

Phase Control Thyristor

ISOPLUS220™

Electrically Isolated Back Surface

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

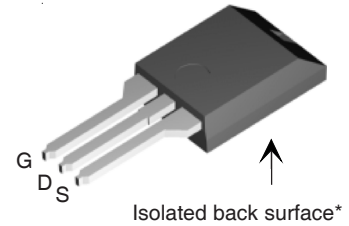
$$I_{T(RMS)} = 35 \text{ A}$$

$$I_{T(AV)M} = 13 \text{ A}$$

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



ISOPLUS 220™



Symbol	Test Conditions	Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$	35	A
$I_{T(AV)M}$	$T_C = 85^\circ\text{C}; 180^\circ \text{ sine}$	13	A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}; V_R = 0 \text{ V}$	t = 10 ms (50 Hz), sine	100 A
		t = 8.3 ms (60 Hz), sine	105 A
	$T_{VJ} = T_{VJM}; V_R = 0 \text{ V}$	t = 10 ms (50 Hz), sine	85 A
		t = 8.3 ms (60 Hz), sine	90 A
I^2t	$T_{VJ} = 45^\circ\text{C}; V_R = 0 \text{ V}$	t = 10 ms (50 Hz), sine	50 A ² s
		t = 8.3 ms (60 Hz), sine	45 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ repetitive, $I_T = 20 \text{ A}$ f = 50 Hz, $t_p = 200 \mu\text{s}$ $V_D = 2/3 V_{DRM}$		100 A/ μs
	$I_G = 0.08 \text{ A}$ non repetitive, $I_T = I_{T(AV)M}$ $di_G/dt = 0.08 \text{ A}/\mu\text{s}$		500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}; V_{DR} = 2/3 V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise)		500 V/ μs
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...+125	°C
T_{VJM}		125	°C
T_{stg}		-40...+125	°C
V_{ISOL}	50/60 Hz RMS; $I_{ISOL} \leq 1 \text{ mA}$	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

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- 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

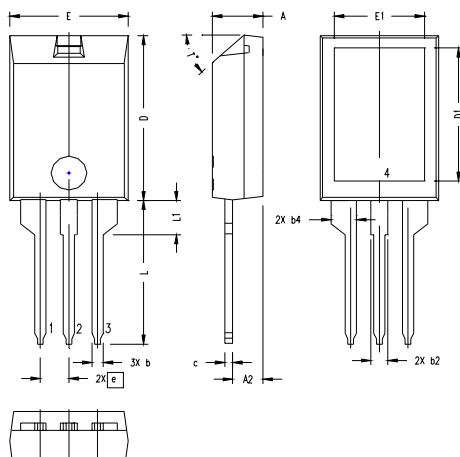
Applications

- 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	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	≤ 1 mA
V_T	$I_T = 30$ A; $T_{VJ} = 25^\circ\text{C}$	≤ 1.65 V
V_{T0}	For power-loss calculations only ($T_{VJ} = 125^\circ\text{C}$)	0.87 V
r_T		29 m Ω
V_{GT}	$V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$	≤ 1.5 V ≤ 2.5 V
I_{GT}	$V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$	≤ 25 mA ≤ 50 mA
V_{GD}	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	≤ 0.2 V
I_{GD}		≤ 3 mA
I_L	$T_{VJ} = 25^\circ\text{C}; t_p = 10$ μs $I_G = 0.08$ A; $di_G/dt = 0.08$ A/ μs	≤ 75 mA
I_H	$T_{VJ} = 25^\circ\text{C}; V_D = 6$ V; $R_{GK} = \infty$	≤ 50 mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.08$ 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
T*			42.5°	47.5°

NOTE:

1. Bottom heatsink (Pin 4) is electrically isolated from Pin 1, 2, or 3.
2. This drawing will meet dimensional requirement of JEDEC SS Product Outline TO-273 except D and D1 dimension.