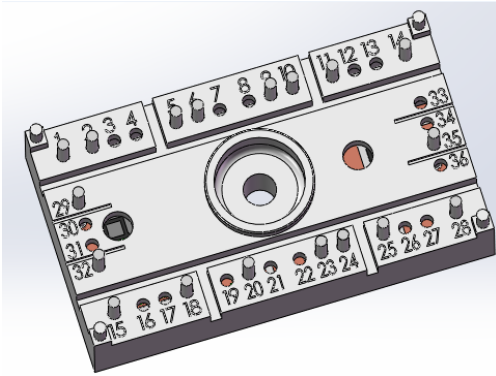




Thyristor Modules

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

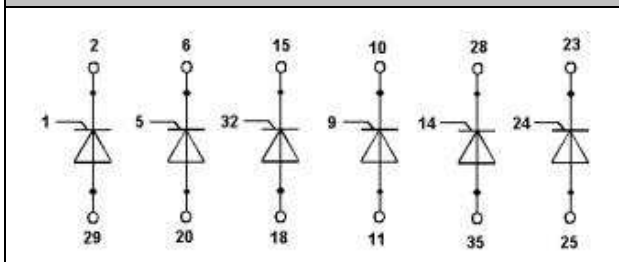
Applications

- Soft starters
- Lighting Control
- Heat and temperature control

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

Circuit



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°; T _c =85°C	45	A
I _{TSM}	T _{VJ} =45°C t=10ms, sine T _{VJ} =125°C t=10ms, sine	500 420	A
i ² t	T _{VJ} =45°C t=10ms, sine T _{VJ} =125°C t=10ms, sine	1250 880	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
T _{solder}	Terminals, 10s	260	°C
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
R _{th(j-c)}	per thyristor / per module	1.2/0.2	°C/W



Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
V_{TM}	$T=25^{\circ}\text{C}$ $I_{TM}=75\text{A}$		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 ($T_{VJ}=125^{\circ}\text{C}$)			0.9	V
r_T	$T_{VJ}=T_{VJM}$			8	m Ω
V_{GT}	$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$			3.0	V
I_{GT}	$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$			100	mA
V_{GD}	$T_{VJ}=125^{\circ}\text{C}$, $V_D=2/3V_{DRM}$			0.25	V
I_{GD}	$T_{VJ}=125^{\circ}\text{C}$, $V_D=2/3V_{DRM}$			3	mA
I_L	$T_{VJ}=25^{\circ}\text{C}$, $R_G=33\ \Omega$		150	300	mA
I_H	$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$		90	150	mA
tg d	$T_{VJ}=25^{\circ}\text{C}$, $I_G=1\text{A}$, $di_G/dt=1\text{A/us}$		1		μs
tq	$T_{VJ}=T_{VJM}$		80		μs

