Type
V_{DSM}	V_{DRM}	
V	V	
1300	1200	FCC 21-12io



Thyristors

Symbol	Conditions	Maximum Ratings	
V_{DRM}, V_{RRM}		1200	V
$I_{T(AV)}$	sine 180°; $T_C = 90^\circ\text{C}$	21	A
$I_{T(AV)}$	square; $d = 1/3$; $T_C = 90^\circ\text{C}$	20	A
I_{TSM}	sine 180°; $t = 10 \text{ ms}$; $V_R = 0 \text{ V}$; $T_{VJ} = 25^\circ\text{C}$	300	A
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ repetitive, $I_T = 40 \text{ A}$ $f = 50 \text{ Hz}$, $t_p = 200 \mu\text{s}$ $V_D = 2/3 V_{DRM}$ $I_G = 0.3 \text{ A}$ non repetitive, $I_T = 30 \text{ A}$ $di_G/dt = 0.3 \text{ A}/\mu\text{s}$	150	A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise)	1000	V/ μs

Features

- Thyristor
 - for line frequency
 - chip technology for long term stability
- ISOPLUS i4-PAC™ package
 - isolated back surface
 - UL registered E 72873
 - low coupling capacity between pins and heatsink
 - enlarged creepage towards heatsink
 - application friendly pinout
 - high reliability
 - industry standard outline

Applications

- controlled rectifiers
- power supplies
- drives
- AC switches

Symbol	Conditions	Characteristic Values ($T_{VJ} = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_T	$I_T = 30 \text{ A}$; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$		1.3	V
V_{GT}	$V_D = 6 \text{ V}$		1.4	V
I_{GT}			55	mA
V_{GD}	$T_{VJ} = T_{VJM}$; $V_D = 2/3 V_{DRM}$		0.2	V
I_{GD}			5	mA
I_L	$t_p = 10 \mu\text{s}$; $V_D = 6 \text{ V}$ $I_G = 0.3 \text{ A}$; $di_G/dt = 0.3 \text{ A}/\mu\text{s}$		150	mA
I_H	$V_D = 6 \text{ V}$; $R_{GK} = \infty$		100	mA
t_{gd}	$V_D = 1/2 V_{DRM}$; $V_D = 6 \text{ V}$ $I_G = 0.3 \text{ A}$; $di_G/dt = 0.3 \text{ A}/\mu\text{s}$		2	μs
I_R, I_D	$V_R = V_{RRM}$; $V_D = V_{DRM}$; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$	0.5		50 μA mA
R_{thJC}	DC current			1.0 K/W
R_{thJH}		1.32		K/W

IXYS reserves the right to change limits, test conditions and dimensions.

Component

Symbol	Conditions	Maximum Ratings	
T_{VJ}		-40...+125	°C
T_{stg}		-55...+125	°C
V_{ISOL}	$I_{ISOL} \leq 1 \text{ mA}; 50/60 \text{ Hz}$	2500	V~
F_c	mounting force with clip	20...120	N

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
C_p	coupling capacity between shorted pins and mounting tab in the case		40	pF
d_s, d_A	pin - pin	1.7		mm
d_s, d_A	pin - backside metal	5.5		mm
Weight			9	g

Dimensions in mm (1 mm = 0.0394")
