



Micro Commercial Components



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MT40C08T1
MT40C12T1
MT40C16T1
MT40C18T1

Features

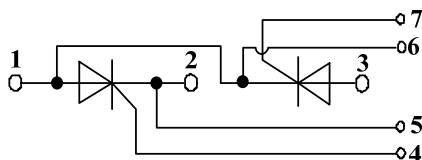
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- International standard package
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- Simple Mounting

Applications

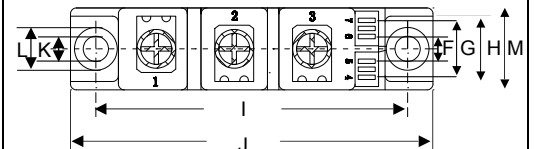
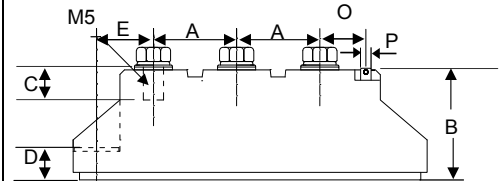
- Power Converters
- Lighting Control
- DC Motor Control and Drives
- Heat and temperature control



Circuit



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		Ø
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
MT40C08T1	800V	900V
MT40C12T1	1200V	1300V
MT40C16T1	1600V	1700V
MT40C18T1	1800V	1900V

Maximum Ratings

Symbol	Conditions	Values	Units
I_{TAV}	Sine 180°; $T_c=85^{\circ}C$	40	A
I_{TSM}	$T_{VJ}=45^{\circ}C$ $t=10ms$, sine $T_{VJ}=125^{\circ}C$ $t=10ms$, sine	1000 850	A
i^2t	$T_{VJ}=45^{\circ}C$ $t=10ms$, sine $T_{VJ}=125^{\circ}C$ $t=10ms$, sine	5000 3600	A ² s
Visol	a.c.50HZ;r.m.s.;1min	3000	V
T_{vj}		-40 to 125	°C
T_{stg}		-40 to 125	°C
Mt	To terminals(M5)	$3 \pm 15\%$	Nm
Ms	To heatsink(M6)	$5 \pm 15\%$	Nm
di/dt	$T_{VJ}=T_{VJM}$, $2/3V_{DRM}$, $I_G=500mA$ $Tr<0.5\mu s$, $tp>6\mu s$	150	A/ μs
dv/dt	$T_J=T_{VJM}$, $2/3V_{DRM}$ linear voltage rise	1000	V/ μs
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	0.65/0.33	°C/W
Rth(c-s)	per thyristor / per module	0.2/0.1	°C/W

Electrical Characteristics

Symbol	Conditions	Values			Units
V_{TM}	$T=25^{\circ}C$ $I_{TM}=200A$			1.95	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 ($T_{VJ}=125^{\circ}C$)			1.0	V
r_T	$T_{VJ}=T_{VJM}$			4.5	m Ω
V_{GT}	$T_{VJ}=25^{\circ}C$, $V_D=6V$			2.5	V
I_{GT}	$T_{VJ}=25^{\circ}C$, $V_D=6V$			150	mA
V_{GD}	$T_{VJ}=125^{\circ}C$, $V_D=2/3V_{DRM}$			0.25	V
I_{GD}	$T_{VJ}=125^{\circ}C$, $V_D=2/3V_{DRM}$			6	mA
I_L	$T_{VJ}=25^{\circ}C$, $R_G=33\Omega$		300	600	mA
I_H	$T_{VJ}=25^{\circ}C$, $V_D=6V$		150	250	mA
tgδ	$T_{VJ}=25^{\circ}C$, $I_G=1A$, $di_G/dt=1A/\mu s$	1			μs
tq	$T_{VJ}=T_{VJM}$	80			μs

