MT200DT16L2

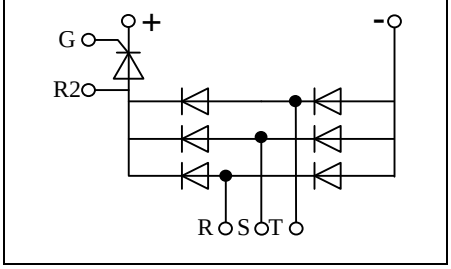


Three Phase Bridge + Thyristor

VRRM / VDRM 800 to 1600V
IFAV / ITAV 200Amp

Features
- Blocking voltage:800 to 1600V
- Three Phase Bridge and a Thyristor
- Low Forward Voltage

Circuit



Applications
- Inverter for AC or DC motor control
- Current stablilzed power supply
- Switching power supply

Module Type

TYPE	VRRM / VDRM	VRSM
MT200DT08L2 MT200DT12L2 MT200DT16L2	800V 1200V 1600V	900V 1300V 1700V

◆Diode

Maximum Ratings

Symbol	Item	Conditions	Values	Units
ID	Output Current(D.C.)	Tc=96℃ Three phase full wave	200	A
IFSM	Surge forward current	t=10mS Tvj =45℃	1900	A
i^2t	Circuit Fusing Consideration		18050	A^2s
Visol	Isolation Breakdown Voltage(R.M.S)	a.c.50HZ;r.m.s.;1min	3000	V
Tvj	Operating Junction Temperature		-40 to +150	℃
Tstg	Storage Temperature		-40 to +125	℃
Mt	Mounting Torque	To terminals(M4)	2±15%	Nm
Mt		To terminals(M6)	5±15%	Nm
Ms		To heatsink(M6)	5±15%	Nm
Weight		Module（Approximately）	320	g

Thermal Characteristics

Symbol	Item	Conditions	Values	Units
Rth(j-c)	Thermal Impedance, max.	Junction to Case(TOTAL)	0.12	℃/W
Rth(c-s)	Thermal Impedance, max.	Case to Heat sink	0.06	℃/W

Electrical Characteristics

Symbol	Item	Conditions	Values	Units
VFM	Forward Voltage Drop, max.	T=25℃ IF =200A	1.35	V
IRRM	Repetitive Peak Reverse Current, max.	Tvj =25℃ VRD=VRRM Tvj =150℃ VRD=VRRM	≤2 ≤10	mA mA

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◆Thyristor

Maximum Ratings

Symbol	Item	Conditions	Values	Units
I_{TAV}	Average On-State Current	Tc=93℃, Single Phase half wave 180° conduction	200	A
I_{TSM}	Surge On-State Current	TVJ=45℃ t=10ms (50Hz), sine VR=0	1900	A
i^2t	Circuit Fusing Consideration		18050	A^2s
Visol	Isolation Breakdown Voltage(R.M.S)	a.c.50HZ;r.m.s.;1 min	3000	V
Tvj	Operating Junction Temperature		-40 to +125	℃
Tstg	Storage Temperature		-40 to +125	℃
Mt	Mounting Torque	To terminals(M4)	2±15%	Nm
Mt		To terminals(M6)	5±15%	
Ms		To heatsink(M6)	5±15%	Nm
di/dt	Critical Rate of Rise of On-State Current	$T_{VJ}=T_{VJM}$, $V_D=1/2V_{DRM}$,I_G =100mA d_{iG}/d_t=0.1A/μs	200	A/μs
dv/dt	Critical Rate of Rise of Off-State Voltage, min.	$T_J=T_{VJM}$,$V_D=2/3V_{DRM}$,linear voltage rise	500	V/μs

Electrical and Thermal Characteristics

Symbol	Item	Conditions	Values			Units
			Min.	Typ.	Max.	
V_{TM}	Peak On-State Voltage, max.	T=25℃ I_T =200A			1.40	V
I_{RRM}/I_{DRM}	Repetitive Peak Reverse Current, max. / Repetitive Peak Off-State Current, max.	$T_{VJ}=T_{VJM}$,$V_R=V_{RRM}$,$V_D=V_{DRM}$			100	mA
V_{GT}	Gate Trigger Voltage, max.	T_{VJ} =25℃ , V_D =6V			3	V
I_{GT}	Gate Trigger Current, max.	T_{VJ} =25℃ , V_D =6V			150	mA
Rth(j-c)	Thermal Impedance, max.	Junction to Case			0.14	℃/W
Rth(c-s)	Thermal Impedance, max.	Case to Heatsink			0.06	℃/W

