



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!



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Micro Commercial Components



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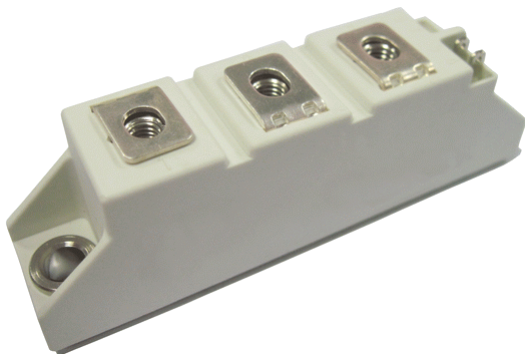
MT110CB08T1
MT110CB12T1
MT110CB16T1
MT110CB18T1

Features

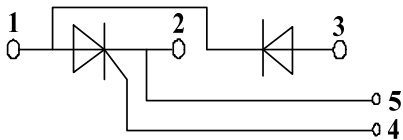
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- International standard package
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- Simple Mounting

Applications

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

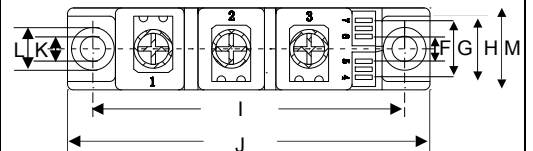
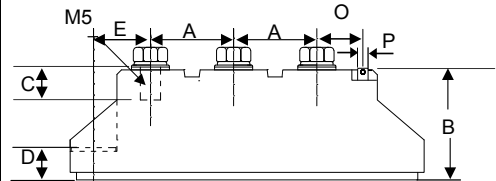


Circuit



110 Amp
THYRISTOR/DIODE
MODULE
800~1800 Volts

T1



DIMENSIONS

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
MT110CB08T1	800V	900V
MT110CB12T1	1200V	1300V
MT110CB16T1	1600V	1700V
MT110CB18T1	1800V	1900V

◆ Diode

Maximum Ratings

Symbol	Item	Conditions	Values	Units
ID	Output Current(D.C.)	Tc=85°C	110	A
IFSM	Surge forward current	t=10mS Tvj =45°C	2250	A
i ² t	Circuit Fusing Consideration		25000	A ² s
Visol	Isolation Breakdown Voltage(R.M.S)	a.c.50HZ;r.m.s.;1min	3000	V
Tvj	Operating Junction Temperature		-40 to +125	°C
Tstg	Storage Temperature		-40 to +125	°C
Mt	Mounting Torque	To terminals(M5)	3±15%	Nm
Ms		To heatsink(M6)	5±15%	Nm
Weight	Module (Approximately)		100	g

Thermal Characteristics

Symbol	Item	Conditions	Values	Units
Rth(j-c)	Thermal Impedance, max.	Junction to Case	0.14	°C/W
Rth(c-s)	Thermal Impedance, max.	Case to Heatsink	0.10	°C/W

Electrical Characteristics

Symbol	Item	Conditions	Values			Units
			Min.	Typ.	Max.	
VFM	Forward Voltage Drop, max.	T=25°C IF =300A			1.65	V
I _{RRM}	Repetitive Peak Reverse Current, max.	Tvj =25°C VRD=VRRM Tvj =125°C VRD=VRRM		≤0.5 ≤6		mA mA

