

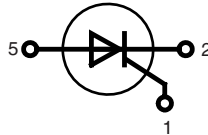
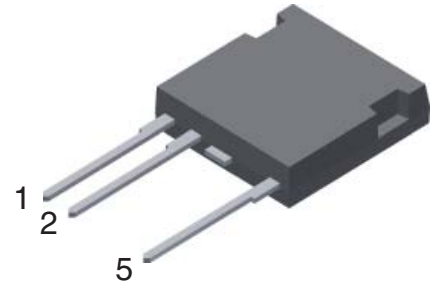
# High Voltage Phase Control Thyristor

in High Voltage  
ISOPLUS i4-PAC™

$$V_{\text{DRM}} = 2200 \text{ V}$$

$$I_{\text{TSM}} = 200 \text{ A}$$

**Part number**  
CNA30E2200PB



#### Features / Advantages:

- high voltage thyristor
  - for line frequency
  - chip technology for long term stability
- ISOPLUS i4-PAC™ high voltage package
  - isolated back surface
  - enlarged creepage towards heatsink
  - enlarged creepage between high voltage pins
  - application friendly pinout
  - high reliability
  - industry standard outline

#### Applications:

- controlled rectifiers
  - power supplies
  - drives
- AC switches
- capacitor discharge control
  - flash tubes
  - X-ray and laser generators

#### Package: i4-Pac

- Isolation Voltage: 3000 V~
- Industry convenient outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

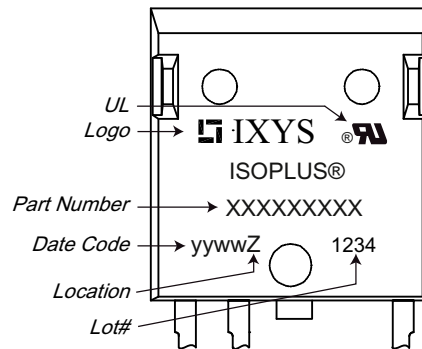
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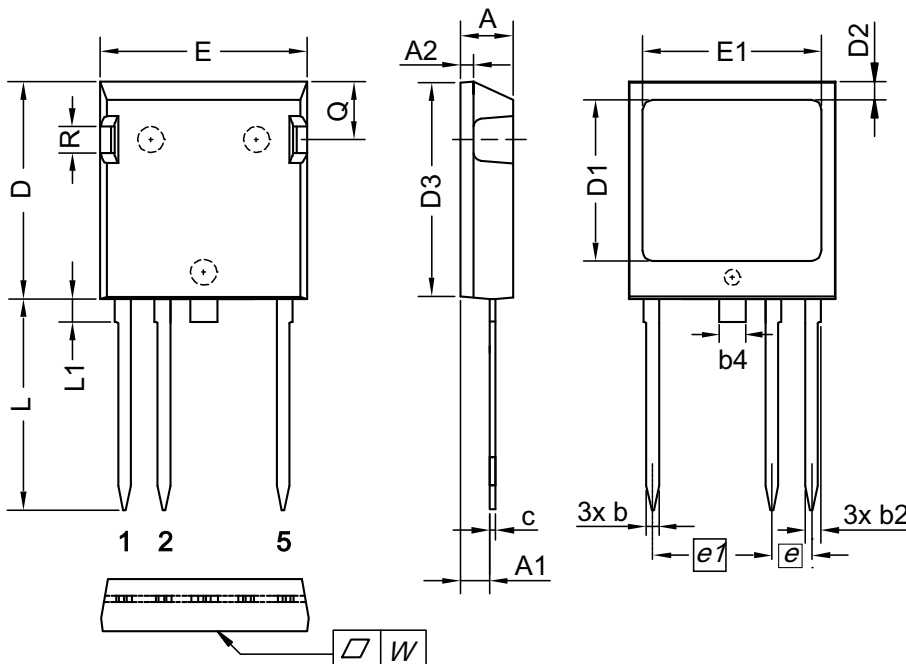
Thyristor			Ratings			
Symbol	Definitions	Conditions	min.	typ.	max.	Unit
$V_{DRM}$	max. repetitive forward blocking voltage				2200	V
$V_{DSM}$	max. non-repetitive forward blocking voltage				2300	V
$V_{RRM} / RSM$	max. repetitive reverse voltage / max. non-repetitive reverse voltage				1650	V
$I_{TSM}$	max. surge on-state current	sine 180°; t = 10 ms; $V_R = 0$ V $T_{VJ} = 25^\circ\text{C}$			200	A
$(di/dt)_{cr}$	critical rate of rise of current	f = 50 Hz; $t_p = 200$ $\mu\text{s}$ ; $V_D = 2000$ V $di_G/dt = 0.45$ A/ $\mu\text{s}$ ; $I_G = 0.45$ A non repetitive; $I_T = 45$ A			150	A/ $\mu\text{s}$
$(dv/dt)_{cr}$	critical rate of rise of voltage	$V_D = 2200$ V $R_{GK} = \infty$ ; method 1 (linear voltage rise)			5000	V/ $\mu\text{s}$
$V_T$	forward voltage	$I_T = 45$ A $T_{VJ} = 25^\circ\text{C}$			3.0	V
$V_{GT}$ $I_{GT}$	gate trigger voltage gate trigger current	$V_D = 6$ V $T_{VJ} = 25^\circ\text{C}$			2.5 250	V mA
$V_{GD}$ $I_{GD}$	gate non-trigger voltage gate non-trigger current	$V_D = 2/3 V_{DRM}$ $T_{VJ} = 25^\circ\text{C}$			0.2 5	V mA
$I_L$	latching current	$t_p = 10$ $\mu\text{s}$ ; $V_D = 6$ V $I_G = 0.45$ A; $di_G/dt = 0.45$ A/ $\mu\text{s}$			700	mA
$I_H$	holding current	$V_D = 6$ V; $R_{GK} = \infty$ $T_{VJ} = 0^\circ\text{C}$ $T_{VJ} = 70^\circ\text{C}$	55		300	mA mA
$t_q$	turn-off time	$I_T = 20$ A; $t_p = 300$ $\mu\text{s}$ ; $di/dt = -20$ A/ $\mu\text{s}$ $V_R = 10$ V; $dv/dt = 20$ V/ $\mu\text{s}$ $V_D = 800$ V $T_{VJ} = 70^\circ\text{C}$		100		$\mu\text{s}$
$I_{RRM}$ $I_{DRM}$	max. repetitive reverse current max. repetitive off-state current	$V_R = V_{RRM}$ ; $V_D = V_{DRM}$ $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 70^\circ\text{C}$			50 200	$\mu\text{A}$ $\mu\text{A}$
$I_{DSM} / RSM$	max. single pulse reverse current	$V_R = V_{RSM}$ ; $V_D = V_{DSM}$ $T_{VJ} = 70^\circ\text{C}$			2	mA

