IXYS **ADVANCE TECHNICAL INFORMATION** **CS 19**

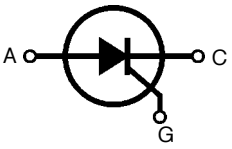
Phase Control Thyristor

V_{RRM} = 800 - 1200 V
$I_{T(RMS)}$ = 35 A
$I_{T(AV)M}$ = 13 A

ISOPLUS220™

Electrically Isolated Back Surface

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
800	800	CS 19-08ho1C
1200	1200	CS 19-12ho1C



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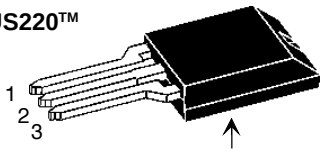

Isolated back surface *

* Patent pending

Symbol	Test Conditions		Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$		35	A
$I_{T(AV)M}$	T_C = 85°C; 180° sine		13	A
I_{TSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	100	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	105	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	85	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	90	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	50	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	45	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	36	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	33	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$	repetitive, I_T = 20 A	100	A/µs
	f = 50 Hz, t_P = 200 µs			
	V_D = 2/3 V_{DRM}			
	I_G = 0.08 A	non repetitive, $I_T = I_{T(AV)M}$	500	A/µs
	di_G/dt = 0.08 A/µs			
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$;	V_{DR} = 2/3 V_{DRM}	500	V/µs
	R_{GK} = ∞; method 1 (linear voltage rise)			
P_{GM}	$T_{VJ} = T_{VJM}$	t_P = 30 µs	5	W
	$I_T = I_{T(AV)M}$	t_P = 300 µs	2.5	W
P_{GAV}			0.5	W
V_{RGM}			10	V
T_{VJ}			-40...+125	°C
T_{VJM}			125	°C
T_{stg}			-40...+125	°C
V_{ISOL}	50/60 Hz RMS; $I_{ISOL} \leq$ 1 mA		2500	V~
T_L	1.6mm from case; 10s		260	°C
F_C	Mounting force		11...65 / 2.4...11	N / lb
Weight			2	g

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

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

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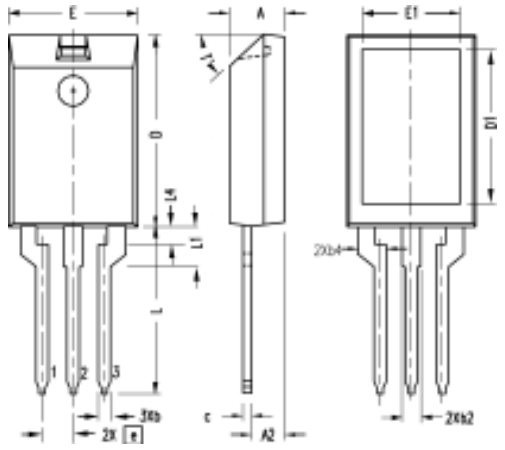
Symbol	Test Conditions		Characteristic Values		
I_R, I_D	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$		≤	1	mA
V_T	I_T = 30 A; T_{VJ} = 25°C		≤	1.65	V
V_{T0}	For power-loss calculations only (T_{VJ} = 125°C)			0.87	V
r_T				29	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	1.5	V
		T_{VJ} = -40°C	≤	2.5	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	25	mA
		T_{VJ} = -40°C	≤	50	mA
V_{GD}	$T_{VJ} = T_{VJM}$;	V_D = 2/3 V_{DRM}	≤	0.2	V
I_{GD}			≤	3	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs I_G =0.08 A; di_G/dt =0.08 A/µs		≤	75	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	50	mA
t_{gd}	T_{VJ} = 25°C; V_D = 1/2 V_{DRM} I_G = 0.08 A; di_G/dt = 0.08 A/µs		≤	2	µs

R_{thJC}	DC current		1.7	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