Micro Commercial Components

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MT90C08T1
MT90C12T1
MT90C16T1
MT90C18T1

90 Amp
THYRISTOR MODULE
800~1800 Volts

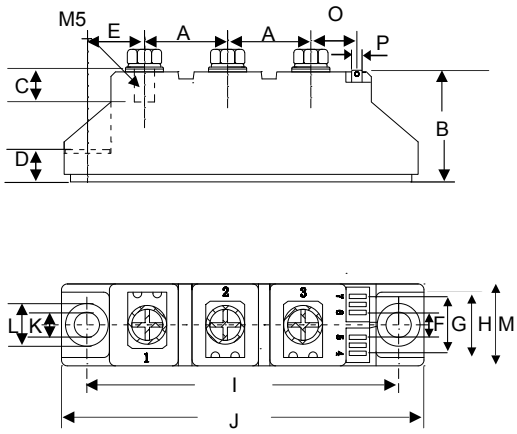
Features

- 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

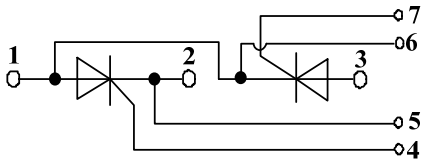
Applications

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

T1



Circuit



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
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℃	90	A
I_{TSM}	T_{VJ}=45℃ t=10ms, sine T_{VJ}=125℃ t=10ms, sine	2000 1750	A
i^2t	T_{VJ}=45℃ t=10ms, sine T_{VJ}=125℃ t=10ms, sine	20000 15000	A2s
Visol	a.c.50HZ;r.m.s.;1min	3000	V
Tvj		-40 to 130	℃
Tstg		-40 to 125	℃
Mt	To terminals(M5)	3±15%	Nm
Ms	To heatsink(M6)	5±15%	Nm
di/dt	T_{VJ}= T_{VJM} , 2/3V_{DRM} ,I_G =500mA 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	℃/W
Rth(c-s)	per thyristor / per module	0.2/0.1	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
V_{TM}	T=25℃ I_{TM} =300A			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℃)			0.9	V
r_T	T_{VJ} =T_{VJM}			2	mΩ
V_{GT}	T_{VJ} =25℃ , V_D =6V			3.0	V
I_{GT}	T_{VJ} =25℃ , V_D =6V			150	mA
V_{GD}	T_{VJ} =125℃ , V_D =2/3V_{DRM}			0.25	V
I_{GD}	T_{VJ} =125℃ , V_D =2/3V_{DRM}			6	mA
I_L	T_{VJ} =25℃ , R_G = 33 Ω		300	600	mA
I_H	T_{VJ} =25℃ , V_D =6V		150	250	mA
tgd	T_{VJ} =25℃, I_G=1A, di_G/dt=1A/us		1		us
tq	T_{VJ} =T_{VJM}		100		us

