



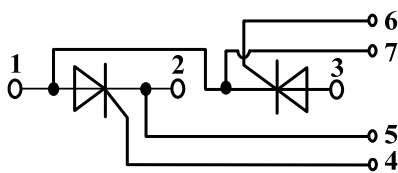
Thyristor Modules

VRRM / VDRM 800 to 2000V
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. E360040

Module Type

TYPE	VRRM	VRSM
MT160C08SCT2	800V	900V
MT160C12SCT2	1200V	1300V
MT160C16SCT2	1600V	1700V
MT160C18SCT2	1800V	1900V
MT160C20SCT2	2000V	2100V

Maximum Ratings

Symbol	Conditions	Values	Units
I_{TAV}	Sine 180°; $T_c=85^{\circ}C$	160	A
I_{TSM}	$T_{VJ}=45^{\circ}C$ $t=10ms$, sine $T_{VJ}=125^{\circ}C$ $t=10ms$, sine	5400 5000	A
i^2t	$T_{VJ}=45^{\circ}C$ $t=10ms$, sine $T_{VJ}=125^{\circ}C$ $t=10ms$, sine	145000 125000	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
Mt	To terminals(M6)	$3 \pm 15\%$	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)	162	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}	$T=25^{\circ}\text{C}$ $I_{TM}=500\text{A}$		1.20	1.80	V
I_{RRM}/I_{DRM}	$T_{VJ}=T_{VJM}$, $V_R=V_{RRM}$, $V_D=V_{DRM}$			50	mA
V_{TO}	For power-loss calculations only ($T_{VJ}=125^{\circ}\text{C}$)			0.95	V
r_T	$T_{VJ}=T_{VJM}$			1.6	m Ω
V_{GT}	$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$			2	V
I_{GT}	$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$			150	mA
V_{GD}	$T_{VJ}=125^{\circ}\text{C}$, $V_D=2/3V_{DRM}$	0.25			V
I_{GD}	$T_{VJ}=125^{\circ}\text{C}$, $V_D=2/3V_{DRM}$			10	mA
I_L	$T_{VJ}=25^{\circ}\text{C}$, $R_G=33\ \Omega$		300	500	mA
I_H	$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$		150	250	mA
tg δ	$T_{VJ}=25^{\circ}\text{C}$, $I_G=1\text{A}$, $di_G/dt=1\text{A}/\mu\text{s}$	1			μs
t $_q$	$T_{VJ}=T_{VJM}$	100			μs