◆ Thyristor

Maximum Ratings

Symbol	Item	Conditions	Values	Units
I_{TAV}	Average On-State Current	Sine 180°; $T_c=85^\circ\text{C}$	110	A
I_{TSM}	Surge On-State Current	$T_{VJ}=45^\circ\text{C}$ $t=10\text{ms}$, sine $T_{VJ}=125^\circ\text{C}$ $t=10\text{ms}$, sine	2250 1900	A
i^2t	Circuit Fusing Consideration	$T_{VJ}=45^\circ\text{C}$ $t=10\text{ms}$, sine $T_{VJ}=125^\circ\text{C}$ $t=10\text{ms}$, sine	25000 18000	A ² s
Visol	Isolation Breakdown Voltage(R.M.S)	a.c.50HZ;r.m.s.;1min	3000	V
T_{vj}	Operating Junction Temperature		-40 to +130	°C
T_{stg}	Storage Temperature		-40 to +125	°C
M_t	Mounting Torque	To terminals(M5)	$3 \pm 15\%$	Nm
M_s		To heatsink(M6)	$5 \pm 15\%$	Nm
di/dt	Critical Rate of Rise of On-State Current	$T_{VJ}=T_{VJM}$, $2/3V_{DRM}$, $I_G=500\text{mA}$ $T_r < 0.5\mu\text{s}$, $t_p > 6\mu\text{s}$	150	A/ μs
dv/dt	Critical Rate of Rise of Off-State Voltage, min.	$T_J=T_{VJM}$, $2/3V_{DRM}$ linear voltage rise	1000	V/ μs
a	Maximum allowable acceleration		50	m/s^2

Thermal Characteristics

Symbol	Item	Conditions	Values	Units
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to Case	0.28	°C/W
$R_{th(c-s)}$	Thermal Impedance, max.	Case to Heatsink	0.20	°C/W

Electrical Characteristics

Symbol	Item	Conditions	Values		Units
V_{TM}	Peak On-State Voltage, max.	$T=25^\circ\text{C}$ $I_T=300\text{A}$		1.65	V
I_{RRM}/I_{DRM}	Repetitive Peak Reverse Current, max. / Repetitive Peak Off-State Current, max.	$T_{VJ}=T_{VJM}$, $V_R=V_{RRM}$, $V_D=V_{DRM}$		20	mA
V_{TO}	On state threshold voltage	For power-loss calculations only ($T_{VJ}=125^\circ\text{C}$)		0.9	V
r_T	Value of on-state slope resistance. max	$T_{VJ}=T_{VJM}$		2	m Ω
V_{GT}	Gate Trigger Voltage, max.	$T_{VJ}=25^\circ\text{C}$, $V_D=6\text{V}$		3	V
I_{GT}	Gate Trigger Current, max.	$T_{VJ}=25^\circ\text{C}$, $V_D=6\text{V}$		150	mA
V_{GD}	Non-triggering gate voltage, max.	$T_{VJ}=125^\circ\text{C}$, $V_D=2/3V_{DRM}$		0.25	V
I_{GD}	Non-triggering gate current, max.	$T_{VJ}=125^\circ\text{C}$, $V_D=2/3V_{DRM}$		6	mA
I_L	Latching current, max.	$T_{VJ}=25^\circ\text{C}$, $R_G=33\Omega$	300	600	mA
I_H	Holding current, max.	$T_{VJ}=25^\circ\text{C}$, $V_D=6\text{V}$	150	250	mA
tgd	Gate controlled delay time	$T_{VJ}=25^\circ\text{C}$, $I_G=1\text{A}$, $diG/dt=1\text{A}/\mu\text{s}$	1		μs
tq	Circuit commutated turn-off time	$T_{VJ}=T_{VJM}$	100		μs