Performance Curves

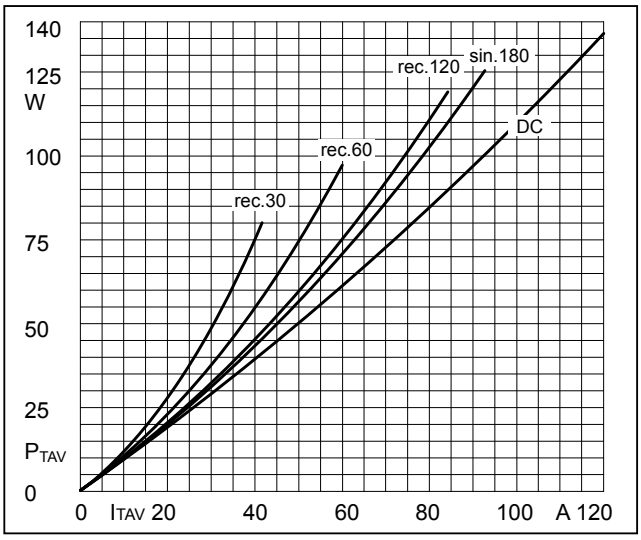


Fig1. Power dissipation

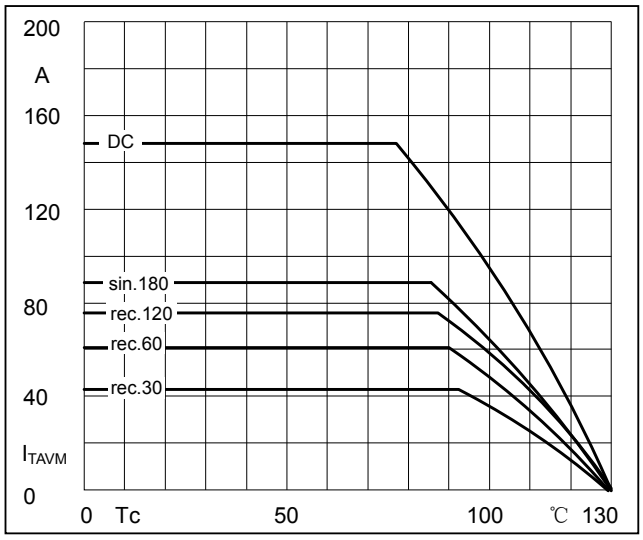


Fig2.Forward Current Derating Curve

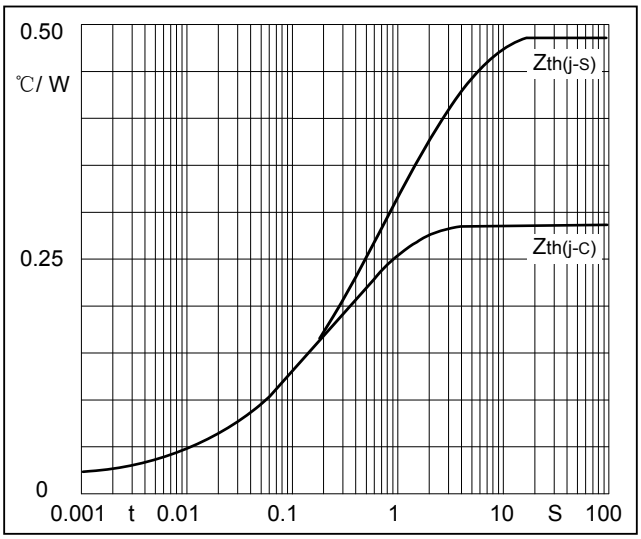


Fig3. Transient thermal impedance

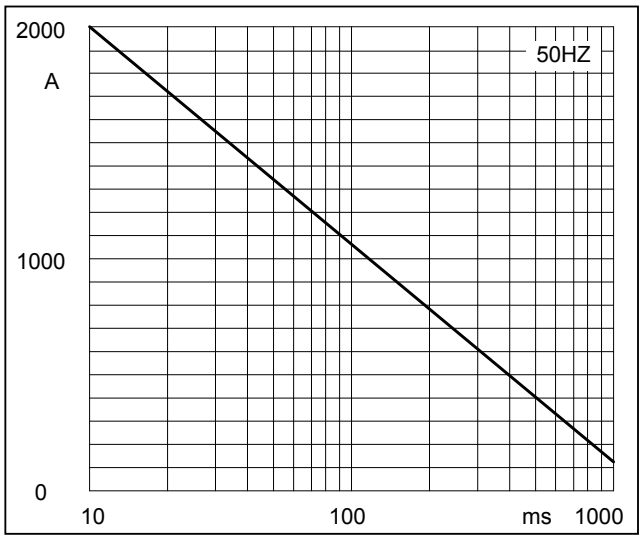


Fig4. Max Non-Repetitive Forward Surge Current

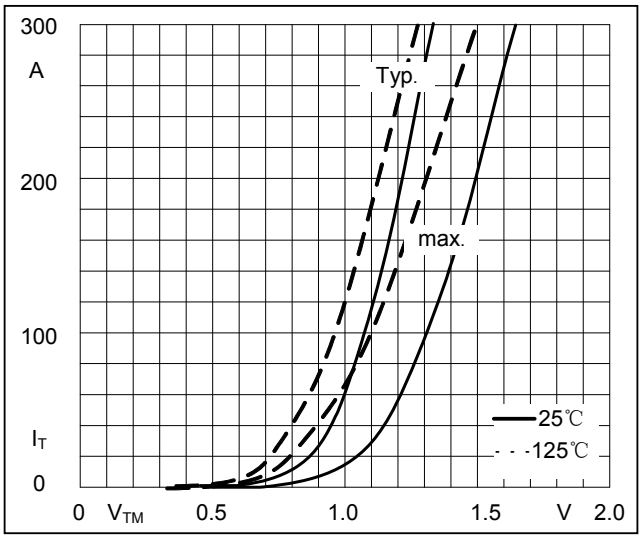


Fig5. Forward Characteristics

Performance Curves

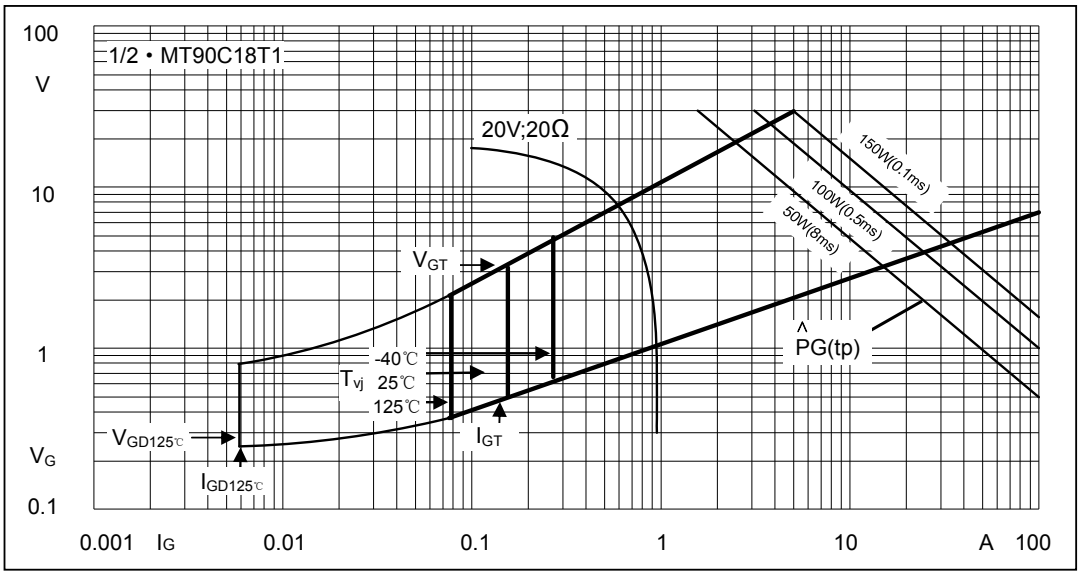


Fig6. Gate trigger Characteristics

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Ordering Information :

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

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