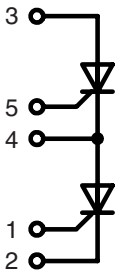
Phase Control Thyristors

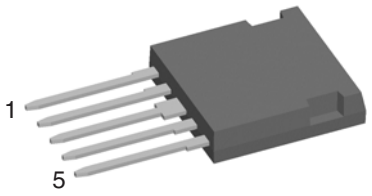
-Phaseleg Topology-
in ISOPLUS i4-PAC™

Preliminary Data

$V_{DRM} = V_{RRM}$ = 1200 V
$I_{T(AV)}$ = 21 A
I_{TSM} = 300 A

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





Thyristors

Symbol	Conditions		Maximum Ratings	
V_{DRM}, V_{RRM}			1200	V
$I_{T(AV)}$	sine 180°; T_C = 90°C		21	A
$I_{T(AV)}$	square; d = 1/3; T_C = 90°C		20	A
I_{TSM}	sine 180°; t = 10 ms; V_R = 0 V; T_{VJ} = 25°C		300	A
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50 Hz, t_P = 200 µs V_D = 2/3 V_{DRM} I_G = 0.3 A di_G/dt = 0.3 A/µs	repetitive, I_T = 40 A	150	A/µs
		non repetitive, I_T = 30 A	500	A/µs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; V_{DR} = 2/3 V_{DRM} R_{GK} = ∞; method 1 (linear voltage rise)		1000	V/µs

Symbol	Conditions	Characteristic Values (T_{VJ} = 25°C, unless otherwise specified) min.	typ.	max.	
V_T	I_T = 30 A; T_{VJ} = 25°C			1.3	V
	T_{VJ} =125°C		1.3		V
V_{GT}	V_D = 6 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 µs; V_D = 6 V I_G = 0.3 A; di_G/dt = 0.3 A/µs			150	mA
I_H	V_D = 6 V; R_{GK} = ∞			100	mA
t_{gd}	V_D = ½ $V_{DRM;}$ V_D = 6 V I_G = 0.3 A; di_G/dt = 0.3 A/µs			2	µs
I_R, I_D	$V_R = V_{RRM}$; $V_D = V_{DRM}$; T_{VJ} = 25°C			50	µA
	T_{VJ} = 125°C		0.5		mA
R_{thJC}	DC current			1.0	K/W
R_{thJH}			1.32		K/W

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

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

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Component

Symbol	Conditions	Maximum Ratings	
T_{VJ}		-40...+125	°C
T_{stg}		-55...+125	°C
V_{ISOL}	$I_{ISOL} \leq 1$ mA; 50/60 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")