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Performance Curves

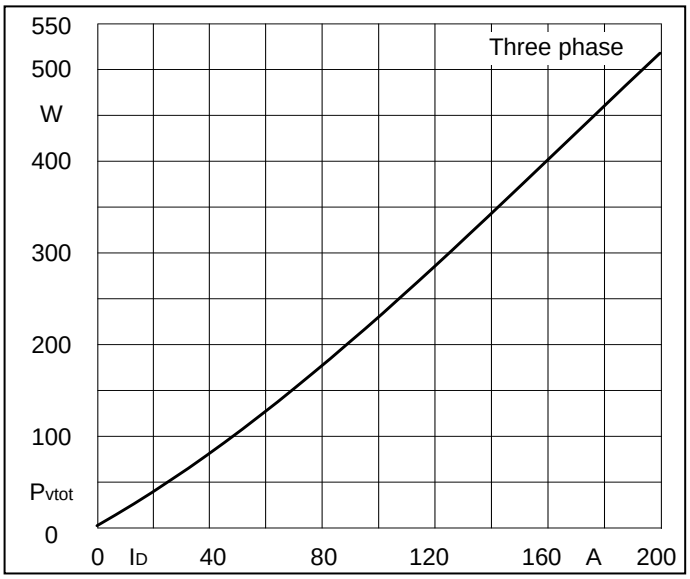

Fig1. Power dissipation

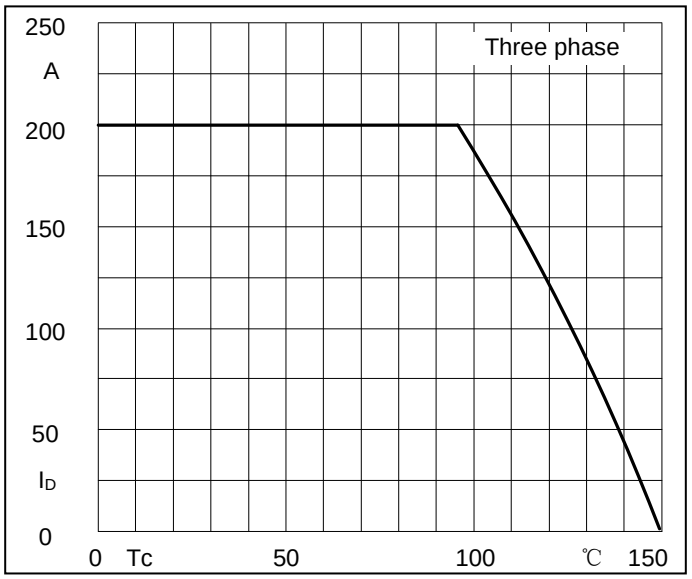

Fig2. Forward Current Derating Curve

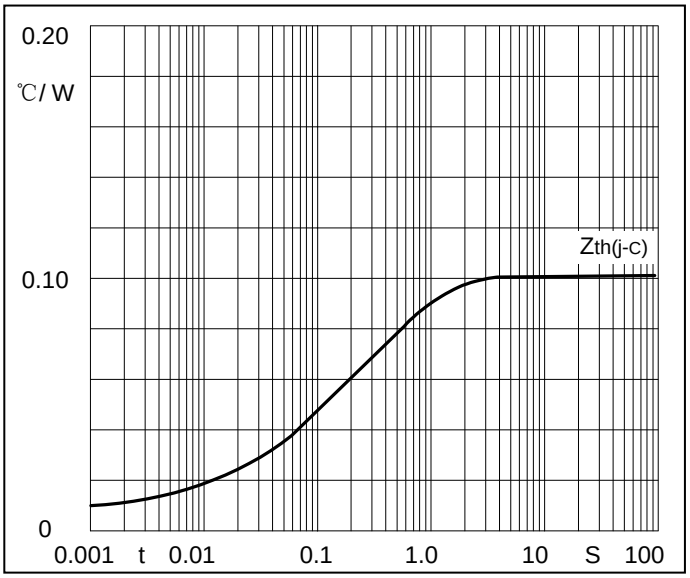

Fig3. Transient thermal impedance