Performance Curves

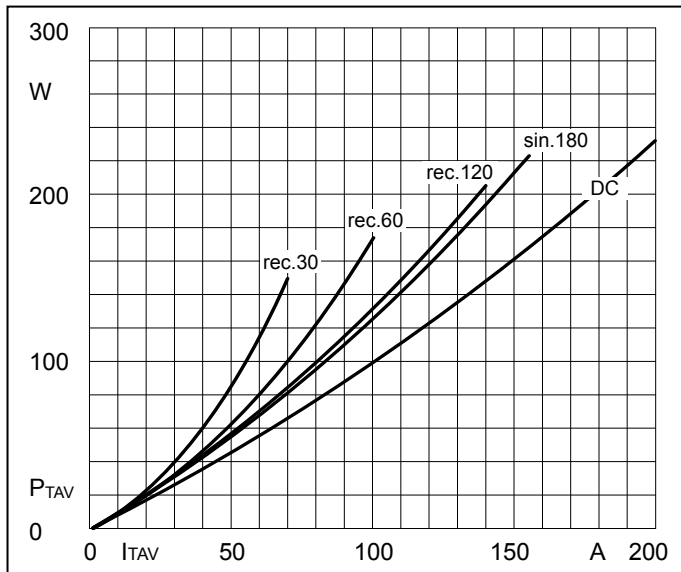


Fig1. Power dissipation

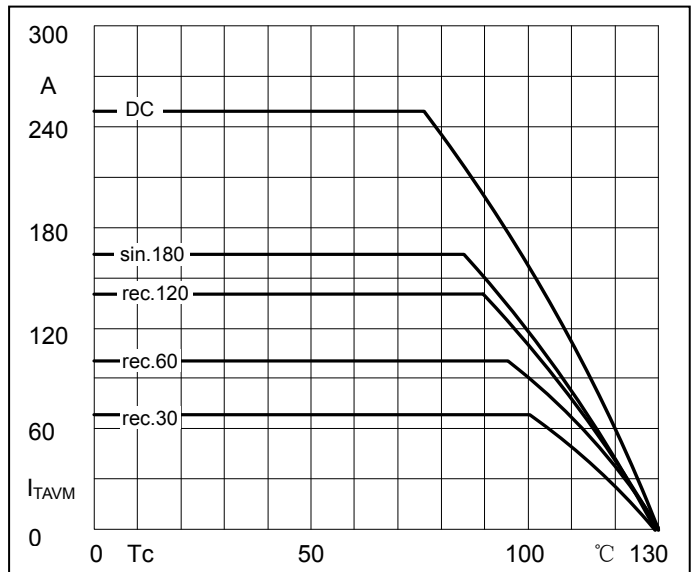


Fig2. Forward Current Derating Curve

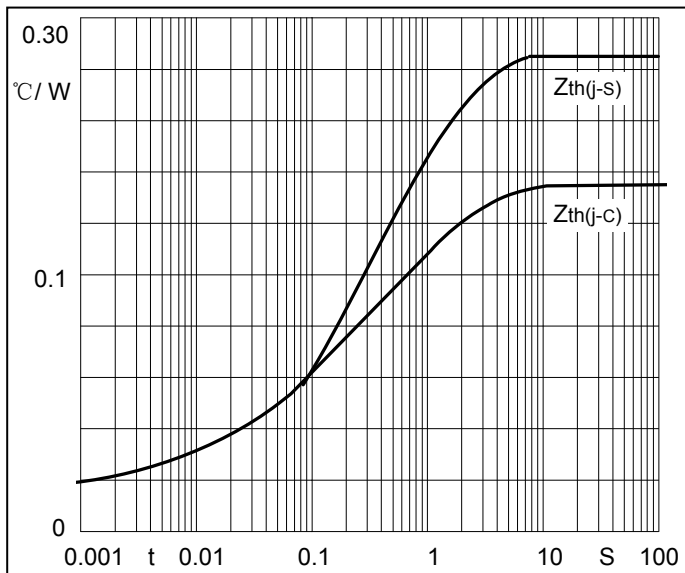


