



Micro Commercial Components



Micro Commercial Components  
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**MT60C08T1**  
**MT60C12T1**  
**MT60C16T1**  
**MT60C18T1**

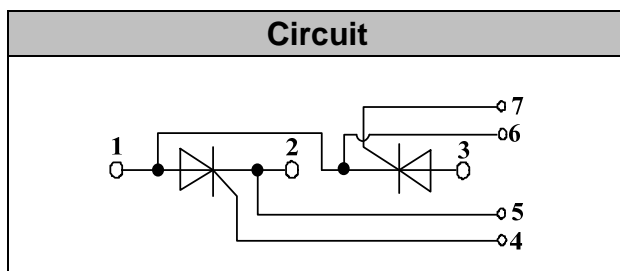
**60 Amp**  
**THYRISTOR MODULE**  
**800~1800 Volts**

## Features

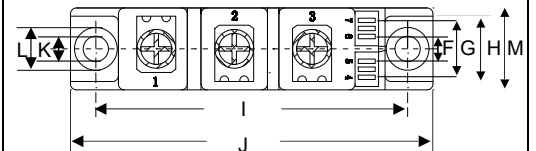
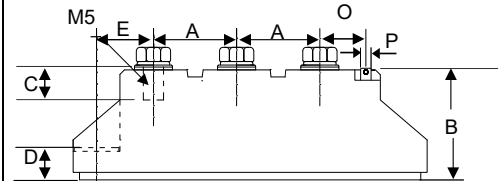
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- International standard package
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- Simple Mounting

## Applications

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



T1



### DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.776	0.799	19.50	20.50	
B	1.169	1.193	29.50	30.50	
C	0.343	0.366	8.50	9.50	
D	0.323	0.346	8.00	9.00	
E	0.602	0.622	15.10	16.00	
F	0.224	0.248	5.50	6.50	
G	0.539	0.563	13.50	14.50	
H	0.657	0.681	16.50	17.50	
I	3.138	3.161	79.50	80.50	
J	3.650	3.673	92.50	93.50	
K	0.256		6.50		∅
L	0.421	0.445	10.50	11.50	
M	0.815	0.839	20.50	21.50	
O	0.579	0.602	14.50	15.50	
P	0.11X0.032		2.8X0.8		

## Module Type

TYPE	VRRM	VRSM
MT60C08T1	800V	900V
MT60C12T1	1200V	1300V
MT60C16T1	1600V	1700V
MT60C18T1	1800V	1900V

## Maximum Ratings

Symbol	Conditions	Values	Units
$I_{TAV}$	Sine 180°; $T_c=85^\circ\text{C}$	60	A
$I_{TSM}$	$T_{VJ}=45^\circ\text{C}$ $t=10\text{ms}$ , sine	1500	A
	$T_{VJ}=125^\circ\text{C}$ $t=10\text{ms}$ , sine	1250	
$i^2t$	$T_{VJ}=45^\circ\text{C}$ $t=10\text{ms}$ , sine	11000	$\text{A}^2\text{s}$
	$T_{VJ}=125^\circ\text{C}$ $t=10\text{ms}$ , sine	8000	
Visol	a.c.50HZ;r.m.s.;1min	3000	V
$T_{vj}$		-40 to 125	$^\circ\text{C}$
$T_{stg}$		-40 to 125	$^\circ\text{C}$
Mt	To terminals(M5)	$3 \pm 15\%$	Nm
Ms	To heatsink(M6)	$5 \pm 15\%$	Nm
di/dt	$T_{VJ}=T_{VJM}$ , $2/3V_{DRM}$ , $I_G=500\text{mA}$ $Tr<0.5\mu\text{s}$ , $tp>6\mu\text{s}$	150	A/ $\mu\text{s}$
dv/dt	$T_J=T_{VJM}$ , $2/3V_{DRM}$ , linear voltage rise	1000	V/ $\mu\text{s}$
a	Maximum allowable acceleration	50	$\text{m/s}^2$
Weight	Module(Approximately)	100	g

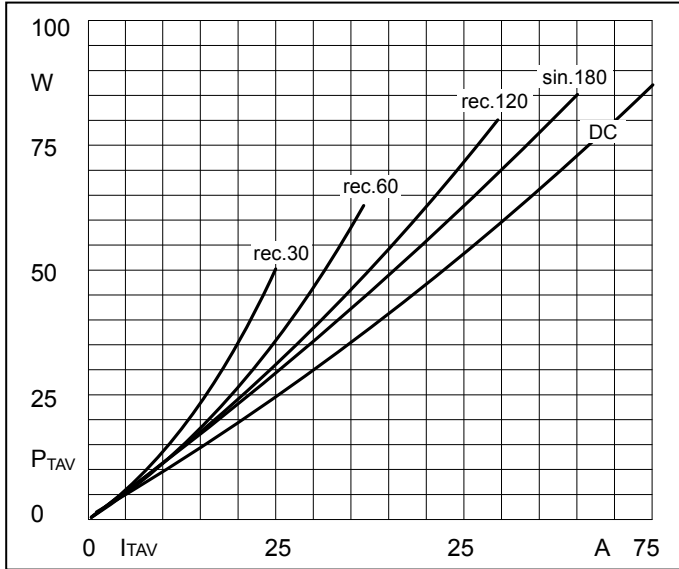
## Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	Cont.;per thyristor / per module	0.57/0.29	$^\circ\text{C/W}$
$R_{th(c-s)}$	per thyristor / per module	0.2/0.1	$^\circ\text{C/W}$