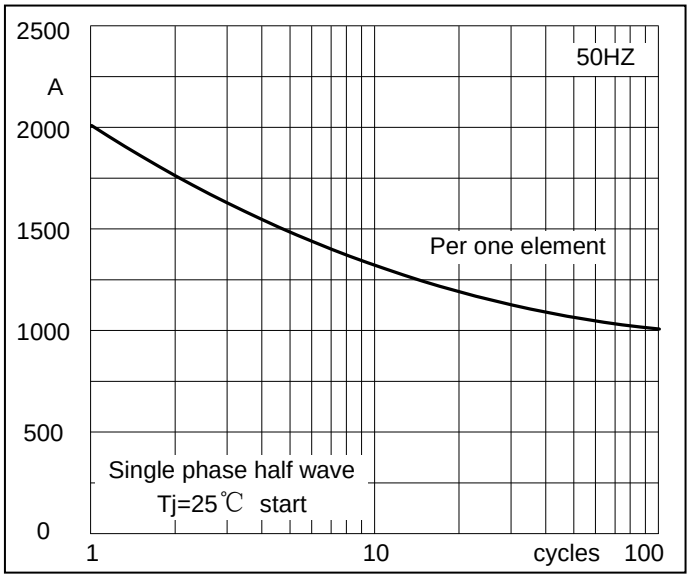

Fig4. Max Non-Repetitive Forward Surge Current

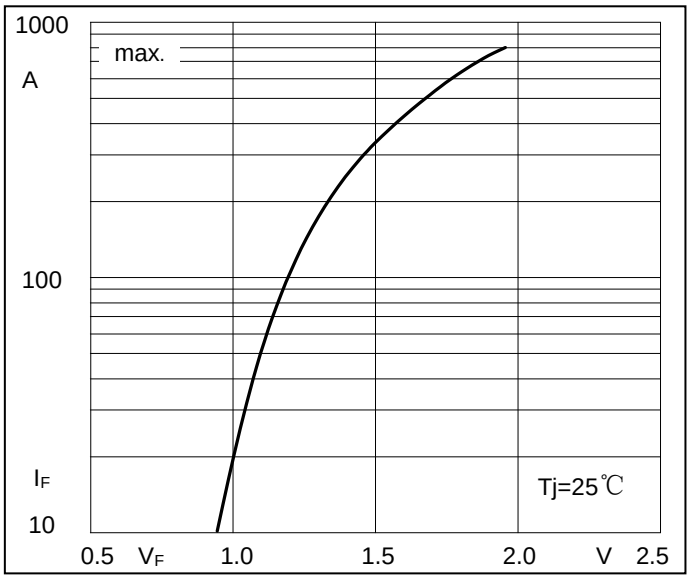

Fig5. Forward Characteristics

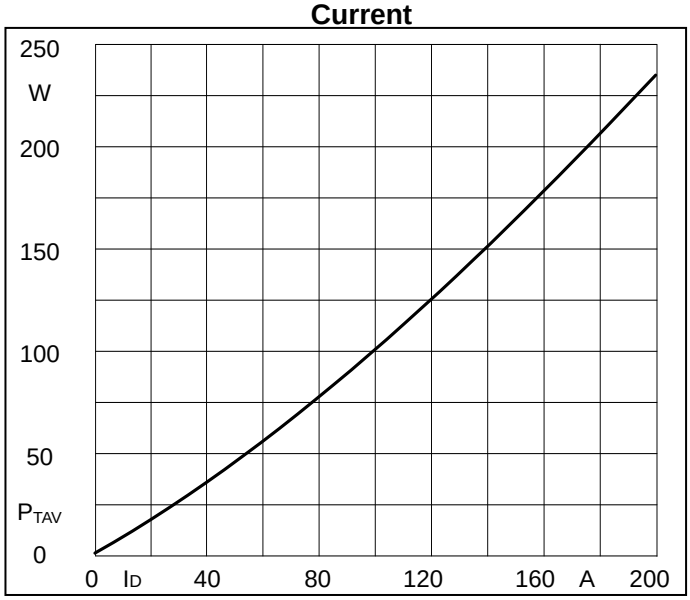

Fig6. SCR Power dissipation

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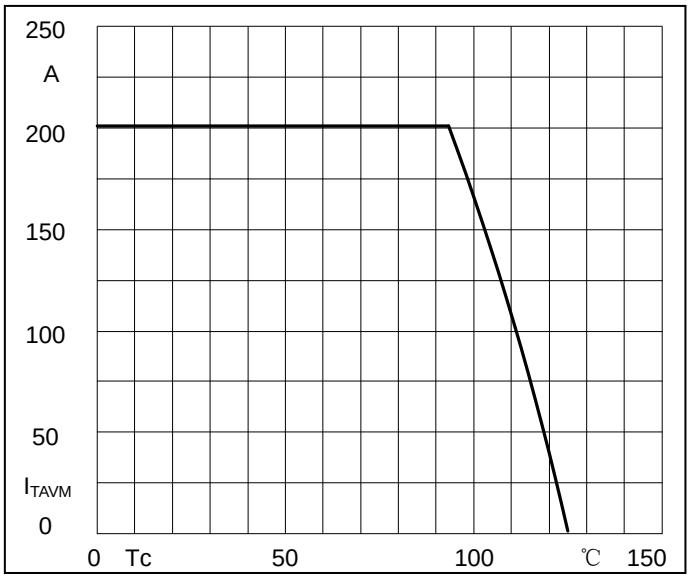