Package I4-Pac			Ratings			
Symbol	Definitions	Conditions	min.	typ.	max.	Unit
$I_{RMS}$	RMS current	per terminal			70	A
$T_{VJ}$	virtual junction temperature		-40		70	°C
$T_{op}$	operation temperature		-40		70	°C
$T_{stg}$	storage temperature		-40		70	°C
<b>Weight</b>				5.5		g
$F_c$	mounting force with clip		20		120	N
$d_{Spp/App}$ $d_{Spb/Apb}$	creepage distance on surface   striking distance through air	terminal to terminal terminal to backside	7.2 5.1			mm mm
$V_{ISOL}$	isolation voltage	t = 1 second t = 1 minute	50/60 Hz, RMS, $I_{ISOL} \leq 1$ mA	3000		V
				2500		V

### Product Marking



Dimensions in mm (1 mm = 0.0394")



Dim.	Millimeter		Inches	
	min	max	min	max
A	4.83	5.21	0.190	0.205
A1	2.59	3.00	0.102	0.118
A2	1.17	2.16	0.046	0.085
b	1.14	1.40	0.045	0.055
b2	1.47	1.73	0.058	0.068
b4	2.54	2.79	0.100	0.110
c	0.51	0.74	0.020	0.029
D	20.80	21.34	0.819	0.840
D1	14.99	15.75	0.590	0.620
D2	1.65	2.03	0.065	0.080
D3	20.30	20.70	0.799	0.815
E	19.56	20.29	0.770	0.799
E1	16.76	17.53	0.660	0.690
e	3.81 BSC		0.150 BSC	
e1	11.43 BSC		0.450 BSC	
L	19.81	21.34	0.780	0.840
L1	2.11	2.59	0.083	0.102
Q	5.33	6.20	0.210	0.244
R	2.54	4.57	0.100	0.180
W	-	0.10	-	0.004

Die konvexe Form des Substrates ist typ. < 0.05 mm über der Kunststoffoberfläche der Bauteilunterseite  
 The convexbow of substrate is typ. < 0.05 mm over plastic surface level of device bottom side

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

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