Performance Curves

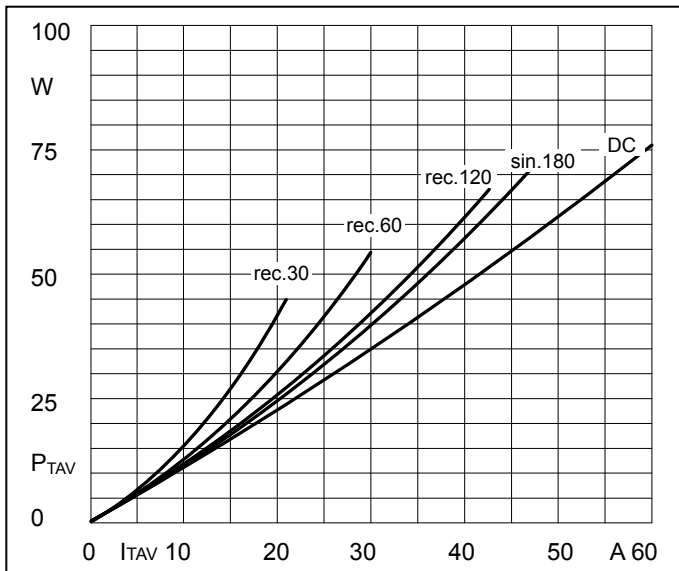


Fig1. Power dissipation

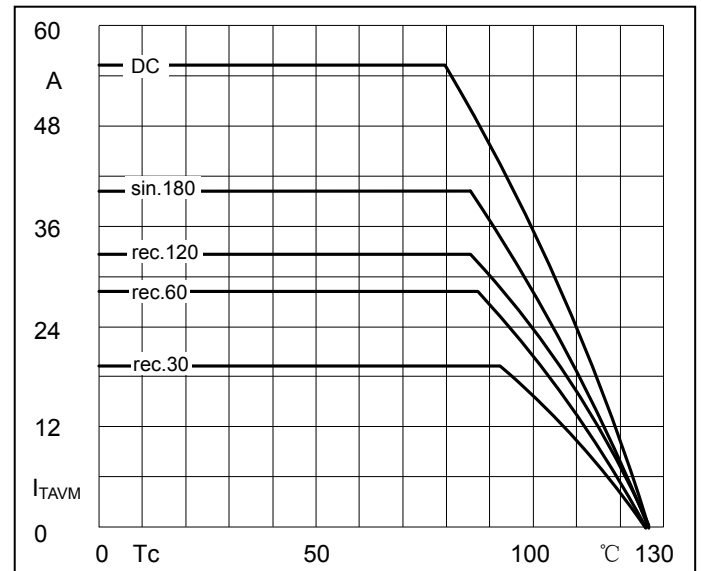


Fig2. Forward Current Derating Curve

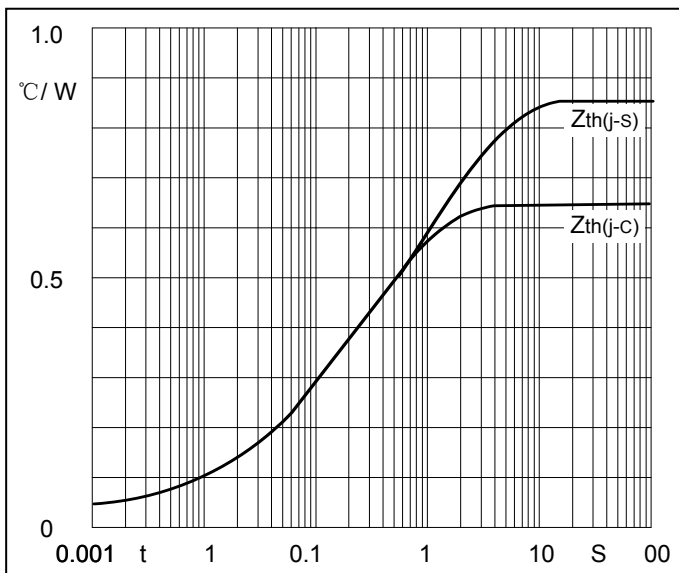


Fig3. Transient thermal impedance

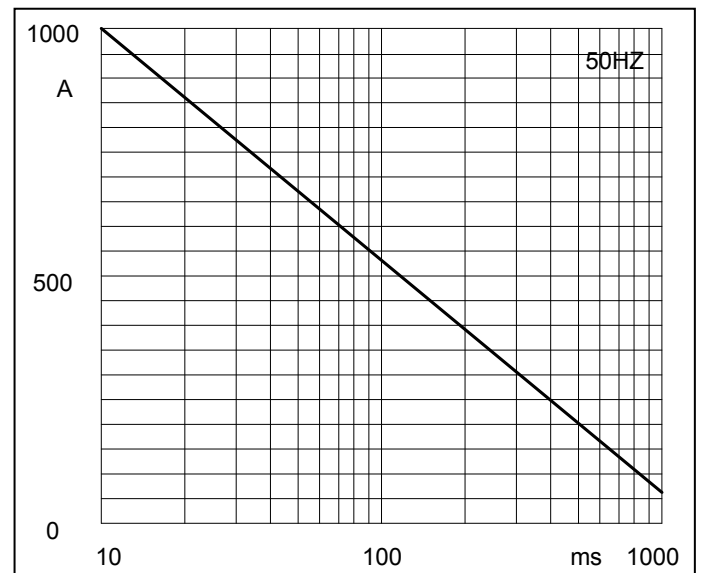


Fig4. Max Non-Repetitive Forward Surge Current

