Features

- Lead Free Finish/RoHS Compliant (NOTE 1)("P" Suffix designates RoHS Compliant. See ordering information)
- Blocking Voltage:800 to 1800V
- Three Phase Bridge and a Thyristor
- Isolated Module Package

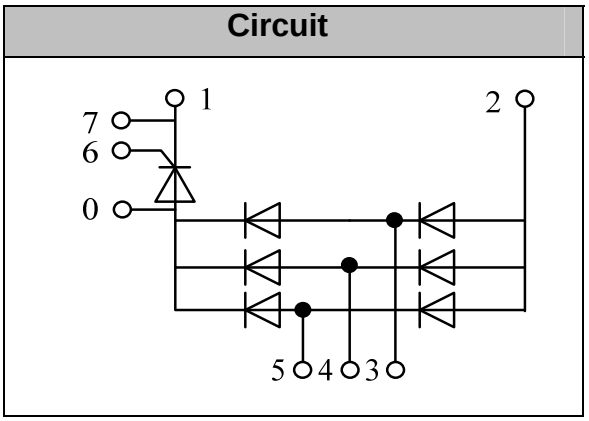
Applications

- Inverter for AC or DC motor control
- Current stabilized power supply
- Switching power supply
- UL recognized applied for file no.E360040

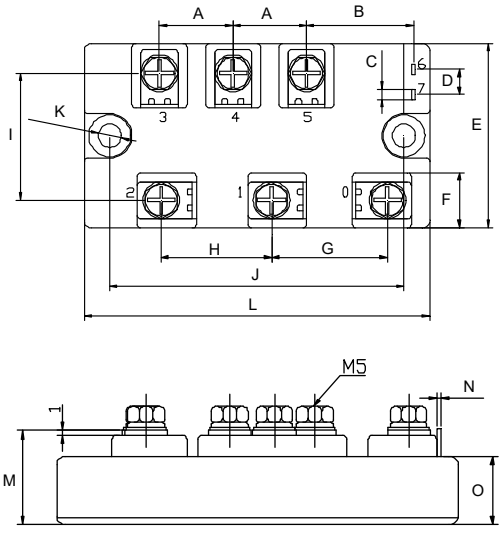
100 Amp Three Phase Bridge + Thyristor 800~1800 Volts

MCC Part Number	V_{RRM}/V_{DRM}	V_{RSM}
MT100DT08L1	800V	900V
MT100DT12L1	1200V	1300V
MT100DT16L1	1600V	1700V
MT100DT18L1	1800V	1900V

Circuit



L1



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.776	0.799	19.50	20.50	
B	1.169	1.193	28.50	29.50	
C	0.098	0.122	2.30	3.30	
D	0.264	0.287	6.50	7.50	
E	1.960	1.980	49.50	50.50	
F	0.578	0.602	14.50	15.50	
G	1.248	1.272	31.50	32.50	
H	1.169	1.193	29.50	30.50	
I	1.327	1.350	33.50	34.50	
J	3.138	3.161	79.50	80.50	
K	0.256		6.50		Ø
L	3.689	3.713	93.50	94.50	
M	0.854	0.878	21.50	22.50	
N	0.020	0.043	0.30	1.30	
O	0.610	0.634	15.30	16.30	

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◆Diode

Maximum Ratings

Symbol	Item	Conditions	Values	Units
I_D	Output Current(D.C.)	Tc=100℃ Three phase full wave	100	A
I_{FSM}	Surge forward current	t=10mS Tvj =45℃	1200	A
i^2t	Circuit Fusing Consideration		7200	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(M5)	3±15%	Nm
Ms		To heatsink(M5)	3±15%	Nm
Weight		Module（Approximately）	210	g

Thermal Characteristics

Symbol	Item	Conditions	Values	Units
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to Case(TOTAL)	0.18	℃/W
Rth(c-s)	Thermal Impedance, max.	Case to Heatsink	0.10	℃/W