Fig7. SCR Forward Current Derating Curve

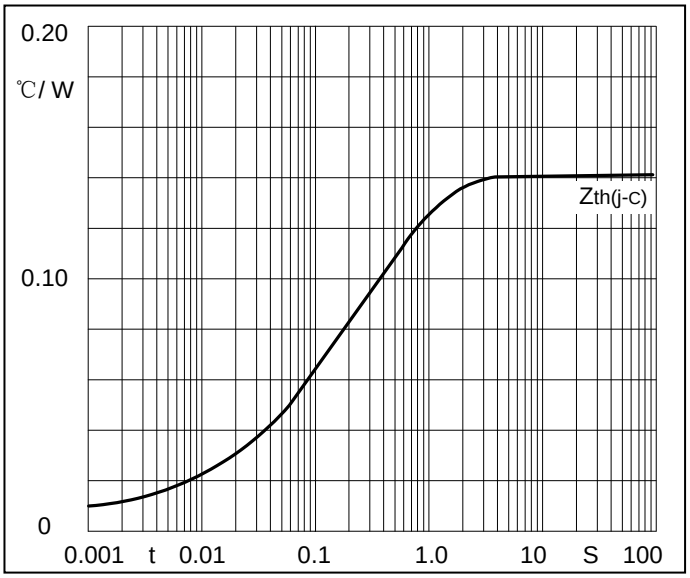

Fig8. SCR Transient thermal impedance

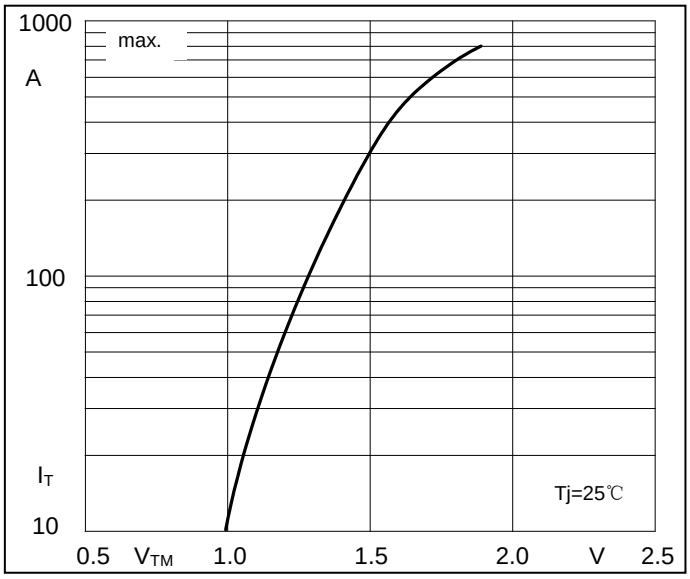

Fig9. SCR Forward Characteristics

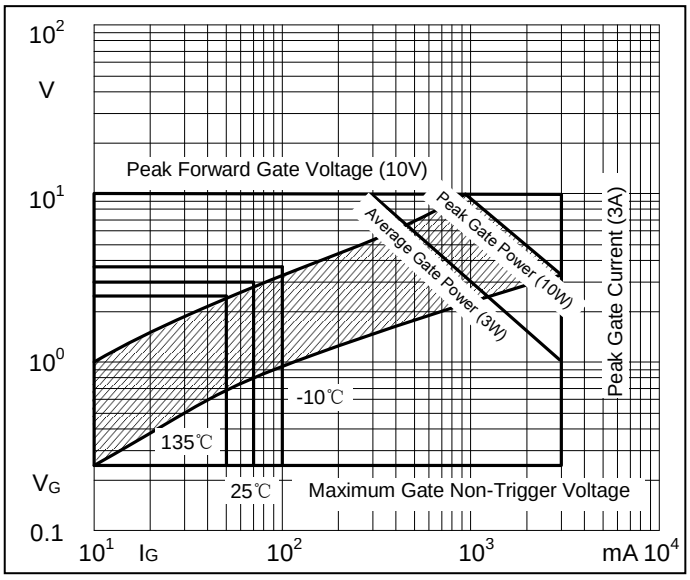

