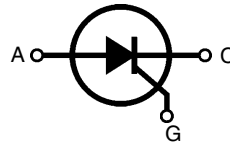
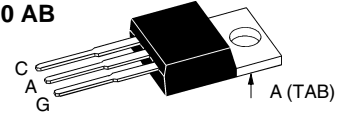
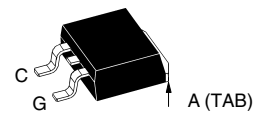


# Phase Control Thyristors

$V_{RRM} = 800-1200 \text{ V}$   
 $I_{T(RMS)} = 29 \text{ A}$   
 $I_{T(AV)M} = 19 \text{ A}$

$V_{RSM}$ $V_{DSM}$	$V_{RRM}$ $V_{DRM}$	Type	Type
V	V	TO 220	TO 263
800	800	CS 19-08ho1	CS 19-08ho1S
1200	1200	CS 19-12ho1	CS 19-12ho1S


**TO-220 AB**

**TO-263 AA**


A = Anode, C = Cathode, G = Gate

Symbol	Test Conditions	Maximum Ratings	
$I_{T(RMS)}$	$T_{VJ} = T_{VJM}$	29	A
$I_{T(AV)M}$	$T_C = 85^\circ\text{C}; 180^\circ \text{ sine}$	19	A
$I_{TSM}$	$T_{VJ} = 45^\circ\text{C}; V_R = 0 \text{ V}$	t = 10 ms (50 Hz), sine	160 A
		t = 8.3 ms (60 Hz), sine	180 A
$I^2t$	$T_{VJ} = 45^\circ\text{C}; V_R = 0 \text{ V}$	t = 10 ms (50 Hz), sine	140 A
		t = 8.3 ms (60 Hz), sine	160 A
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}; f = 50 \text{ Hz}, t_p = 200 \mu\text{s}; V_D = 2/3 V_{DRM}; I_G = 0.15 \text{ A}; di_G/dt = 0.15 \text{ A}/\mu\text{s}$	repetitive, $I_T = 20 \text{ A}$	100 A/ $\mu\text{s}$
		non repetitive, $I_T = I_{T(AV)M}$	500 A/ $\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}; R_{GK} = \infty; \text{method 1 (linear voltage rise)}$	$V_{DR} = 2/3 V_{DRM}$	500 V/ $\mu\text{s}$
$P_{GM}$	$T_{VJ} = T_{VJM}; I_T = I_{T(AV)M}$	$t_p = 30 \mu\text{s}$	5 W
$P_{GAV}$		$t_p = 300 \mu\text{s}$	2.5 W
$V_{RGM}$			0.5 W
$T_{VJ}$			10 V
$T_{VJM}$		-40...+125	$^\circ\text{C}$
$T_{stg}$		125	$^\circ\text{C}$
$M_d$	Mounting torque with screw M3; TO220	0.45/4	Nm/lb.in.
	Mounting torque with screw M3.5; TO220	0.55/5	Nm/in.
Weight		2	g

## Features

- SCR for frequency up to 400Hz
- International standard package
- High performance glass passivated chip
- Long-term stability of leakage current and blocking voltage
- Epoxy meets UL 94V-0

## Applications

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

## Advantages

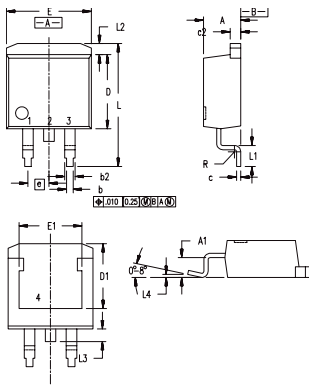
- Space and weight savings
- Simple mounting

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

Symbol	Test Conditions	Characteristic Values	
$I_R, I_D$	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	$\leq$	5 mA
$V_T$	$I_T = 20 \text{ A}; T_{VJ} = 25^\circ\text{C}$	$\leq$	1.6 V
$V_{T0}$	For power-loss calculations only ( $T_{VJ} = 125^\circ\text{C}$ )	0.85	V
$r_T$		27	m $\Omega$
$V_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	$\leq$	1.5 V
	$T_{VJ} = -40^\circ\text{C}$	$\leq$	2.5 V
$I_{GT}$	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	$\leq$	28 mA
	$T_{VJ} = -40^\circ\text{C}$	$\leq$	50 mA
$V_{GD}$	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	$\leq$	0.2 V
$I_{GD}$		$\leq$	3 mA
$I_L$	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}$ $I_G = 0.1 \text{ A}; di_G/dt = 0.1 \text{ A}/\mu\text{s}$	$\leq$	75 mA
$I_H$	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	$\leq$	50 mA
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.1 \text{ A}; di_G/dt = 0.1 \text{ A}/\mu\text{s}$	$\leq$	2 $\mu\text{s}$
$R_{thJC}$	DC current	1.0	K/W
$R_{thCK}$	DC current	typ 0.25	K/W
$a$	Max. acceleration, 50 Hz	50	m/s <sup>2</sup>

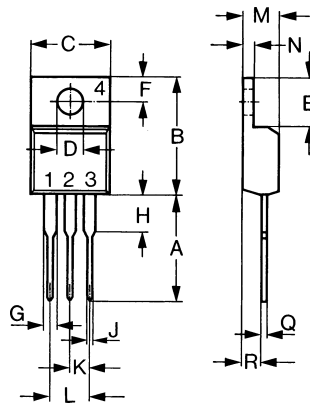
### Dimensions in mm (1 mm = 0.0394")

#### TO 263 AA



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.06	4.83	.160	.190
A1	2.03	2.79	.080	.110
b	0.51	0.99	.020	.039
b2	1.14	1.40	.045	.055
c	0.46	0.74	.018	.029
c2	1.14	1.40	.045	.055
D	8.64	9.65	.340	.380
D1	7.11	8.13	.280	.320
E	9.65	10.29	.380	.405
E1	6.86	8.13	.270	.320
e	2.54	BSC	.100	BSC
L	14.61	15.88	.575	.625
L1	2.29	2.79	.090	.110
L2	1.02	1.40	.040	.055
L3	1.27	1.78	.050	.070
L4	0	0.38	0	.015
R	0.46	0.74	.018	.029

#### TO 220 AB



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.70	13.97	0.500	0.550
B	14.73	16.00	0.580	0.630
C	9.91	10.66	0.390	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	0.230	0.270
F	2.54	3.18	0.100	0.125
G	1.15	1.65	0.045	0.065
H	2.79	5.84	0.110	0.230
J	0.64	1.01	0.025	0.040
K	2.54	BSC	0.100	BSC
M	4.32	4.82	0.170	0.190
N	1.14	1.39	0.045	0.055
Q	0.35	0.56	0.014	0.022
R	2.29	2.79	0.090	0.110