Fig3. Transient thermal impedance

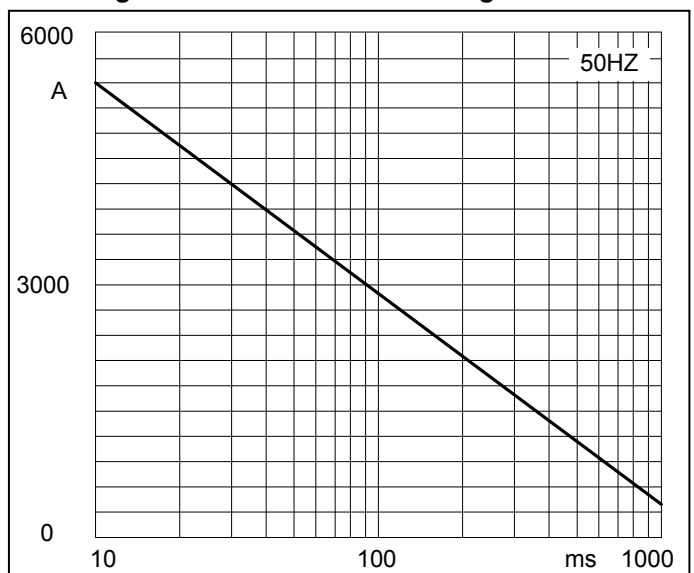


Fig4. Max Non-Repetitive Forward Surge Current

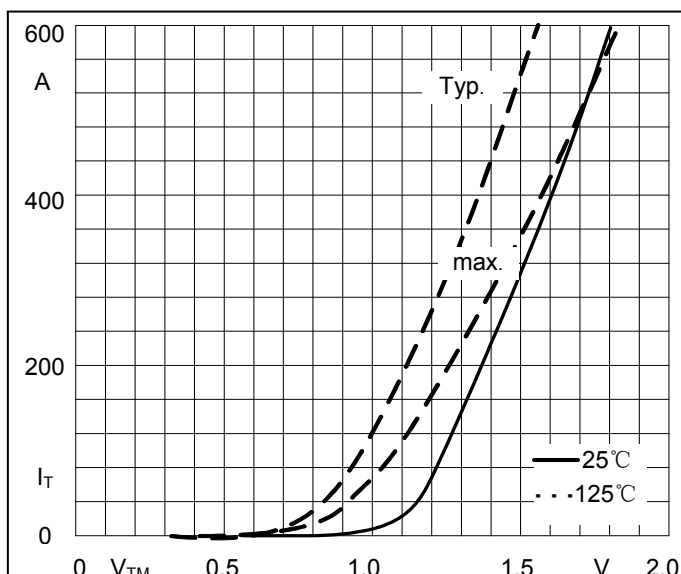


Fig5. Forward Characteristics

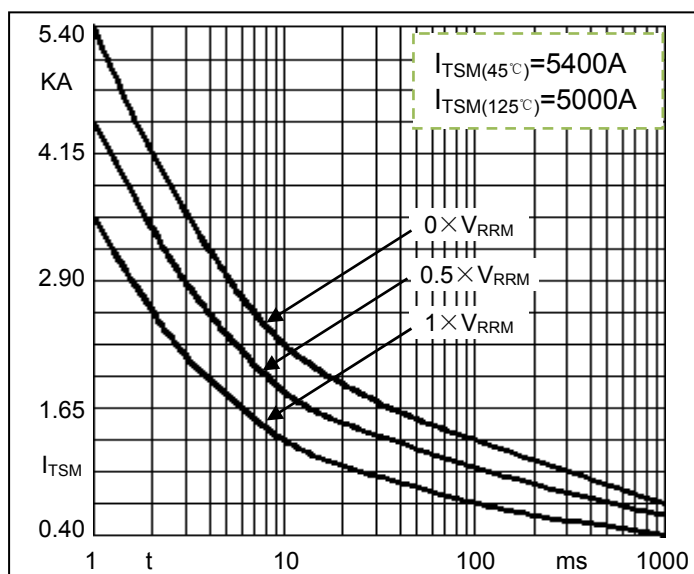


