



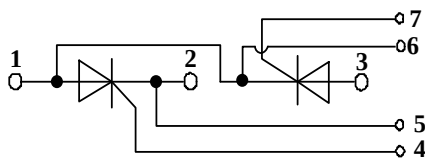
Thyristor Modules

V_{RRM} / V_{DRM} 800~1800V
I_{TAV} 90A

Applications

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

Circuit



Features

- International standard package
- High Surge Capability
- Glass passivated chip
- Simple Mounting
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- UL recognized applied for file no. E230084

Module Type

TYPE	V _{RRM}	V _{RSM}
MT90C08T1	800V	900V
MT90C12T1	1200V	1300V
MT90C16T1	1600V	1700V
MT90C08T1	1800V	1900V

Maximum Ratings

Symbol	Conditions	Values	Units
I _{TAV}	Sine 180°;T _c =85°C	90	A
I _{TSM}	T _{VJ} =45°C t=10ms, sine T _{VJ} =125°C t=10ms, sine	2000 1750	A
i ² t	T _{VJ} =45°C t=10ms, sine T _{VJ} =125°C t=10ms, sine	20000 15000	A ² s
Visol	a.c.50HZ;r.m.s.;1min	3000	V
T _{vj}		-40 to 130	°C
T _{stg}		-40 to 125	°C
M _t	To terminals(M5)	3±15%	Nm
M _s	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
R _{th(j-c)}	Cont.;per thyristor / per module	0.28/0.14	°C/W
R _{th(c-s)}	per thyristor / per module	0.2/0.1	°C/W



Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
V_{TM}	$T=25^{\circ}C$ $I_{TM}=300A$			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 ($T_{VJ}=125^{\circ}C$)			0.9	V
r_T	$T_{VJ}=T_{VJM}$			2	m Ω
V_{GT}	$T_{VJ}=25^{\circ}C$, $V_D=6V$			3	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
tg δ	$T_{VJ}=25^{\circ}C$, $I_G=1A$, $di_G/dt=1A/us$		1		μs
tq	$T_{VJ}=T_{VJM}$		100		μs

