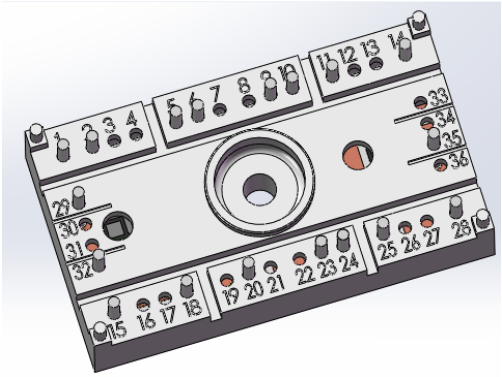


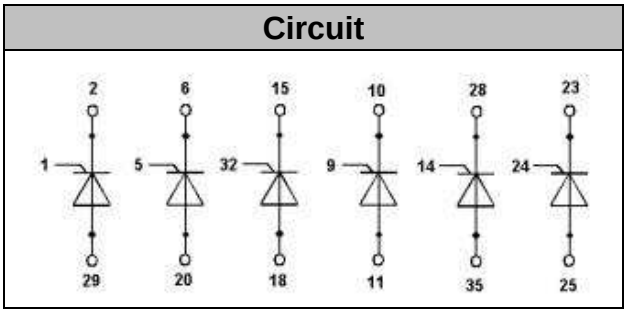
Thyristor Modules

V_{RRM} / V_{DRM}	800 to 1800V
I_{TAV}	45A

Applications

- Soft starters
- Lighting Control
- Heat and temperature control

Circuit



Features

- Compact Design
- High Surge Capability
- Glass passivated thyristor chip
- One Screw Mounting
- Heat transfer and isolation through direct copper bonded aluminum oxide ceramic (DBC)
- Low Forward Voltage
- UL recognized applied for file no. E230084

Module Type

TYPE	V_{RRM}	V_{RSM}
MT45SU08P1	800V	900V
MT45SU12P1	1200V	1300V
MT45SU16P1	1600V	1700V
MT45SU18P1	1800V	1900V

Maximum Ratings

Symbol	Conditions	Values	Units
I_{TAV}	Sine 180°;Tc=85℃	45	A
I_{TSM}	T_{VJ}=45℃ t=10ms, sine T_{VJ}=125℃ t=10ms, sine	500 420	A
i^2t	T_{VJ}=45℃ t=10ms, sine T_{VJ}=125℃ t=10ms, sine	1250 880	A^2s
Visol	a.c.50HZ;r.m.s.;1min	3000	V
Tvj		-40 to 125	℃
Tstg		-40 to 125	℃
T_{solder}	Terminals, 10s	260	℃
Mt	Mounting torque to heatsink(M4)	2.5±15%	Nm
di/dt	T_{VJ}= T_{VJM} , 2/3V_{DRM} ,I_G =500mA Tr<0.5us,tp>6us	50	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)	32	g

Thermal Characteristics

Symbol	Conditions	Values	Units
Rth(j-c)	per thyristor / per module	1.2/0.2	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
V_{TM}	T=25℃ I_{TM} =75A		1.4	1.6	V
I_{RRM}/I_{DRM}	T_{VJ} =T_{VJM} ,V_R=V_{RRM} ,V_D=V_{DRM}			9	mA
V_{TO}	For power-loss calculations only (T_{VJ} =125℃)			0.9	V
r_T	T_{VJ} =T_{VJM}			8	mΩ
V_{GT}	T_{VJ} =25℃ , V_D =6V			3.0	V
I_{GT}	T_{VJ} =25℃ , V_D =6V			100	mA
V_{GD}	T_{VJ} =125℃ , V_D =2/3V_{DRM}			0.25	V
I_{GD}	T_{VJ} =125℃ , V_D =2/3V_{DRM}			3	mA
I_L	T_{VJ} =25℃ , R_G = 33 Ω		150	300	mA
I_H	T_{VJ} =25℃ , V_D =6V		90	150	mA
tgd	T_{VJ} =25℃, I_G=1A, di_G/dt=1A/us		1		us
tq	T_{VJ} =T_{VJM}		80		us

