

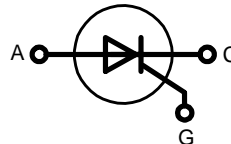
Phase Control Thyristor

ISOPLUS220™

Electrically Isolated Back Surface

Preliminary Data Sheet

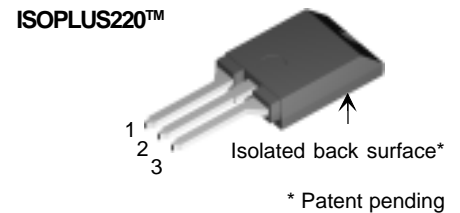
V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
800	800	CS 19-08ho1C
1200	1200	CS 19-12ho1C



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

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

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



Symbol	Conditions	Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$	35	A
$I_{T(AV)M}$	$T_C = 85^\circ\text{C}$; 180° sine	13	A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	100	A
	$V_R = 0 \text{ V}$; $t = 8.3 \text{ ms}$ (60 Hz), sine	105	A
	$T_{VJ} = T_{VJM}$; $t = 10 \text{ ms}$ (50 Hz), sine	85	A
	$V_R = 0 \text{ V}$; $t = 8.3 \text{ ms}$ (60 Hz), sine	90	A
I^2t	$T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	50	A ² s
	$V_R = 0 \text{ V}$; $t = 8.3 \text{ ms}$ (60 Hz), sine	45	A ² s
	$T_{VJ} = T_{VJM}$; $t = 10 \text{ ms}$ (50 Hz), sine	36	A ² s
	$V_R = 0 \text{ V}$; $t = 8.3 \text{ ms}$ (60 Hz), sine	33	A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$; repetitive; $I_T = 20 \text{ A}$ $f = 50 \text{ Hz}$; $t_p = 200 \mu\text{s}$;	100	A/ μs
	$V_D = 2/3 V_{DRM}$; $I_G = 0.08 \text{ A}$; 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

- €Silicon chip on Direct-Copper-Bond substrate
- High power dissipation
- Isolated mounting surface
- 2500 V 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	Conditions	Characteristic Values	
I_R, I_D	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	\leq	1 mA
V_T	$I_T = 30 \text{ A}; T_{VJ} = 25^\circ\text{C}$	\leq	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}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	\leq	1.5 V
	$T_{VJ} = -40^\circ\text{C}$	\leq	2.5 V
I_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	\leq	25 mA
	$T_{VJ} = -40^\circ\text{C}$	\leq	50 mA
V_{GD}	$T_{VJ} = T_{VJM}; V_D = \frac{2}{3} V_{DRM}$	\leq	0.2 V
I_{GD}		\leq	3 mA
I_L	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}; I_G = 0.08 \text{ A}; di_G/dt = 0.08 \text{ A}/\mu\text{s}$	\leq	75 mA
I_H	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	\leq	50 mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}; V_D = \frac{1}{2} V_{DRM}; I_G = 0.08 \text{ A}; di_G/dt = 0.08 \text{ A}/\mu\text{s}$	\leq	2 μs
R_{thJC}	DC current	1.7	KW
R_{thCK}	DC current	typical 0.6	KW
a	Max. acceleration, 50 Hz	50	m/s ²

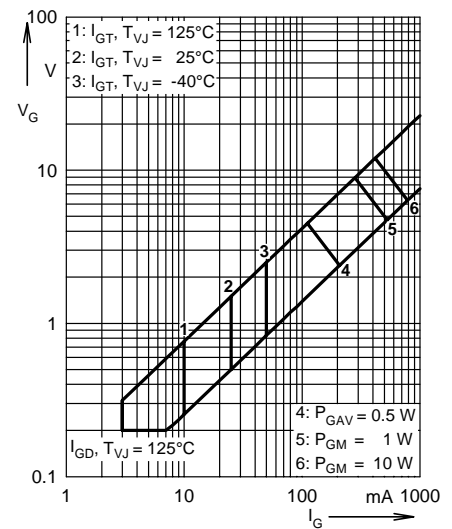


Fig. 1 Gate trigger range

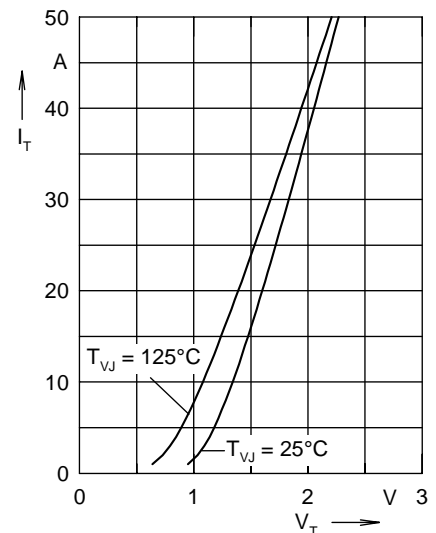
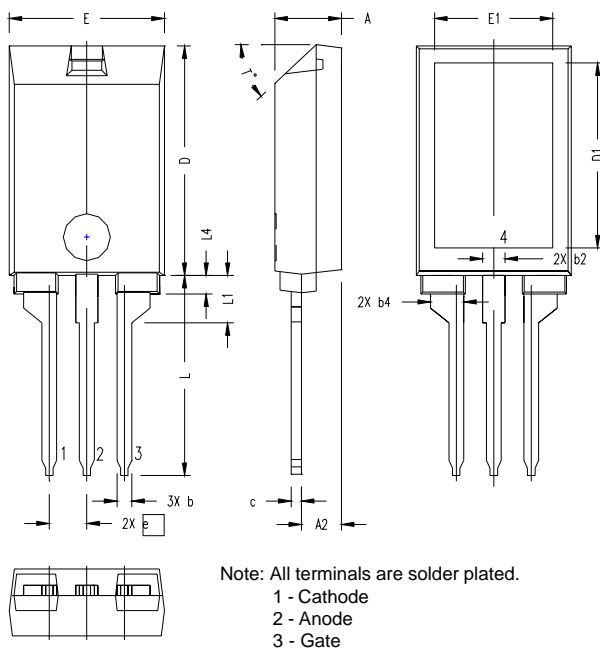


Fig. 2 Forward characteristics

ISOPLUS220(HV) 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°