



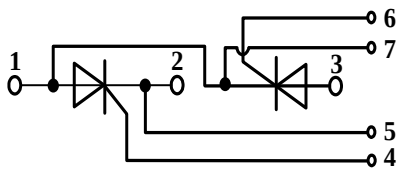
Thyristor Modules

VRRM / VDRM 800 to 1800V
ITAV 160A

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	VRRM	VRSM
MT160C08T2	800V	900V
MT160C12T2	1200V	1300V
MT160C16T2	1600V	1700V
MT160C18T2	1800V	1900V

Maximum Ratings

Symbol	Conditions	Values	Units
ITAV	Sine 180°;Tc=85°C	160	A
ITSM	Tvj=45°C t=10ms, sine Tvj=125°C t=10ms, sine	3600 3200	A
i²t	Tvj=45°C t=10ms, sine Tvj=125°C t=10ms, sine	64800 51200	A²s
Visol	a.c.50HZ;r.m.s.;1min	3000	V
Tvj		-40 to 125	°C
Tstg		-40 to 125	°C
Mt	To terminals(M6)	3±15%	Nm
Ms	To heatsink(M6)	5±15%	Nm
di/dt	Tvj= TvJM , 2/3VDRM ,Ig =500mA Tr<0.5us,tp>6us	200	A/us
dv/dt	Tj= TvJM ,2/3VDRM, linear voltage rise	1000	V/us
a	Maximum allowable acceleration	50	m/s²
Weight	Module(Approximately)	165	g

Thermal Characteristics

Symbol	Conditions	Values	Units
Rth(j-c)	Cont.;per thyristor / per module	0.17/0.085	°C/W
Rth(c-s)	per thyristor / per module	0.1/0.05	°C/W



Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
V_{TM}	$T=25^{\circ}C$ $I_{TM}=500A$			1.75	V
I_{RRM}/I_{DRM}	$T_{VJ}=T_{VJM}$, $V_R=V_{RRM}$, $V_D=V_{DRM}$			40	mA
V_{TO}	For power-loss calculations only ($T_{VJ}=125^{\circ}C$)			0.85	V
r_T	$T_{VJ}=T_{VJM}$			1.5	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}	$T_{VJ}=125^{\circ}C$, $V_D=2/3V_{DRM}$			10	mA
I_L	$T_{VJ}=25^{\circ}C$, $R_G=33\Omega$		300	1000	mA
I_H	$T_{VJ}=25^{\circ}C$, $V_D=6V$		150	400	mA
tg d	$T_{VJ}=25^{\circ}C$, $I_G=1A$, $di_G/dt=1A/us$		1		us
tq	$T_{VJ}=T_{VJM}$		100		us

