



Micro Commercial Components



Micro Commercial Components  
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**MT110C08T1**  
**MT110C12T1**  
**MT110C16T1**  
**MT110C18T1**

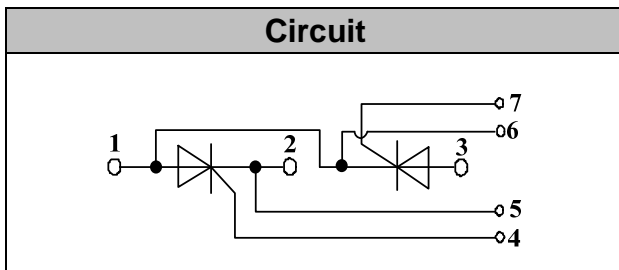
**110 Amp**  
**THYRISTOR MODULE**  
**800~1800 Volts**

## Features

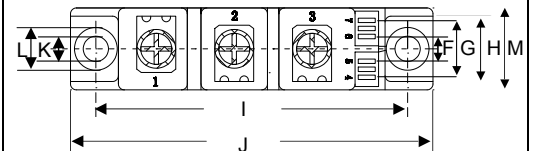
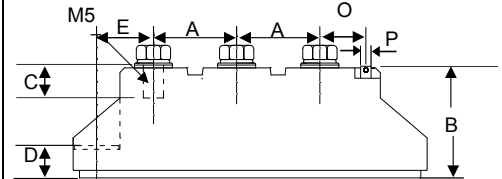
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- International standard package
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- Simple Mounting

## 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
MT110C08T1	800V	900V
MT110C12T1	1200V	1300V
MT110C16T1	1600V	1700V
MT110C18T1	1800V	1900V

## Maximum Ratings

Symbol	Conditions	Values	Units
$I_{TAV}$	Sine 180°; $T_c=85^\circ\text{C}$	110	A
$I_{TSM}$	$T_{VJ}=45^\circ\text{C}$ t=10ms, sine	2250	A
	$T_{VJ}=125^\circ\text{C}$ t=10ms, sine	1900	
$i^2t$	$T_{VJ}=45^\circ\text{C}$ t=10ms, sine	25000	$\text{A}^2\text{s}$
	$T_{VJ}=125^\circ\text{C}$ t=10ms, sine	18000	
Visol	a.c.50HZ;r.m.s.;1min	3000	V
$T_{vj}$		-40 to 130	$^\circ\text{C}$
$T_{stg}$		-40 to 125	$^\circ\text{C}$
Mt	T terminals(M5)	$3 \pm 15\%$	Nm
Ms	T 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	$J=T_{VJM}$ , $2/3V_{DRM}$ , linear voltage rise	1000	V/ $\mu\text{s}$
a	Maximum allowable acceleration	50	$\text{m/s}^2$
Weight	Mod e(Approximately)	100	g

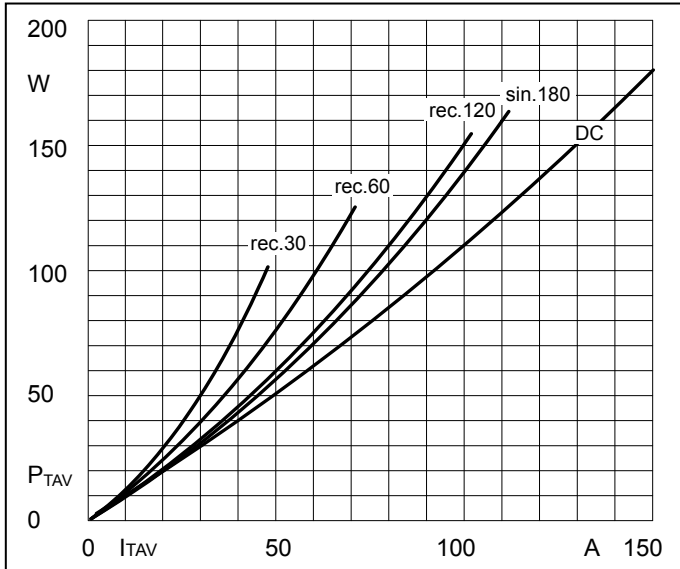
## Thermal Characteristics

Symbol	Conditions	Values	Units
$R_{th(j-c)}$	C thyristor / per module	0.28/0.14	$^\circ\text{C/W}$
$R_{th(c-s)}$	per thyristor / per module	0.2/0.1	$^\circ\text{C/W}$