Performance Curves

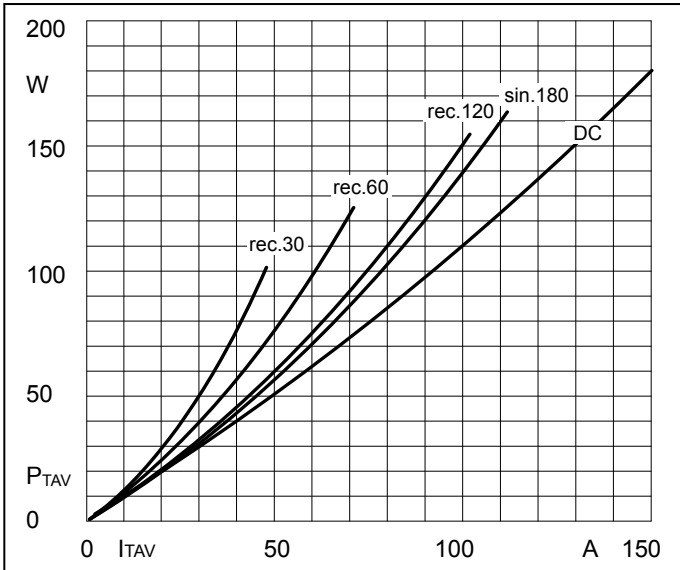


Fig1. Power dissipation

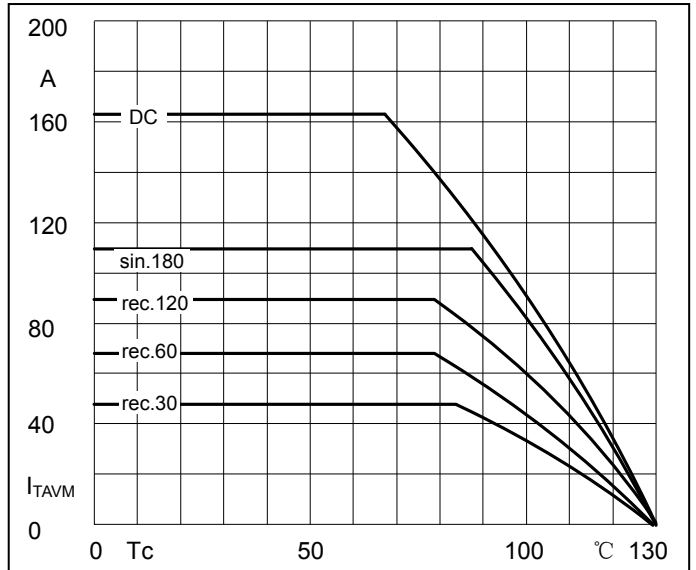


Fig2. Forward Current Derating Curve

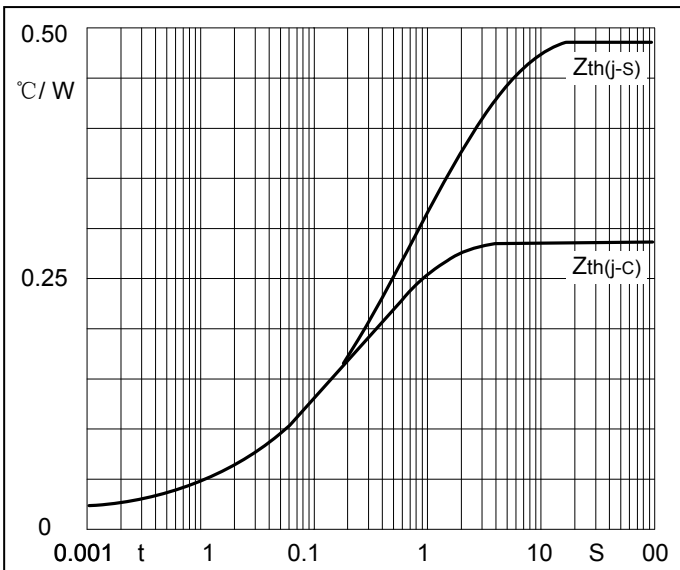


Fig3. Transient thermal impedance

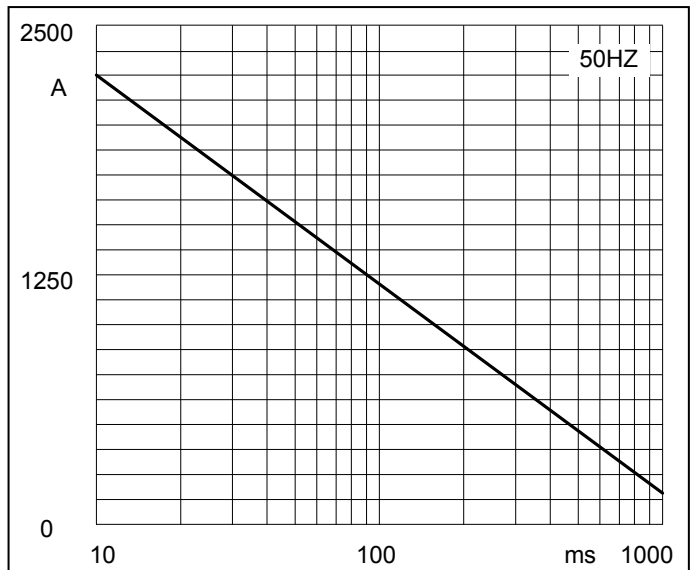


Fig4. Max Non-Repetitive Forward Surge Current

Performance Curves

