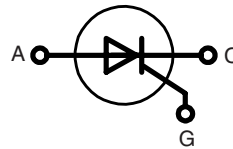


Phase Control Thyristors

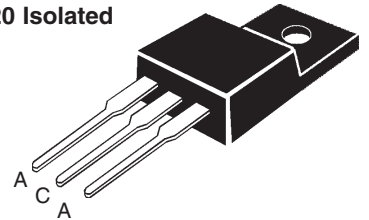
Electrically Isolated Tab

$V_{RRM} = 800-1200 \text{ V}$
 $I_{T(AV)M} = 16 \text{ A}$

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
800	800	CS 22-08io1M
1200	1200	CS 22-12io1M



TO-220 Isolated



A = Anode, C = Cathode, G = Gate
 Tab = Isolated

Symbol	Conditions	Maximum Ratings	
$I_{T(AV)M}$	$T_C = 85^\circ\text{C}$ 180° sine ^①	16 A	
	$T_A = 25^\circ\text{C}$ 180° sine ^②	2.5 A	
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0 \text{ V}$	t = 10 ms (50 Hz), sine 300 A t = 8.3 ms (60 Hz), sine 340 A	
	$T_{VJ} = T_{VJM}$ $V_R = 0 \text{ V}$	t = 10 ms (50 Hz), sine 250 A t = 8.3 ms (60 Hz), sine 285 A	
	P^2t	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0 \text{ V}$	t = 10 ms (50 Hz), sine 450 A ² s t = 8.3 ms (60 Hz), sine 480 A ² s
		$T_{VJ} = T_{VJM}$ $V_R = 0 \text{ V}$	t = 10 ms (50 Hz), sine 300 A ² s t = 8.3 ms (60 Hz), sine 337 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50Hz, $t_p = 200\mu\text{s}$	repetitive, $I_T = 20 \text{ A}$ 150 A/ μs	
	$V_D = \frac{2}{3} V_{DRM}$ $I_G = 0.08 \text{ A}$ $di_G/dt = 0.08 \text{ A}/\mu\text{s}$	non repetitive, $I_T = I_{T(AV)M}$ 500 A/ μs	
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$, $V_{DR} = \frac{2}{3} V_{DRM}$ $R_{GK} = \infty$, method 1 (linear voltage rise)	1000 V/ μs	
P_{GM}	$T_{VJ} = T_{VJM}$ $I_T = I_{T(AV)M}$	$t_p = 30 \mu\text{s}$ 10 W $t_p = 300 \mu\text{s}$ 5 W	
P_{GAV}		0.5 W	
V_{RGM}		10 V	
T_{VJ}		-40...+150 °C	
T_{VJM}		150 °C	
T_{stg}		-40...+125 °C	
M_d	Mounting torque	M 3 or UNC 4-40 0.5-0.8 Nm	
Weight		3 g	

Features

- Thyristor for frequencies up to 400Hz
- International standard package
- Epoxy meets UL 94V-0
- High performance glass passivated chip
- Long-term stability of leakage current and blocking voltage
- Plastic overmolded tab for electrical isolation

Applications

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

Advantages

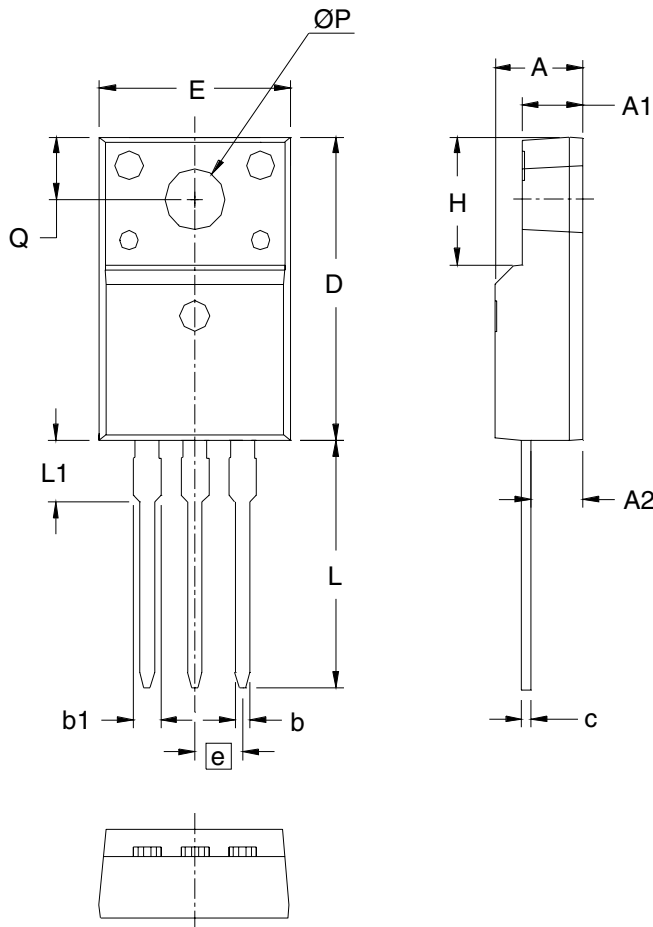
- Space and weight savings
- Simple mounting

^① mounted on heatsink
^② without heatsink

Data according to IEC 60747

Symbol	Conditions	Characteristic Values	
I_R, I_D	$T_{VJ} = T_{VJM}, V_R = V_{RRM}, V_D = V_{DRM}$	\leq	5 mA
V_T	$I_T = 30 \text{ A}, T_{VJ} = 25^\circ\text{C}$	\leq	1.5 V
V_{T0}	For power-loss calculations only ($T_{VJ} = 150^\circ\text{C}$)		0.9 V
r_T			18 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 30 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	100 mA
I_H	$T_{VJ} = 25^\circ\text{C}, V_D = 6 \text{ V}, R_{GK} = \infty$	\leq	80 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		2.5 K/W
R_{thCH}	DC current		0.5 K/W
R_{thJA}	DC current		50 K/W
a	Max. acceleration, 50 Hz		50 m/s ²

Package Outline



SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.177	.193	4.50	4.90
A1	.092	.108	2.34	2.74
A2	.101	.117	2.56	2.96
b	.028	.035	0.70	0.90
b1	.050	.058	1.27	1.47
c	.018	.024	0.45	0.60
D	.617	.633	15.67	16.07
E	.392	.408	9.96	10.36
e	.100 BSC		2.54 BSC	
H	.255	.271	6.48	6.88
L	.499	.523	12.68	13.28
L1	.119	.135	3.03	3.43
ØP	.121	.129	3.08	3.28
Q	.126	.134	3.20	3.40