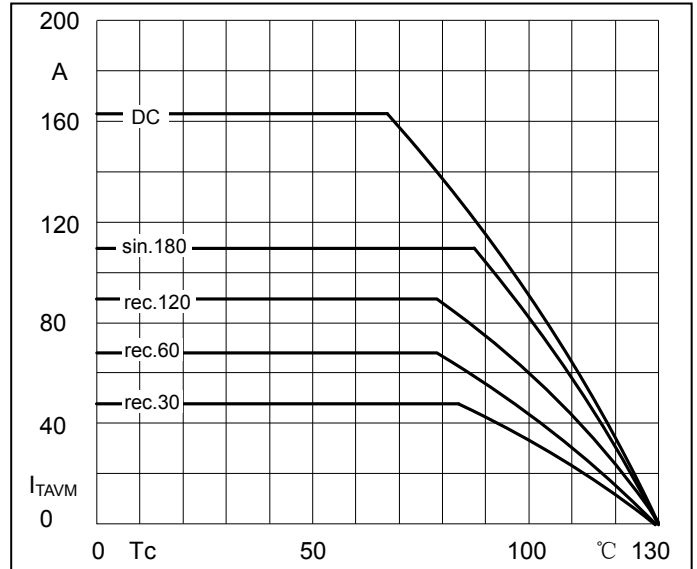
## Electrical Characteristics

Symbol	Conditions	Values			Units
$V_{TM}$	$T=25^\circ\text{C}$ $I_{TM}=300\text{A}$			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	m $\Omega$
$V_{GT}$	$T_{VJ}=25^\circ\text{C}$ , $V_D=6\text{V}$			3	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	$V_J=T_{VJM}$	100			$\mu\text{s}$