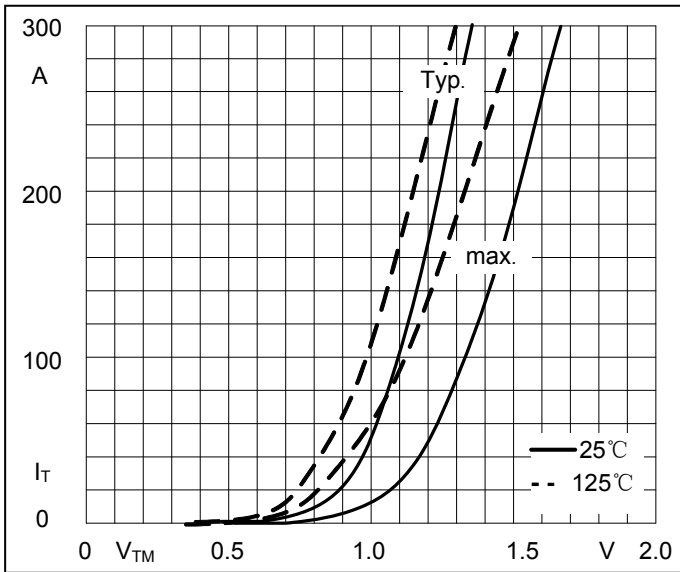


Fig5. Forward Characteristics

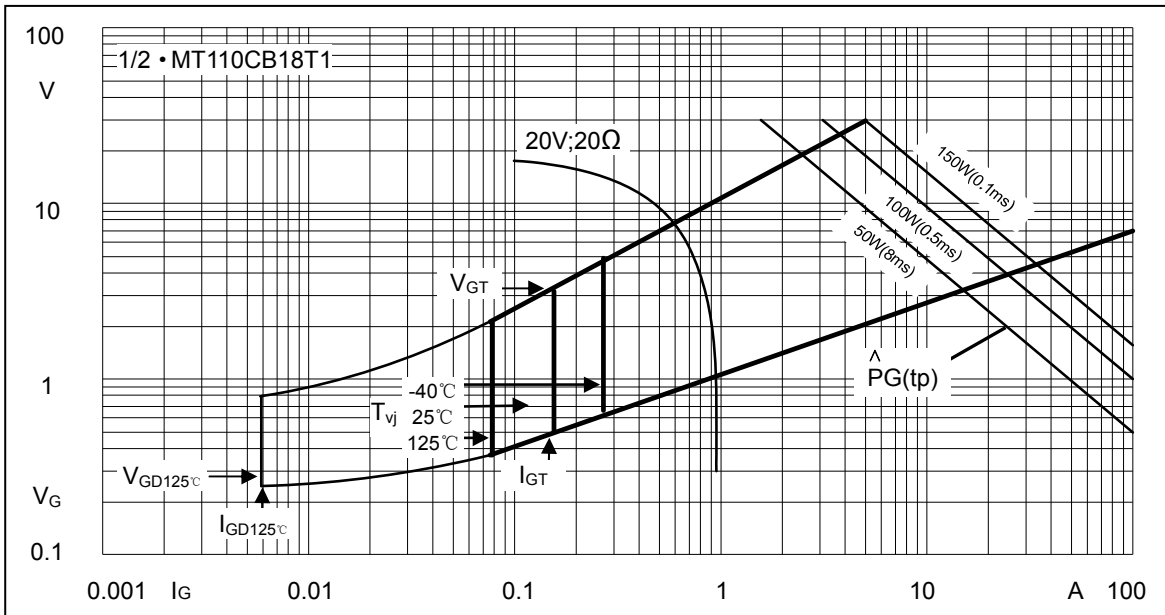


Fig6. Gate trigger Characteristics



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Ordering Information :

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

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