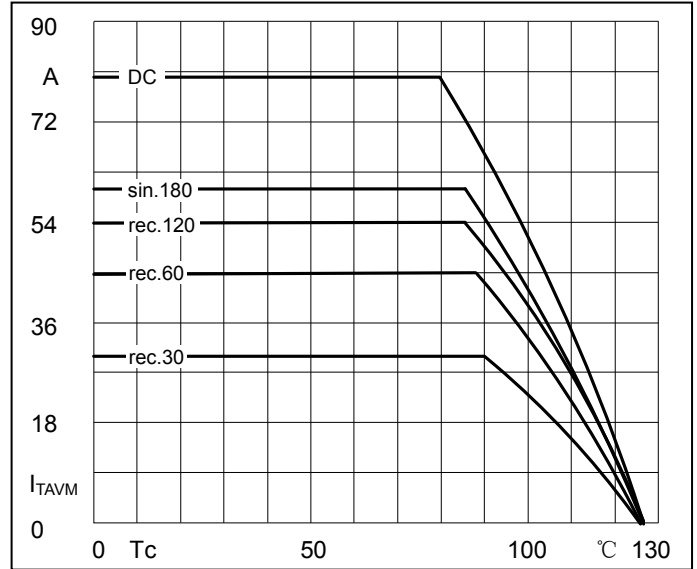
## Electrical Characteristics

Symbol	Conditions	Values		Units
$V_{TM}$	$T=25^\circ\text{C}$ $I_{TM}=200\text{A}$		1.65	V
$I_{RRM}/I_{DRM}$	$T_{VJ}=T_{VJM}$ , $V_R=V_{RRM}$ , $V_D=V_{DRM}$		15	mA
$V_{TO}$	For power-loss calculations only ( $T_{VJ}=125^\circ\text{C}$ )		0.9	V
$r_T$	$T_{VJ}=T_{VJM}$		3.5	$\text{m}\Omega$
$V_{GT}$	$T_{VJ}=25^\circ\text{C}$ , $V_D=6\text{V}$		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	$T_{VJ}=25^\circ\text{C}$ , $I_G=1\text{A}$ , $di_G/dt=1\text{A}/\mu\text{s}$	1		$\mu\text{s}$
tq	$v_J=T_{VJM}$	80		$\mu\text{s}$