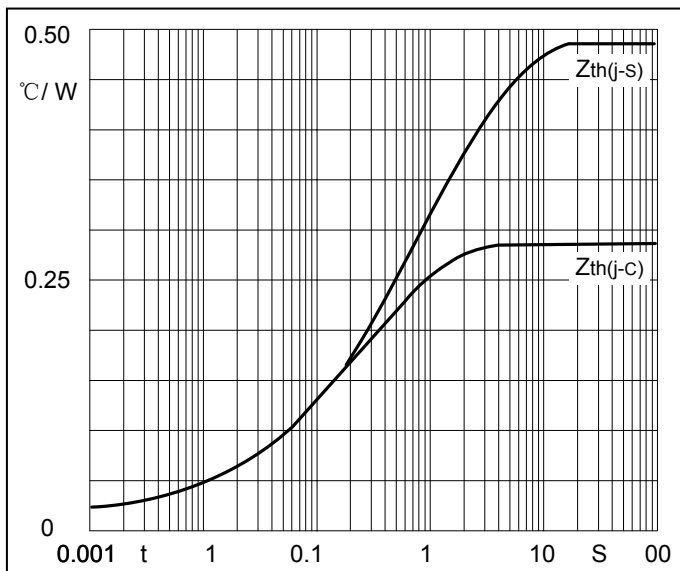
**Performance Curves**



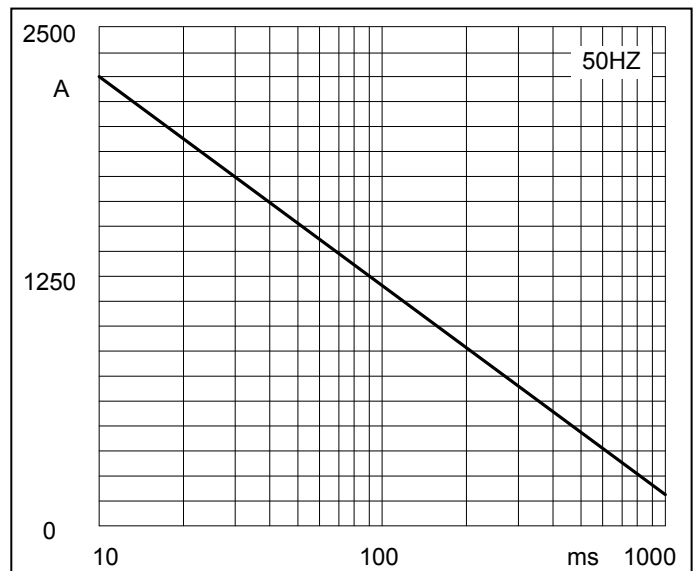
**Fig1. Power dissipation**



**Fig2. Forward Current Derating Curve**

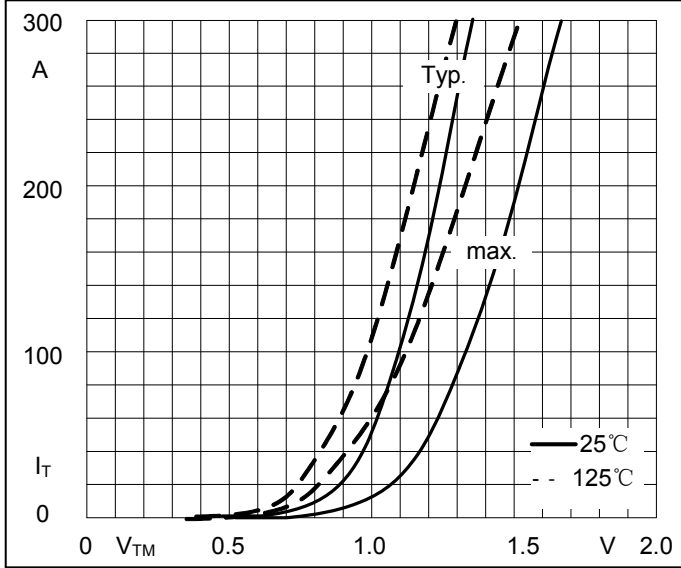


**Fig3. Transient thermal impedance**

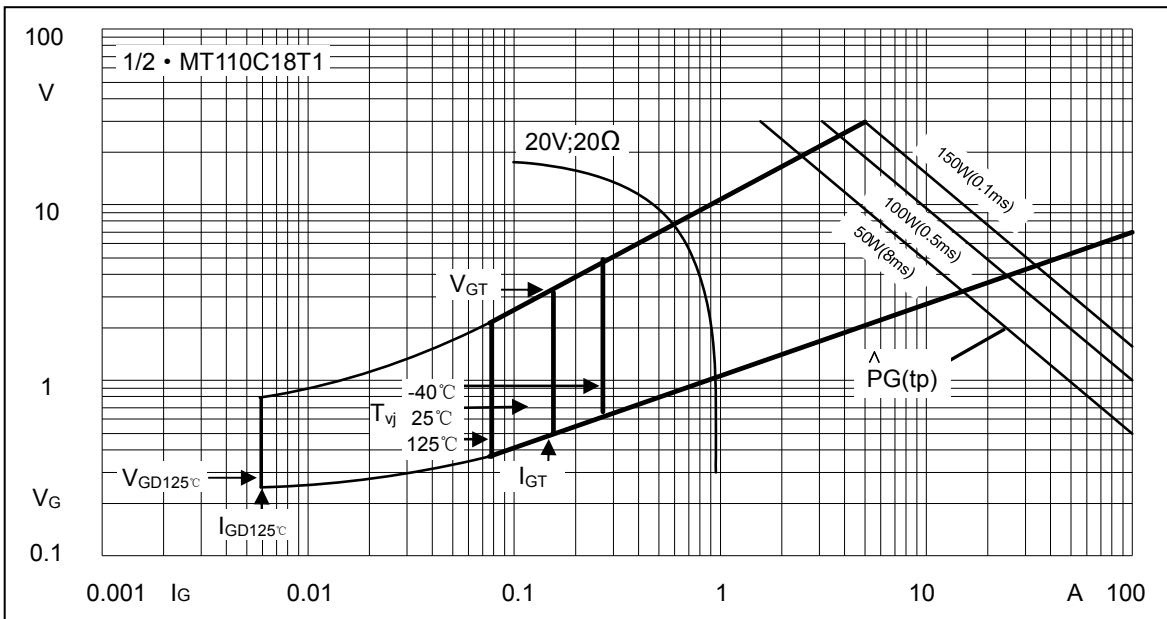


**Fig4. Max Non-Repetitive Forward Surge Current**

**Performance Curves**



**Fig5. Forward Characteristics**



**Fig6. Gate trigger Characteristics**



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## Ordering Information :

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

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