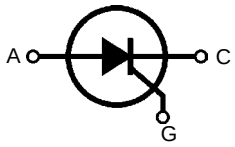
Phase Control Thyristor

V_{RRM} = 1200-1600 V
$I_{T(RMS)}$ = 75 A
$I_{T(AV)M}$ = 48 A

Preliminary Data Sheet

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
1300	1200	CS 60-12io1
1500	1400	CS 60-14io1
1700	1600	CS 60-16io1



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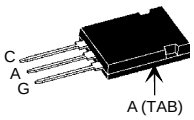


C = Cathode, A = Anode, G = Gate

Symbol	Test Conditions		Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$	(lead current limit)	75	A
$I_{T(AV)M}$	T_C = 105°C; 180° sine		48	A
I_{TSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	1500	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	1600	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	1350	A
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	1450	A
i^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	11,200	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	10,750	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	9100	A^2s
	V_R = 0 V	t = 8.3 ms (60 Hz), sine	8830	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$	repetitive, I_T = 60 A	150	A/µs
	f = 50 Hz, t_P = 200 µs			
	V_D = 2/3 V_{DRM}			
	I_G = 0.3 A	non repetitive, $I_T = I_{T(AV)M}$	500	A/µs
	di_G/dt = 0.3 A/µs			
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$;	V_{DR} = 2/3 V_{DRM}	1000	V/µs
	R_{GK} = ∞; method 1 (linear voltage rise)			
P_{GM}	$T_{VJ} = T_{VJM}$	t_P = 30 µs	10	W
	$I_T = I_{T(AV)M}$	t_P = 300 µs	5	W
$P_{G(AV)}$			0.5	W
V_{RGM}			10	V
T_{VJ}			-40...+140	°C
T_{VJM}			140	°C
T_{stg}			-40...+125	°C
F_C	Mounting Force		20...120/4.5...27	N/lbs
Weight			6	g

Features

- Thyristor for line frequency
- International standard package JEDEC TO-247
- Planar passivated chip
- Long-term stability of blocking currents and voltages

Applications

- Motor control
- Power converter
- AC power controller
- Switch-mode and resonant mode power supplies
- Light and temperature control

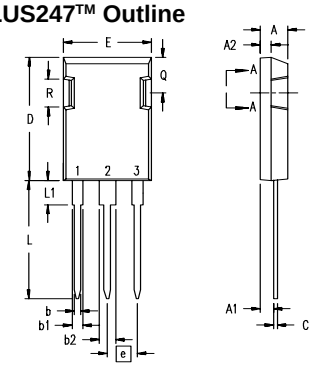
Advantages

- Easy to mount
- Space and weight savings
- Simple mounting

Data according to IEC 60747
IXYS reserves the right to change limits, test conditions and dimensions

Symbol	Test Conditions		Characteristic Values		
I_R, I_D	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$		≤	10	mA
	T_{VJ} = 25°C		≤	0.2	mA
V_T	I_T = 100 A; T_{VJ} = 25°C		≤	1.4	V
V_{T0}	For power-loss calculations only (T_{VJ} = 125°C)			0.85	V
r_T				3.7	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	1.5	V
		T_{VJ} = -40°C	≤	1.6	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	100	mA
		T_{VJ} = -40°C	≤	200	mA
V_{GD}	$T_{VJ} = T_{VJM}$;	V_D = 2/3 V_{DRM}	≤	0.2	V
I_{GD}			≤	10	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs I_G = 0.45 A; di_G/dt = 0.45 A/µs		≤	450	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	200	mA
t_{gd}	T_{VJ} = 25°C; V_D = 1/2 V_{DRM} I_G = 0.45 A; di_G/dt = 0.45 A/µs		≤	2	µs
R_{thJC}	DC current			0.32	K/W
R_{thJK}	DC current			0.47	K/W

PLUS247™ Outline



Terminals: 1 - Cathode
2 - Anode
3 - Gate
Tab - Anode

Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	4.83	5.21	.190	.205
A_1	2.29	2.54	.090	.100
A_2	1.91	2.16	.075	.085
b	1.14	1.40	.045	.055
b_1	1.91	2.13	.075	.084
b_2	2.92	3.12	.115	.123
C	0.61	0.80	.024	.031
D	20.80	21.34	.819	.840
E	15.75	16.13	.620	.635
e	5.45 BSC		.215 BSC	
L	19.81	20.32	.780	.800
L1	3.81	4.32	.150	.170
Q	5.59	6.20	.220	0.244
R	4.32	4.83	.170	.190

Leads and tab are solder plated.