Fig10. Gate trigger Characteristics

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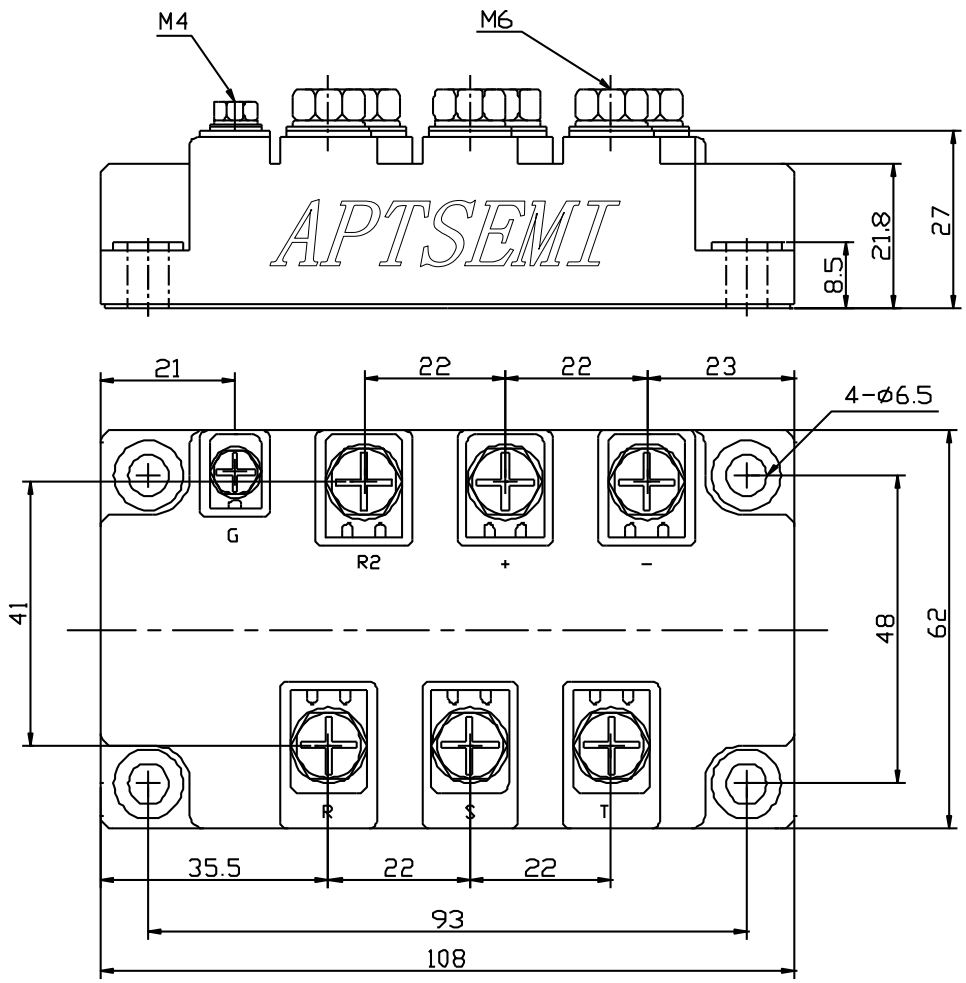
Package Outline Information

CASE: L2



Dimensions in mm

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