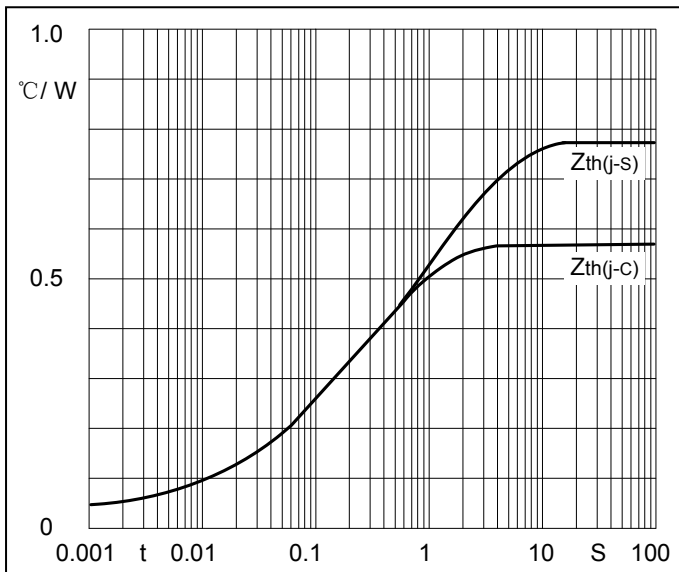
## Performance Curves



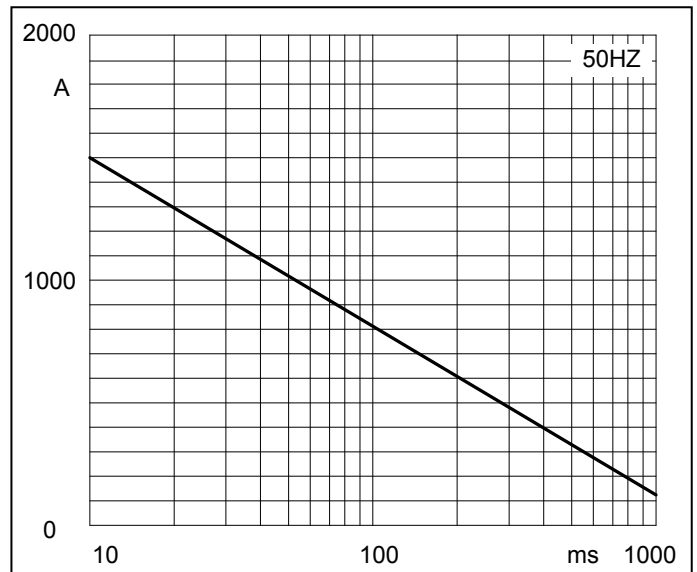
**Fig1. Power dissipation**



**Fig2. Forward Current Derating Curve**

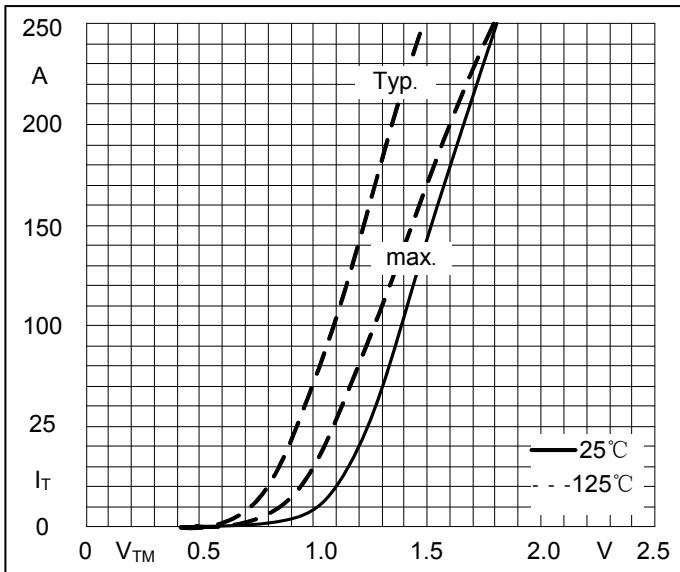


**Fig3. Transient thermal impedance**

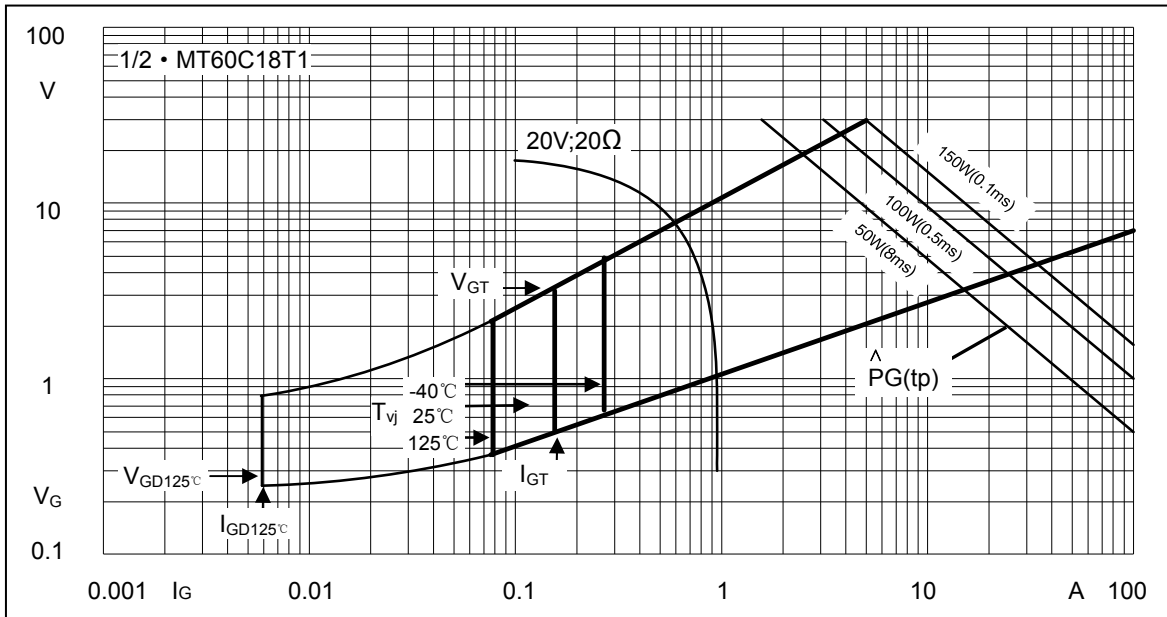


**Fig4. Max Non-Repetitive Forward Surge Current**

**Performance Curves**



**Fig5. Forward Characteristics**



**Fig6. Gate trigger Characteristics**



## Ordering Information :

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

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