Performance Curves

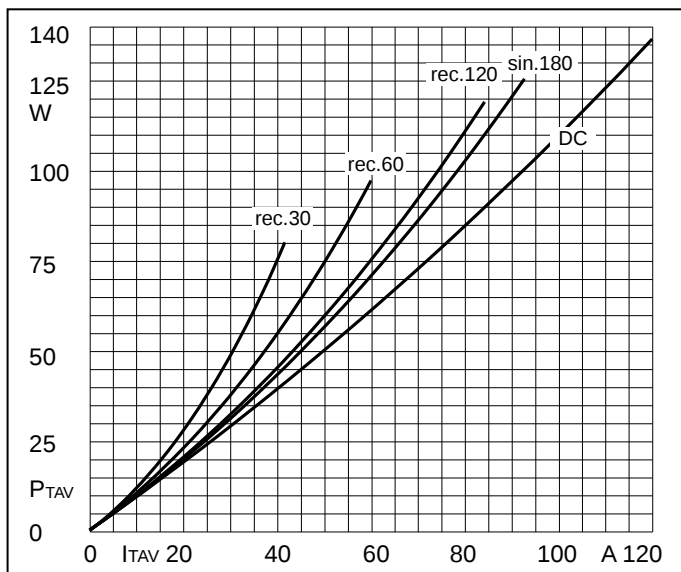


Fig1. Power dissipation

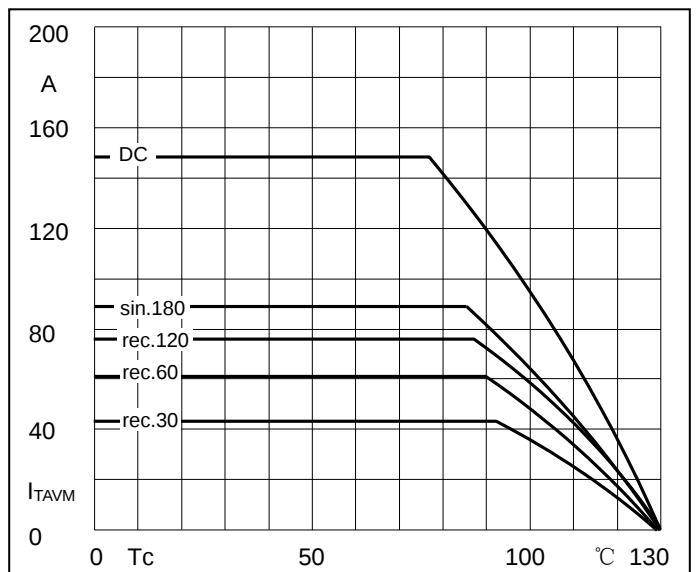


Fig2. Forward Current Derating Curve

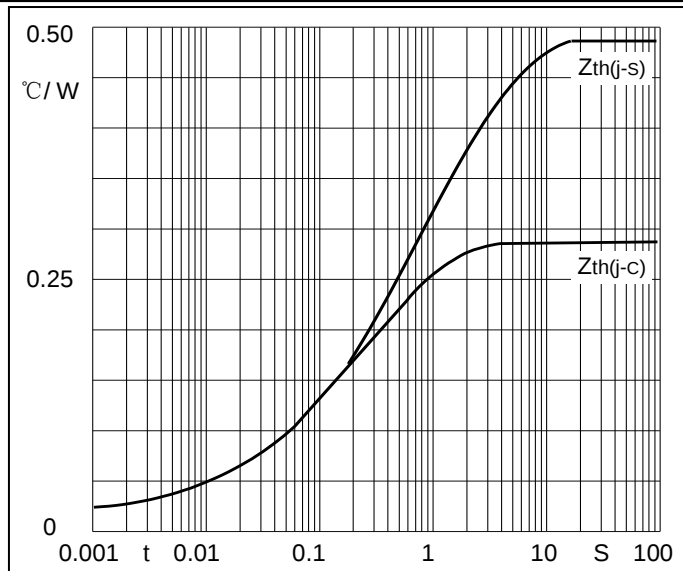


Fig3. Transient thermal impedance

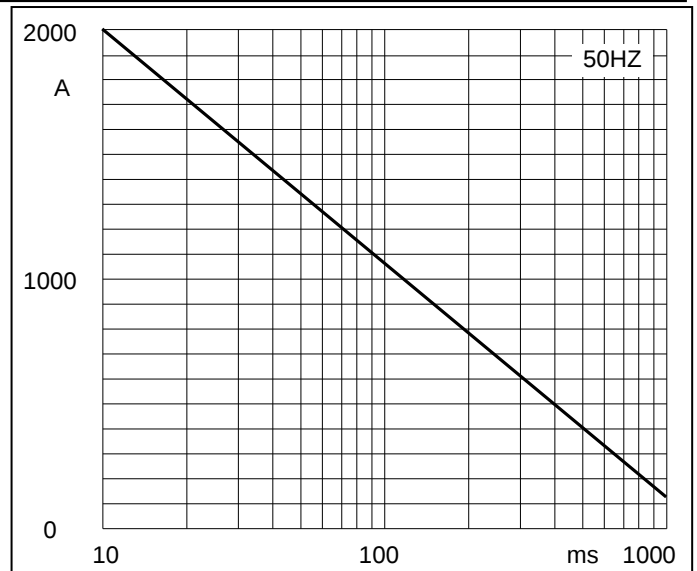


Fig4. Max Non-Repetitive Forward Surge Current

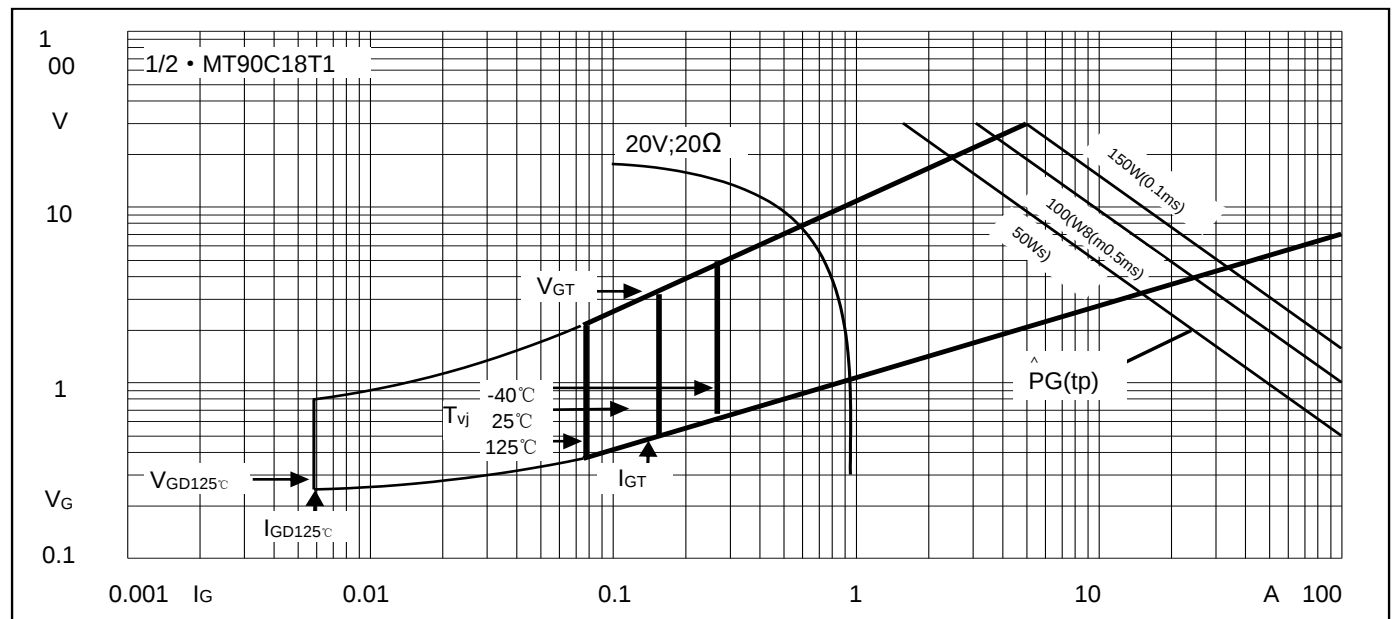
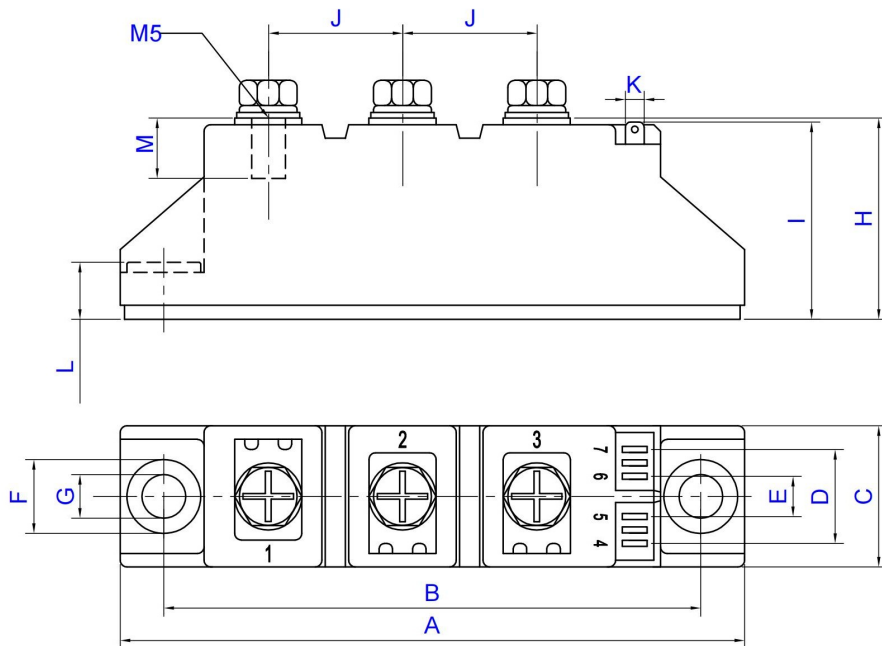


Fig5. Gate trigger Characteristics

Package Outline Information

CASE: T1



DIM	Min (mm)	Max (mm)	Note
A	92.5	93.5	
B	79.5	80.5	
C	20.5	21.5	
D	13.5	14.5	
E	5.5	6.5	
F	10.5	11.5	
G	6.2	6.8	Ø
H	29.5	30.5	
I	28.5	29.5	
J	19.5	20.5	
K	2.3	3.5	
L	8.2	8.8	
M	8.5	9.5	

Packing Standard

Item	Length: A (mm)	Width: B (mm)	Height: C (mm)	Quantity (PCS)
Inner Box	276	258	48	10
Outer Carton	545	295	240	100



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