Fig6. Surge overload current vs. Cycles

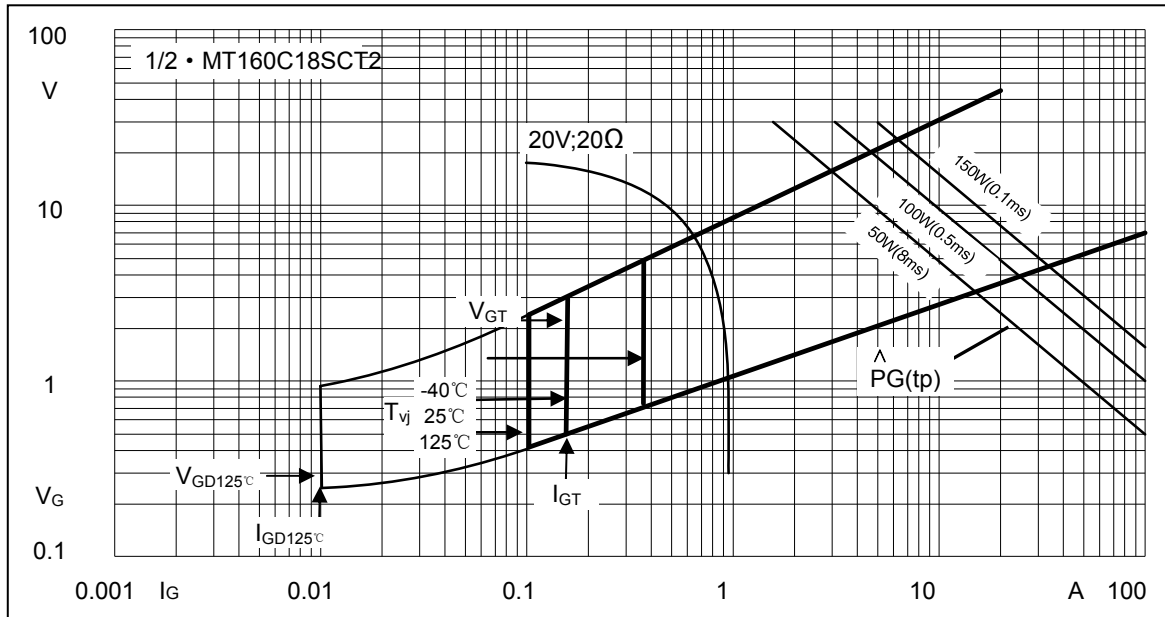
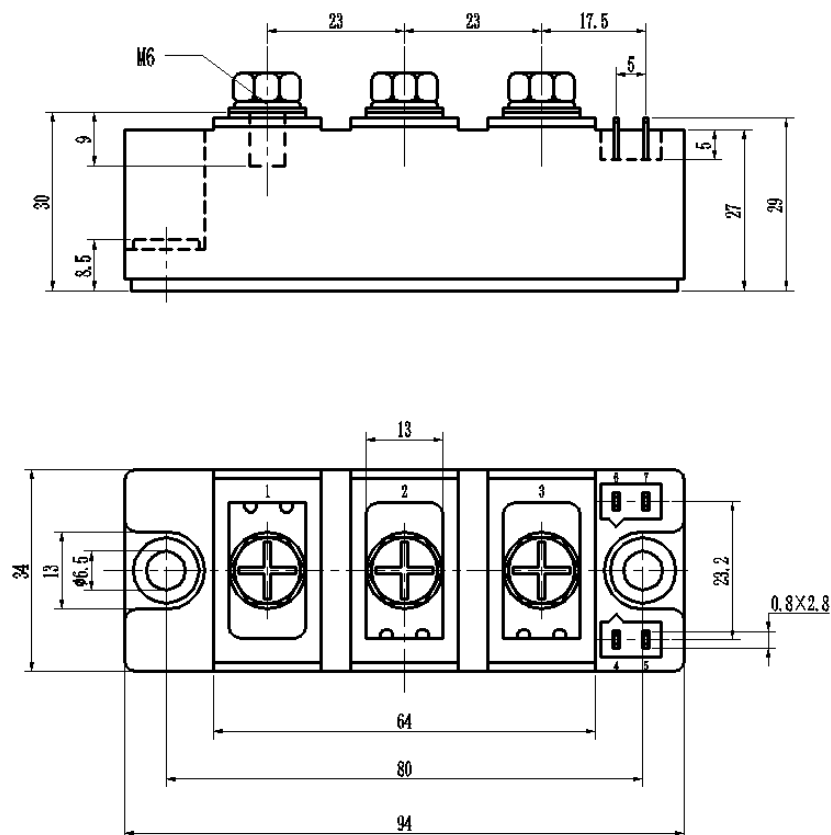


Fig7. Gate trigger Characteristics

Package Outline Information

CASE: T2



Dimensions in mm