



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





Micro Commercial Components



Micro Commercial Components
 20736 Marilla Street Chatsworth
 CA 91311
 Phone: (818) 701-4933
 Fax: (818) 701-4939

MT90C08T1
MT90C12T1
MT90C16T1
MT90C18T1

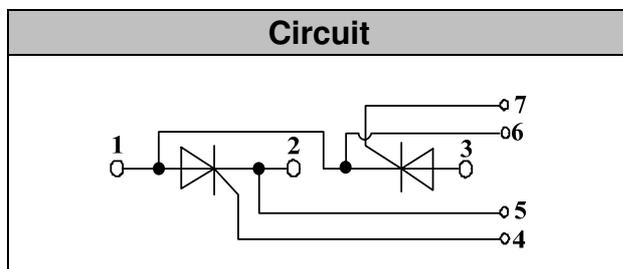
90 Amp
THYRISTOR MODULE
800~1800 Volts

Features

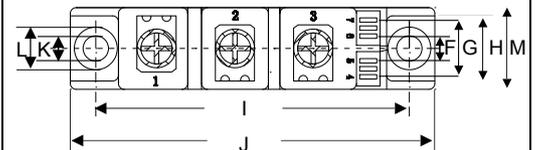
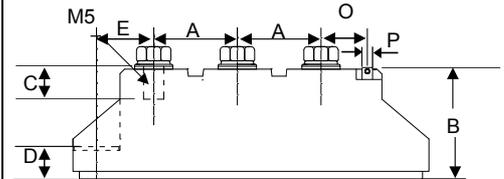
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- International standard package
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- Simple Mounting

Applications

- Power Converters
- Lighting Control
- DC Motor Control and Drives
- Heat and temperature control



T1



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.776	.799	19.70	20.30	
B	1.169	1.193	29.70	30.30	
C	.343	.366	8.70	9.30	
D	.323	.346	8.20	8.80	
E	.602	.622	15.30	15.80	
F	.224	.248	5.70	6.30	
G	.539	.563	13.70	14.30	
H	.657	.681	16.70	17.30	
I	3.138	3.161	79.70	80.30	
J	3.650	3.673	92.70	93.30	
K		.256		6.50	∅
L	.421	.445	10.70	11.30	
M	.815	.839	20.70	21.30	
O	.579	.602	14.70	15.30	
P	0.11X0.032		2.8X0.8		

Module Type

TYPE	VRRM	VRSM
MT90C08T1	800V	900V
MT90C12T1	1200V	1300V
MT90C16T1	1600V	1700V
MT90C18T1	1800V	1900V

Maximum Ratings

Symbol	Conditions	Values	Units
I_{TAV}	Sine 180°;Tc=85°C	90	A
I_{TSM}	$T_{VJ}=45^{\circ}\text{C}$ t=10ms, sine	2000	A
	$T_{VJ}=125^{\circ}\text{C}$ t=10ms, sine	1750	
i^2t	$T_{VJ}=45^{\circ}\text{C}$ t=10ms, sine	20000	A2s
	$T_{VJ}=125^{\circ}\text{C}$ t=10ms, sine	15000	
Visol	a.c.50HZ;r.m.s.;1min	3000	V
Tvj		-40 to 130	°C
Tstg		-40 to 125	°C
Mt	To terminals(M5)	$3 \pm 15\%$	Nm
Ms	To heatsink(M6)	$5 \pm 15\%$	Nm
di/dt	$T_{VJ}=T_{VJM}$, $2/3V_{DRM}$, $I_G=500\text{mA}$ Tr<0.5us,tp>6us	150	A/us
dv/dt	$T_J=T_{VJM}$, $2/3V_{DRM}$ linear voltage rise	1000	V/us
a	Maximum allowable acceleration	50	m/s ²
Weight	Module(Approximately)	100	g

Thermal Characteristics

Symbol	Conditions	Values	Units
Rth(j-c)	Cont.;per thyristor / per module	0.28/0.14	°C/W
Rth(c-s)	per thyristor / per module	0.2/0.1	°C/W