Performance Curves

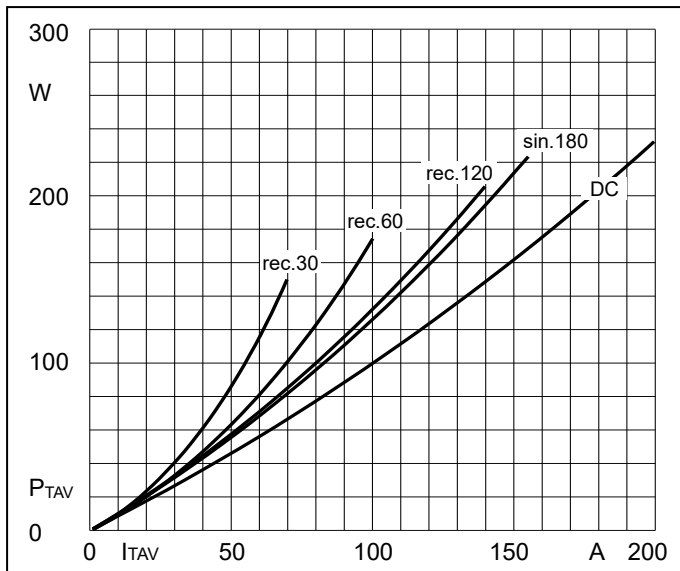


Fig1. Power dissipation

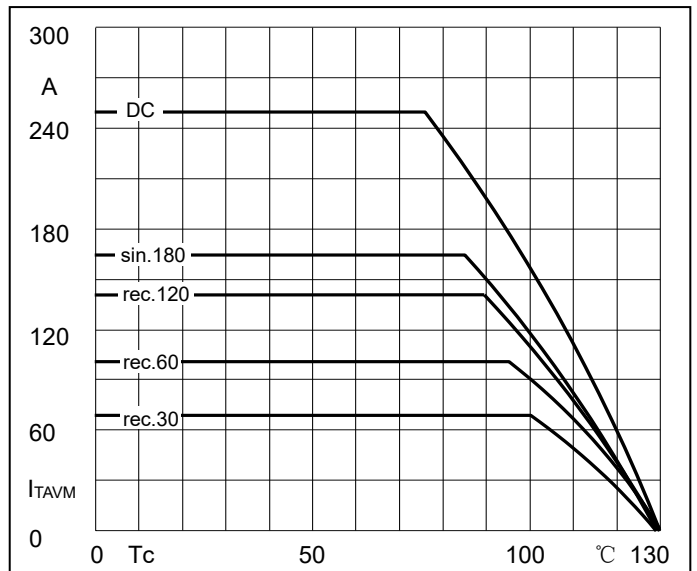


Fig2. Forward Current Derating Curve

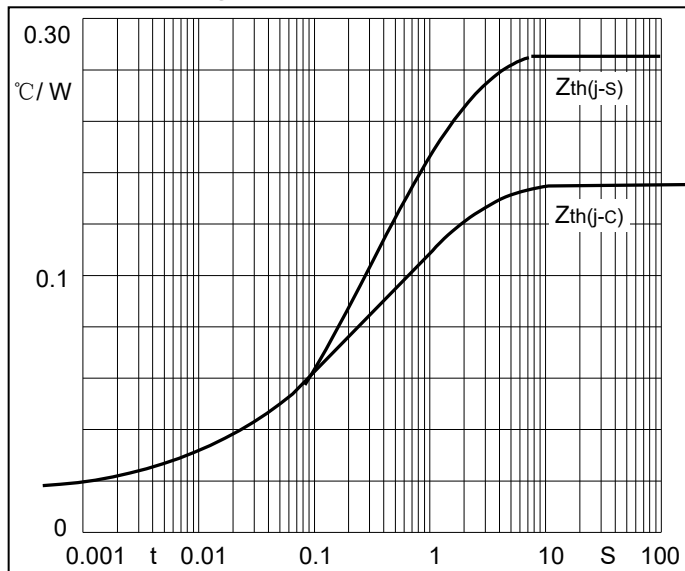


Fig3. Transient thermal impedance

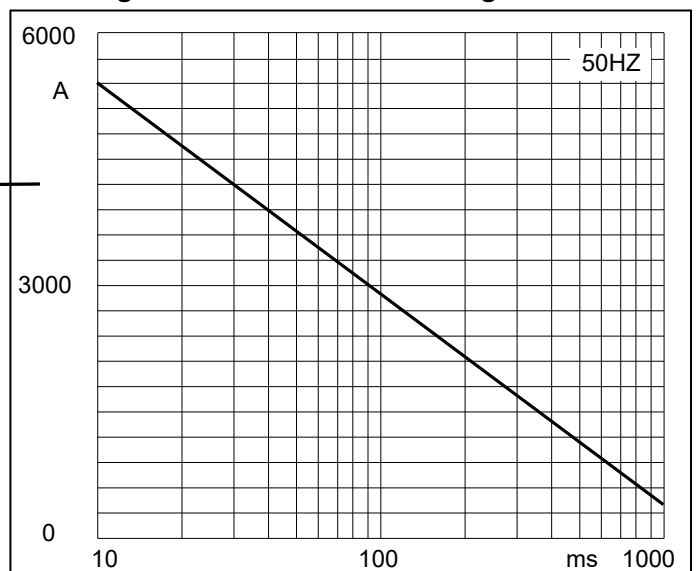