Performance Curves

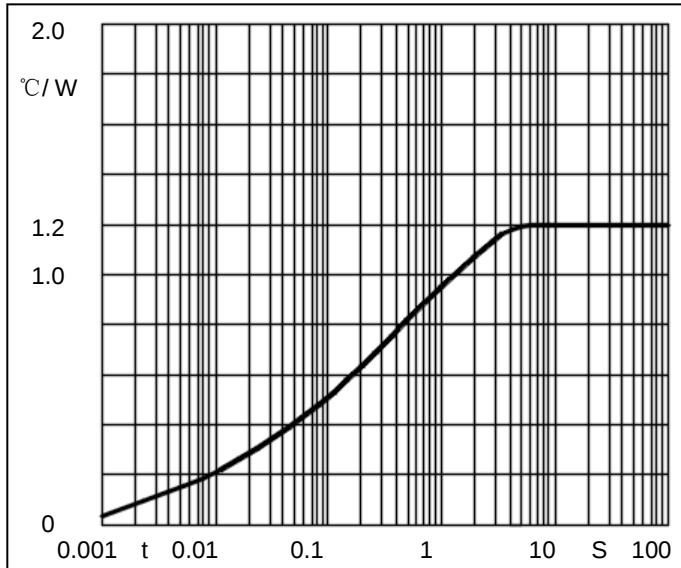


Fig1. Transient thermal impedance

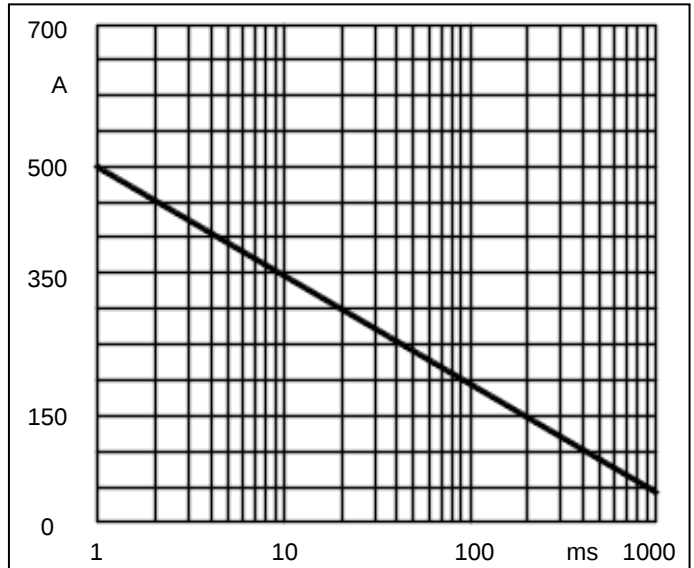


Fig2. Max Non-Repetitive Forward Surge Current

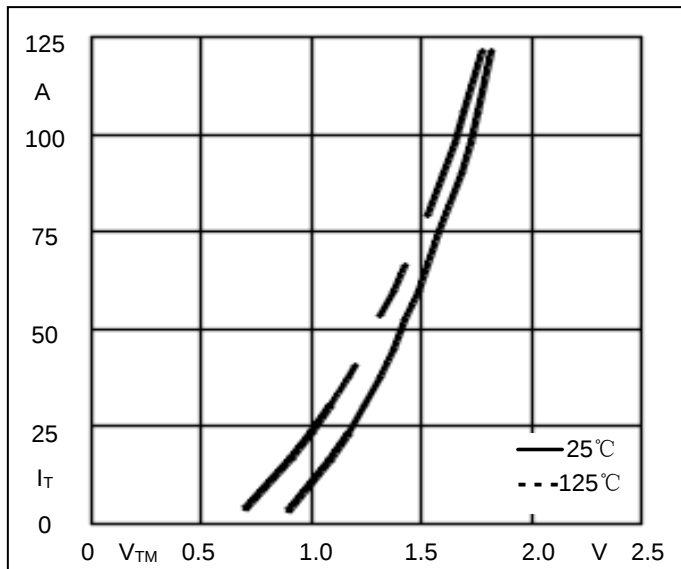


Fig3. Forward Characteristics