Performance Curves

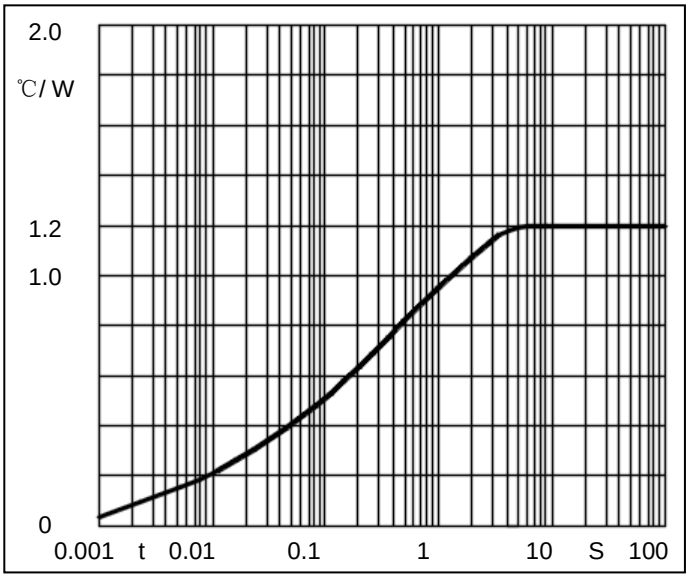


Fig1. Transient thermal impedance

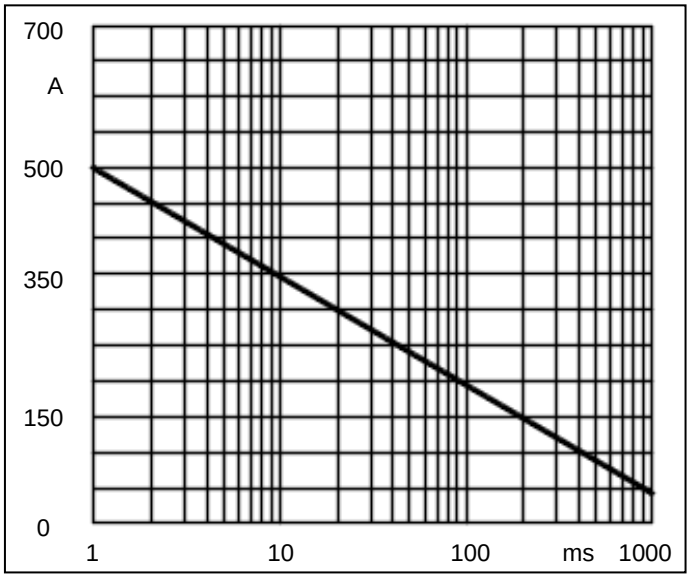


Fig2. Max Non-Repetitive Forward Surge Current

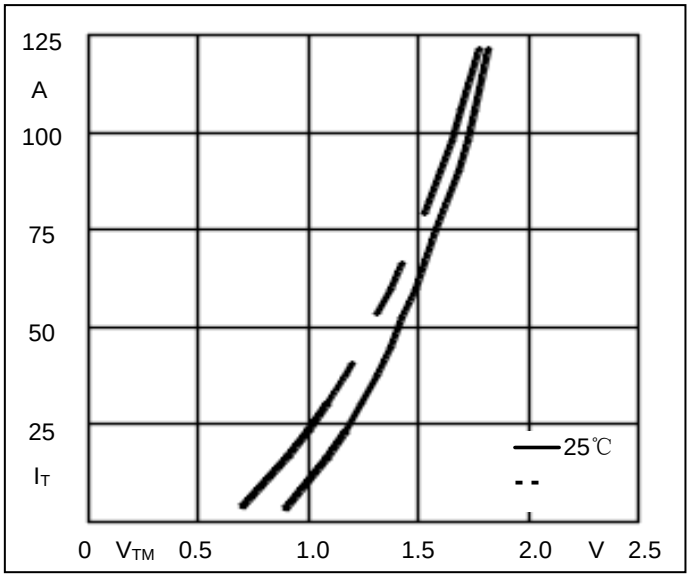


Fig3. Forward Characteristics