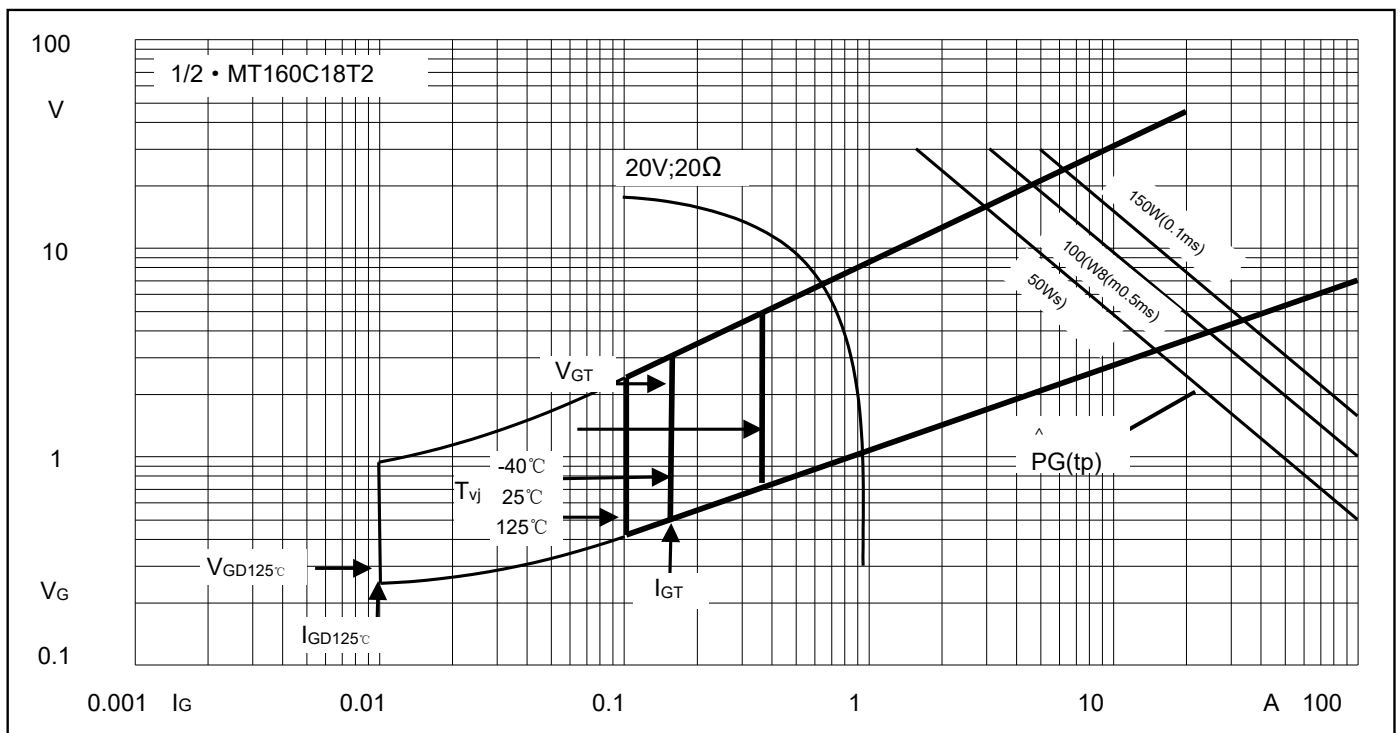
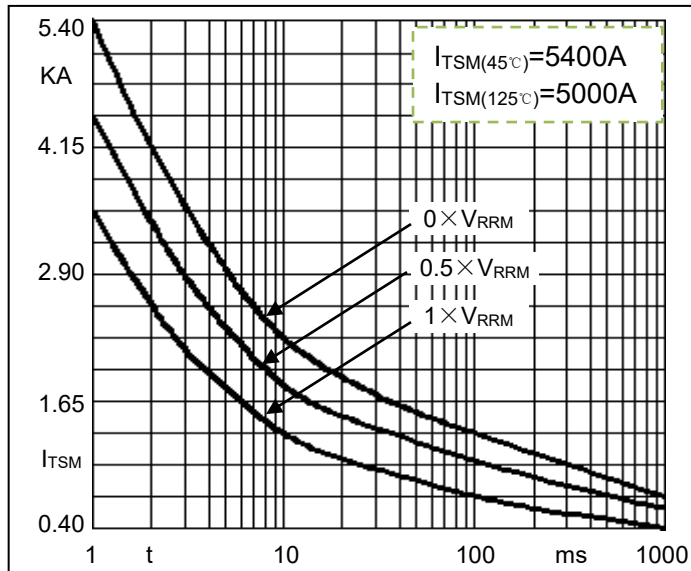
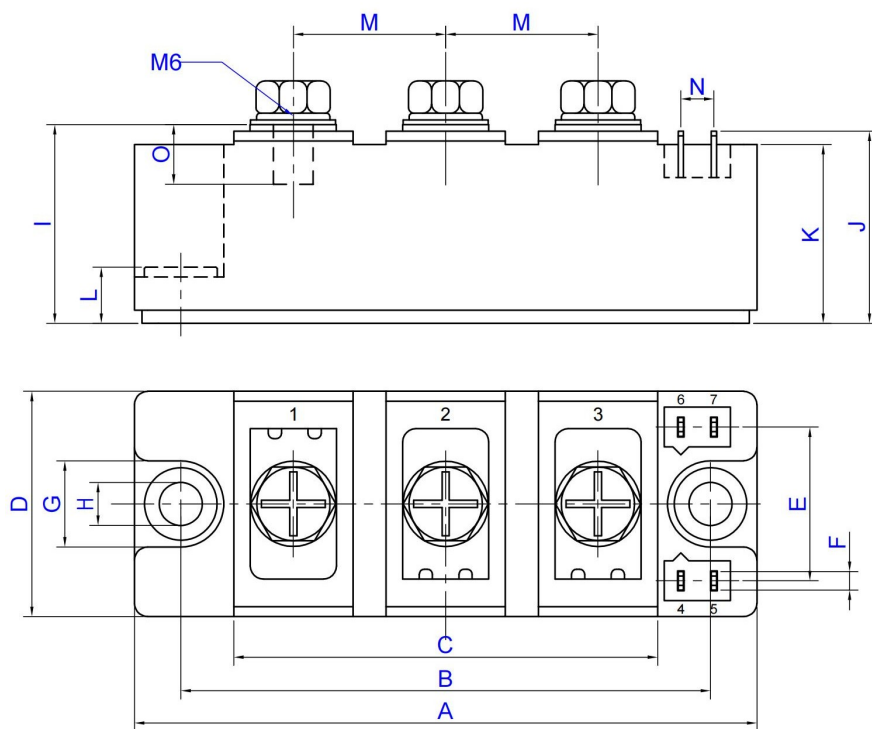


Fig4. Max Non-Repetitive Forward Surge Current



Package Outline Information

CASE: T2



DIM	Min (mm)	Max (mm)	Note
A	93.5	94.5	
B	79.5	80.5	
C	63.5	64.5	
D	33.5	34.5	
E	22.7	23.7	
F	2.3	3.3	
G	12.5	13.5	
H	6.2	6.8	Ø
I	29.5	30.5	
J	29	30	
K	26.5	27.5	
L	8.2	8.8	
M	22.5	23.5	
N	4.5	5.5	
O	13.5	15.5	

Packing Standard

Item	Length: A (mm)	Width: B (mm)	Height: C (mm)	Quantity (PCS)
Inner Box	276	258	48	8
Outer Carton	545	295	240	80



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