

Phase Control Thyristor

ISOPLUS220™

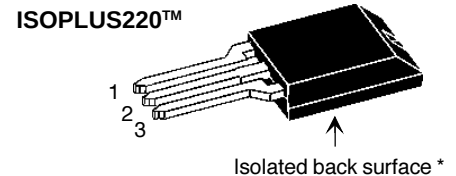
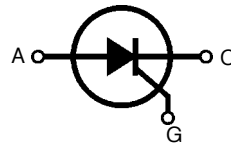
Electrically Isolated Back Surface

$$V_{RRM} = 800 - 1200 \text{ V}$$

$$I_{T(RMS)} = 35 \text{ A}$$

$$I_{T(AV)M} = 23 \text{ A}$$

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
800	800	CS 29-08io1C
1200	1200	CS 29-12io1C



* Patent pending

Symbol	Test Conditions	Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$	35	A
$I_{T(AV)M}$	$T_C = 95^\circ\text{C}$; 180° sine ($I_{T(RMS)}$ current limit)	23	A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	200	A
	$V_R = 0 \text{ V}$; $t = 8.3 \text{ ms}$ (60 Hz), sine	215	A
	$T_{VJ} = T_{VJM}$; $t = 10 \text{ ms}$ (50 Hz), sine	175	A
	$V_R = 0 \text{ V}$; $t = 8.3 \text{ ms}$ (60 Hz), sine	185	A
I^2t	$T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	200	A^2s
	$V_R = 0 \text{ V}$; $t = 8.3 \text{ ms}$ (60 Hz), sine	195	A^2s
	$T_{VJ} = T_{VJM}$; $t = 10 \text{ ms}$ (50 Hz), sine	155	A^2s
	$V_R = 0 \text{ V}$; $t = 8.3 \text{ ms}$ (60 Hz), sine	145	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ repetitive, $I_T = 40 \text{ A}$ $f = 50 \text{ Hz}$, $t_p = 200 \mu\text{s}$ $V_D = 2/3 V_{DRM}$	150	$\text{A}/\mu\text{s}$
	$I_G = 0.2 \text{ A}$ non repetitive, $I_T = I_{T(AV)M}$ $di_G/dt = 0.2 \text{ A}/\mu\text{s}$	500	$\text{A}/\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise)	1000	$\text{V}/\mu\text{s}$
P_{GM}	$T_{VJ} = T_{VJM}$ $t_p = 30 \mu\text{s}$	5	W
P_{GAV}	$I_T = I_{T(AV)M}$ $t_p = 300 \mu\text{s}$	2.5	W
		0.5	W
V_{RGM}		10	V
T_{VJ}		-40...+150	$^\circ\text{C}$
T_{VJM}		150	$^\circ\text{C}$
T_{stg}		-40...+150	$^\circ\text{C}$
V_{ISOL}	50/60 Hz RMS; $I_{ISOL} \leq 1 \text{ mA}$	2500	V~
T_L	1.6mm from case; 10s	260	$^\circ\text{C}$
F_C	Mounting force	11...65 / 2.4...11	N / lb
Weight		2	g

See CS 29..io1 data sheet for electrical characteristic curves.

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

Features

Features

- Silicon chip on Direct-Copper-Bond substrate
- High power dissipation
- Isolated mounting surface
- 2500V electrical isolation
- Low cathode-to-tab capacitance (15pF typical)
- Planar passivated chips
- Epoxy meets UL 94V-0
- High performance glass passivated chip
- Long-term stability of leakage current and blocking voltage

Applications

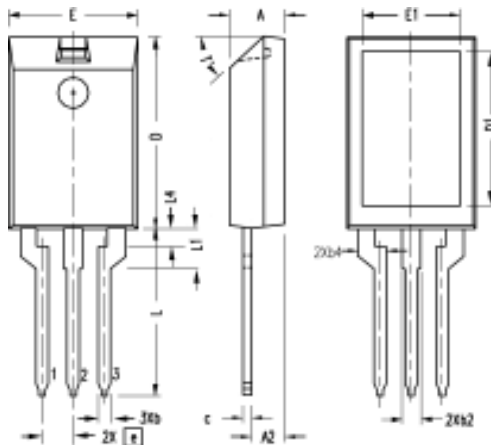
- Motor control
- Power converter
- AC power controller
- Light and temperature control
- SCR for inrush current limiting in power supplies or AC drive

Advantages

- Space and weight savings
- Simple mounting

Symbol	Test Conditions	Characteristic Values	
I_R, I_D	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	$\leq$	2 mA
V_T	$I_T = 45 \text{ A}; T_{VJ} = 25^\circ\text{C}$	$\leq$	1.5 V
V_{T0}	For power-loss calculations only ($T_{VJ} = 125^\circ\text{C}$)	0.82	V
r_T		16.5	m Ω
V_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	$\leq$	1.0 V
	$T_{VJ} = -40^\circ\text{C}$	$\leq$	1.2 V
I_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	$\leq$	65 mA
	$T_{VJ} = -40^\circ\text{C}$	$\leq$	80 mA
V_{GD}	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	$\leq$	0.2 V
I_{GD}		$\leq$	5 mA
I_L	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}$ $I_G = 0.2; di_G/dt = 0.2 \text{ A}/\mu\text{s}$	$\leq$	150 mA
I_H	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	$\leq$	50 mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.2 \text{ A}; di_G/dt = 0.2 \text{ A}/\mu\text{s}$	$\leq$	2 μs
R_{thJC}	DC current	1.2	K/W
R_{thCK}	DC current	typical 0.6	K/W
a	Max. acceleration, 50 Hz	50	m/s ²

ISOPLUS220 OUTLINE



SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.157	.197	4.00	5.00
A2	.098	.118	2.50	3.00
b	.035	.051	0.90	1.30
b2	.049	.065	1.25	1.65
b4	.093	.100	2.35	2.55
c	.028	.039	0.70	1.00
D	.591	.630	15.00	16.00
D1	.472	.512	12.00	13.00
E	.394	.433	10.00	11.00
E1	.295	.335	7.50	8.50
e	.100 BASIC		2.55 BASIC	
L	.512	.571	13.00	14.50
L1	.118	.138	3.00	3.50
L4	.039	.059	1.00	1.50
T*			42.5*	47.5*

Note: All terminals are solder plated.

- 1 - Cathode
- 2 - Anode
- 3 - Gate