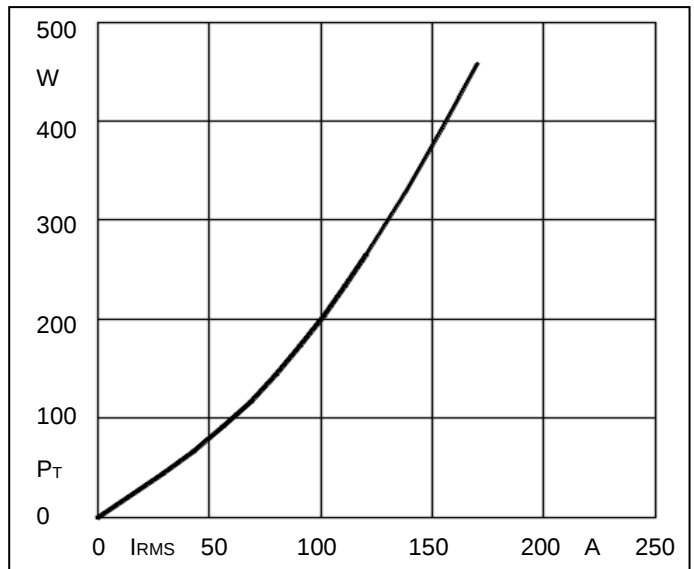


Fig4. Power dissipation

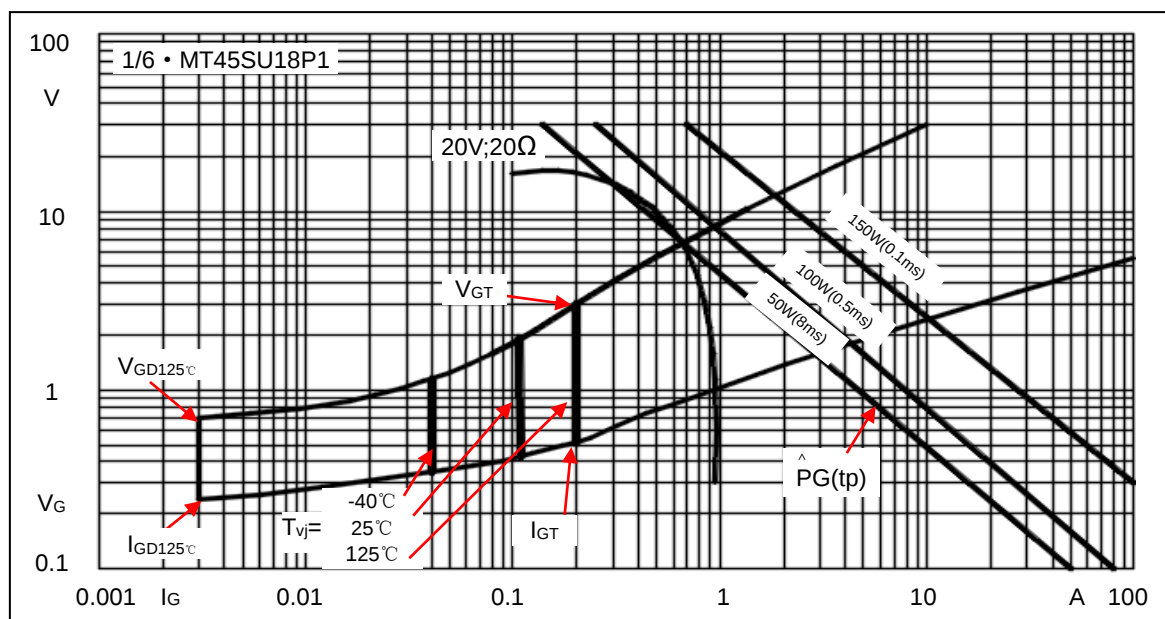
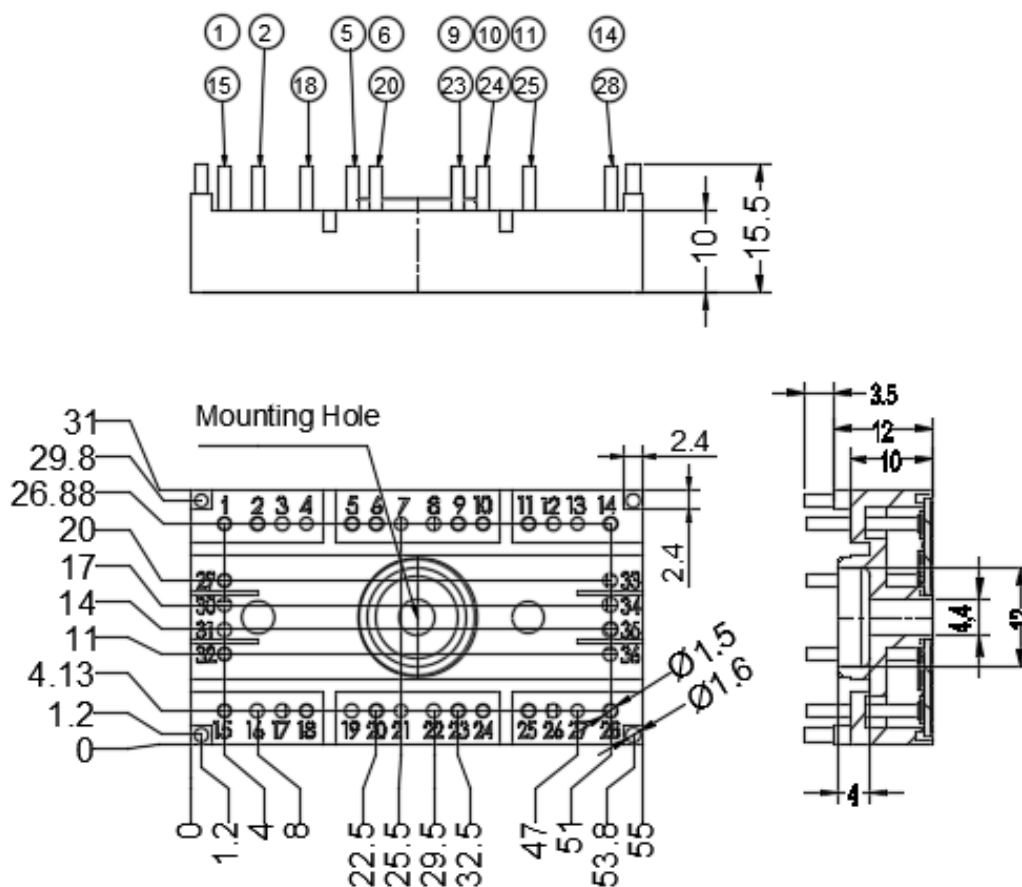


Fig5. Gate trigger Characteristics

Package Outline Information

CASE: P1



Dimensions in mm