Performance Curves

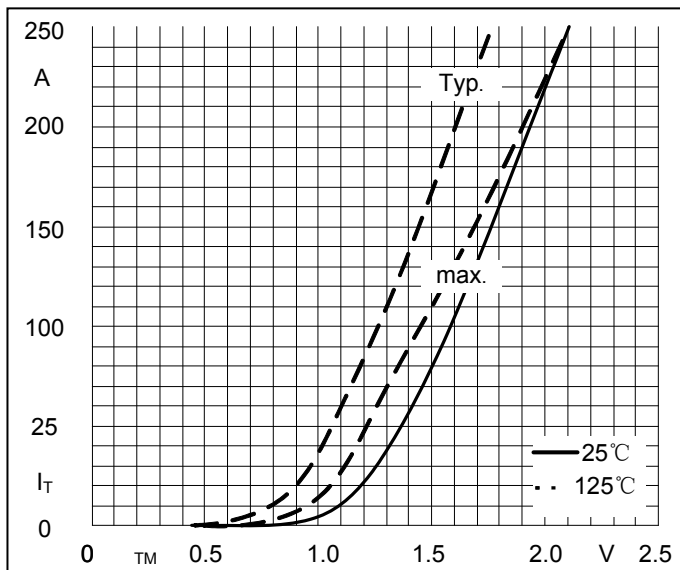


Fig5. Forward Characteristics

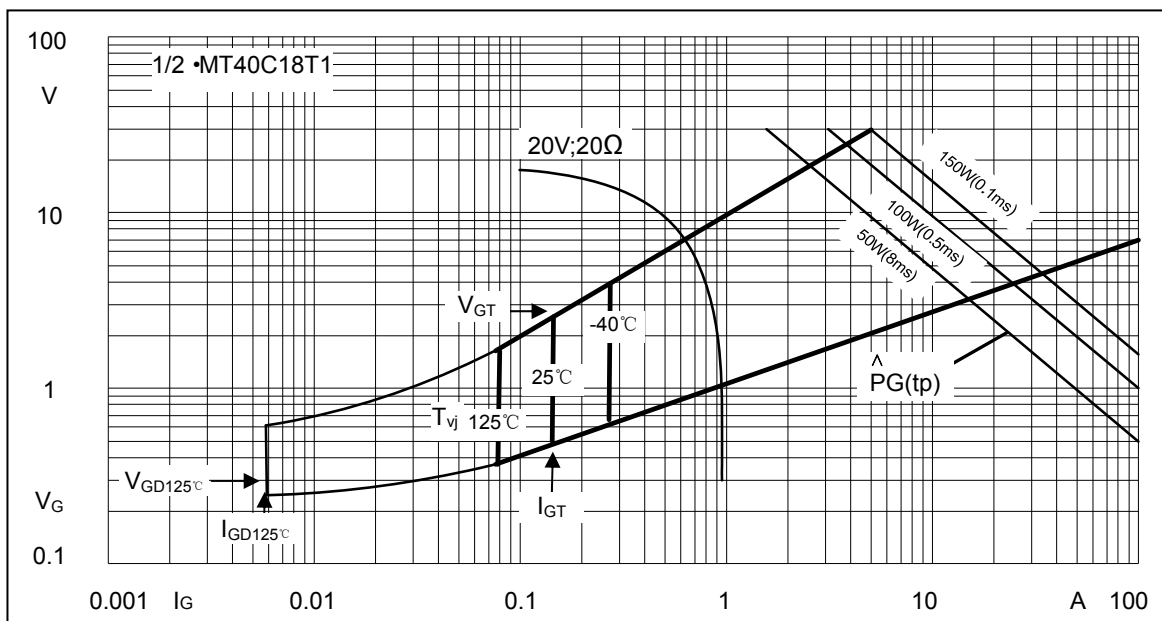


Fig6. Gate trigger Characteristics

Ordering Information :

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

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