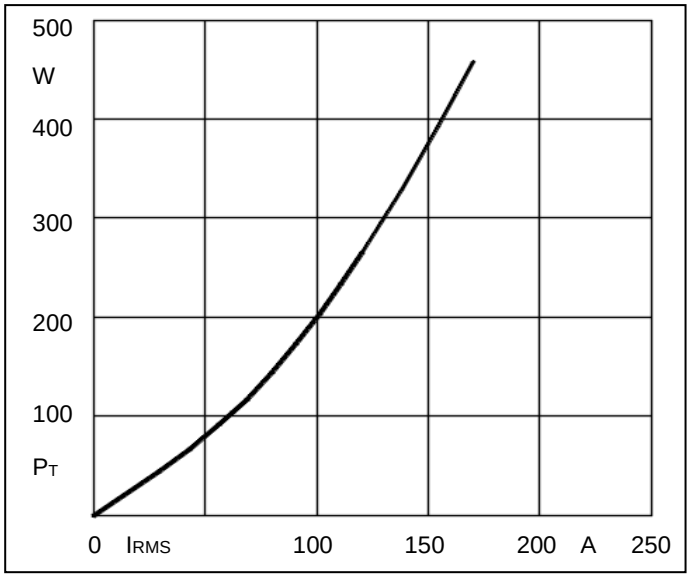


Fig4. Power dissipation

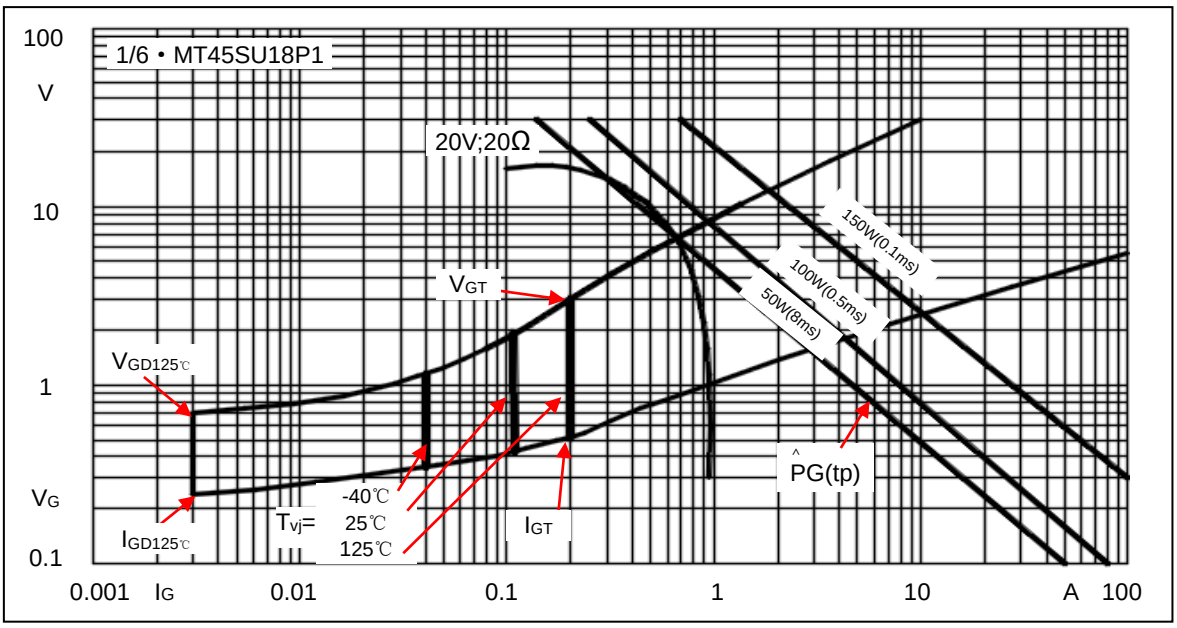
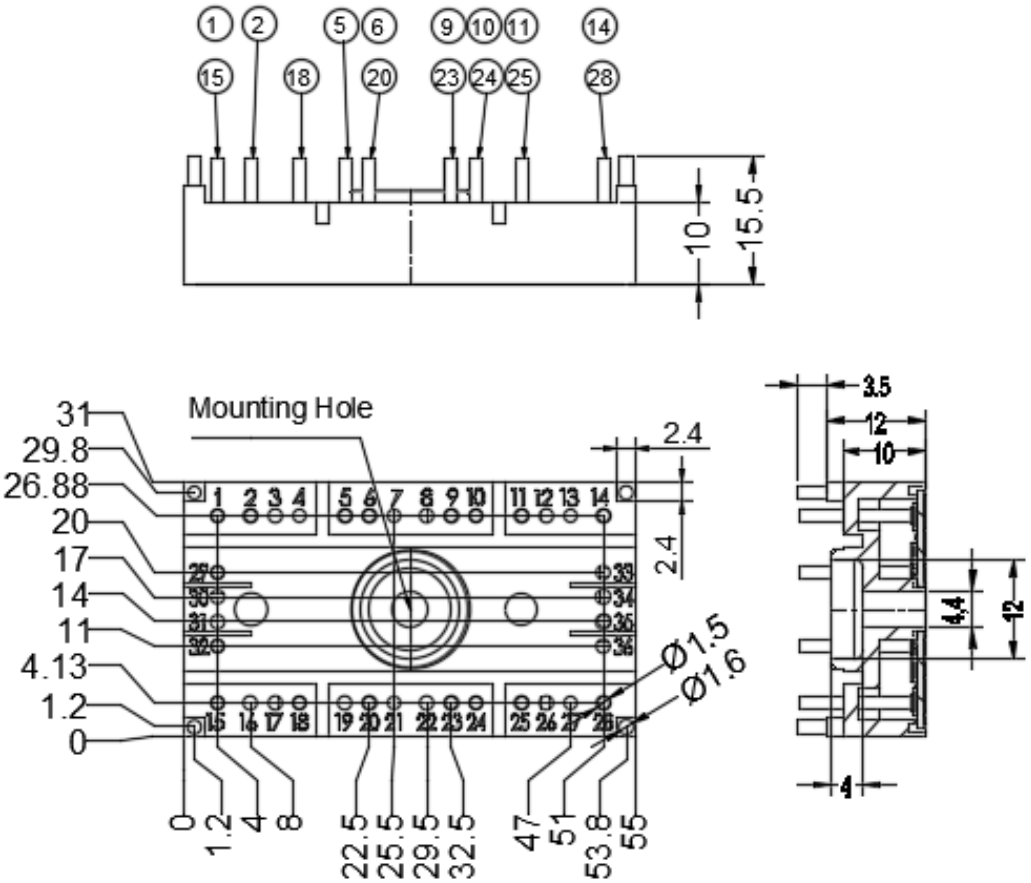


Fig5. Gate trigger Characteristics

Package Outline Information

CASE: P1



Dimensions in mm