Electrical Characteristics

Symbol	Conditions	Values		Units
V_{TM}	$T=25^{\circ}\text{C}$ $I_{TM}=300\text{A}$		1.65	V
I_{RRM}/I_{DRM}	$T_{VJ}=T_{VJM}$, $V_R=V_{RRM}$, $V_D=V_{DRM}$		20	mA
V_{TO}	For power-loss calculations only ($T_{VJ}=125^{\circ}\text{C}$)		0.9	V
r_T	$T_{VJ}=T_{VJM}$		2	mΩ
V_{GT}	$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$		3.0	V
I_{GT}	$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$		150	mA
V_{GD}	$T_{VJ}=125^{\circ}\text{C}$, $V_D=2/3V_{DRM}$		0.25	V
I_{GD}	$T_{VJ}=125^{\circ}\text{C}$, $V_D=2/3V_{DRM}$		6	mA
I_L	$T_{VJ}=25^{\circ}\text{C}$, $R_G=33\ \Omega$	300	600	mA
I_H	$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$	150	250	mA
tgd	$T_{VJ}=25^{\circ}\text{C}$, $I_G=1\text{A}$, $di_G/dt=1\text{A/us}$	1		us
tq	$T_{VJ}=T_{VJM}$	100		us

Performance Curves

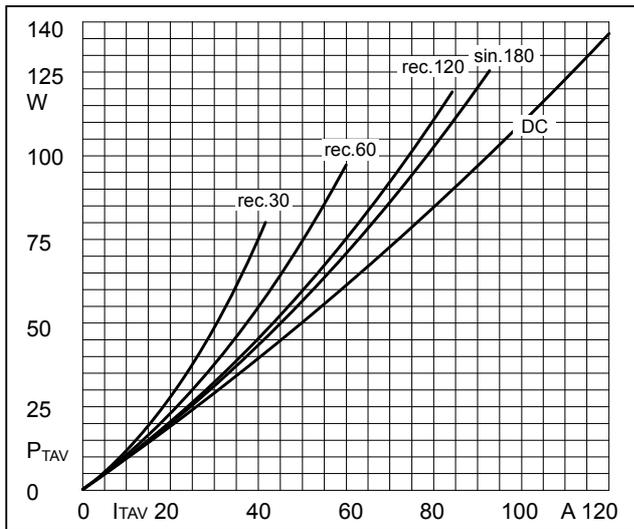


Fig1. Power dissipation

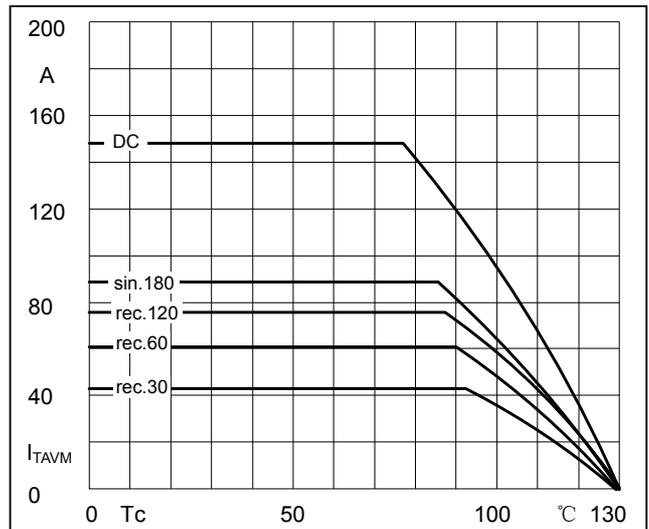


Fig2. Forward Current Derating Curve

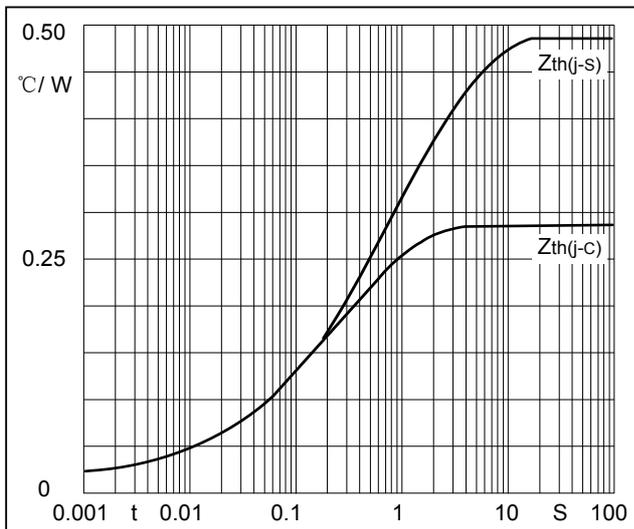


Fig3. Transient thermal impedance

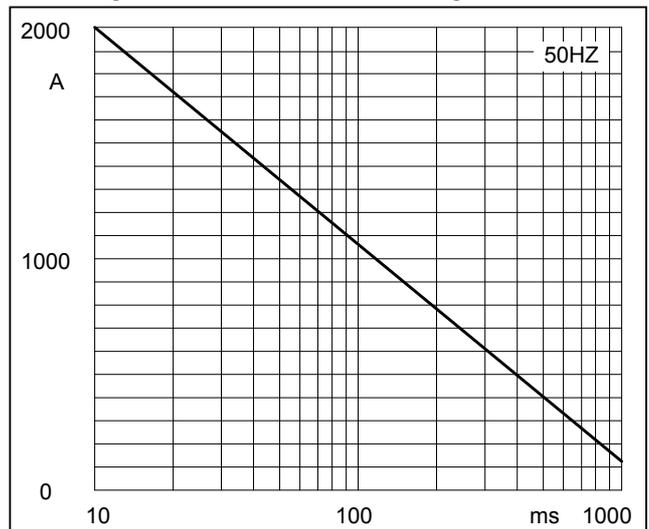


Fig4. Max Non-Repetitive Forward Surge Current

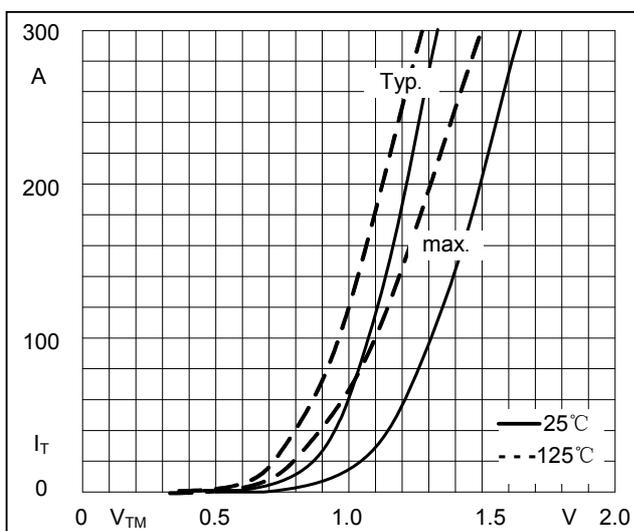


Fig5. Forward Characteristics

Performance Curves

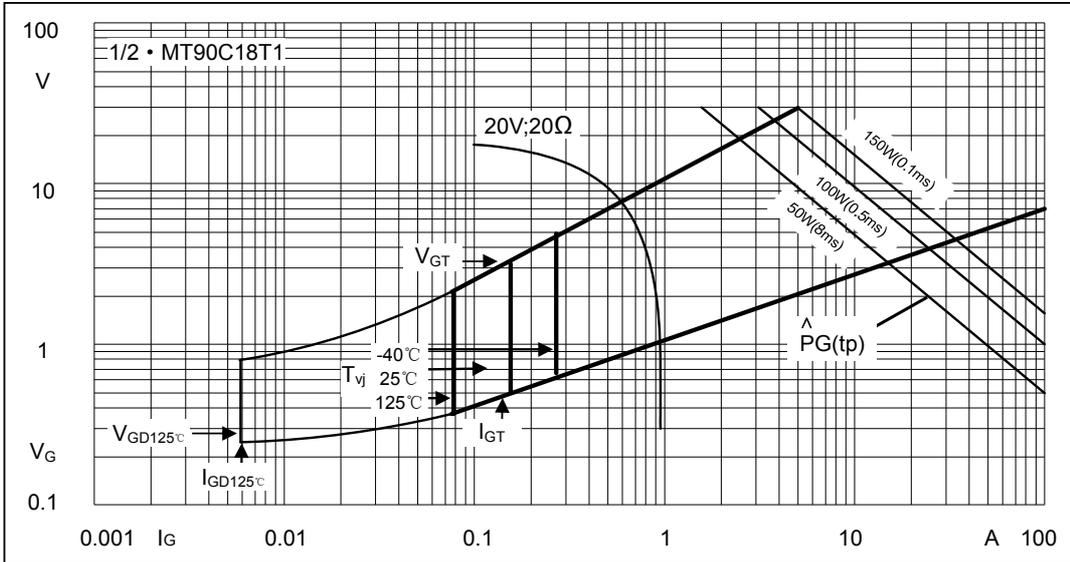


Fig6. Gate trigger Characteristics



Micro Commercial Components

Ordering Information :

Device	Packing
Part Number-BP	Bulk: 10PCS/BOX ;100PCS/CTN

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