Electrical Characteristics

Symbol	Item	Conditions	Values	Units
V_{FM}	Forward Voltage Drop, max.	T=25℃ I_F =100A	1.35	V
I_{RRM}	Repetitive Peak Reverse Current, max.	Tvj =25℃ V_{RD}=V_{RRM} Tvj =150℃ V_{RD}=V_{RRM}	≤0.5 ≤6	mA mA

◆Thyristor

Micro Commercial Components ®

Maximum Ratings

Symbol	Item	Conditions	Values	Units
I_{TAV}	Average On-State Current	Tc=92℃, Single Phase half wave 180° conduction	100	A
I_{TSM}	Surge On-State Current	T_{VJ}=45℃ t=10ms (50Hz), sine V_R=0	1200	A
i^2t	Circuit Fusing Consideration		7200	A^2s
Visol	Isolation Breakdown Voltage(R.M.S)	a.c.50H_Z;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(M5)	3±15%	Nm
Ms		To heatsink(M5)	3±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	150	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

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Electrical and Thermal Characteristics

Symbol	Item	Conditions	Values			Units
V_{TM}	Peak On-State Voltage, max.	T=25℃ I_T=100A			1.25	V
I_{RRM}/I_{DRM}	Repetitive Peak Reverse Current, max. / Repetitive Peak Off-State Current, max.	$T_{VJ}=T_{VJM}$,$V_R=V_{RRM}$,$V_D=V_{DRM}$			20	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			0.26	℃/W
Rth(c-s)	Thermal Impedance, max.	Case to Heatsink			0.10	℃/W

Performance Curves

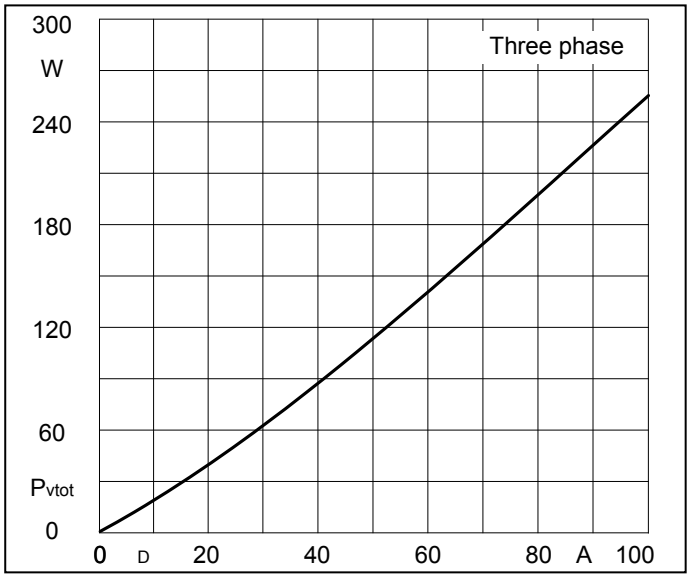

Fig1. Power dissipation

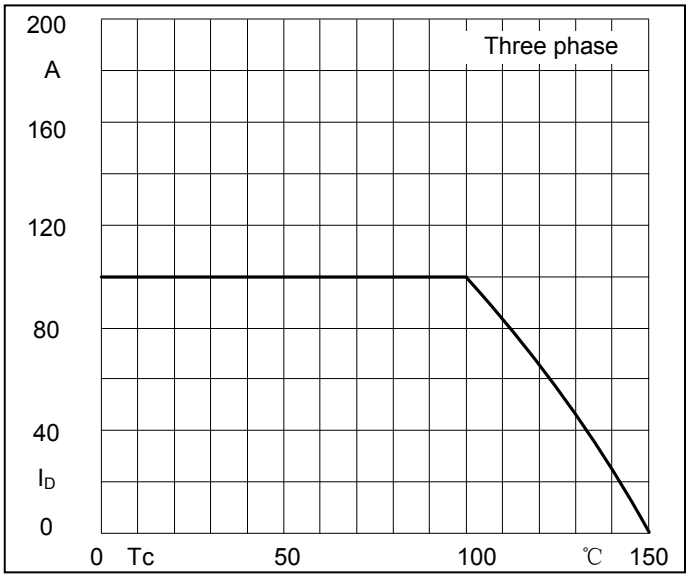

Fig2. Forward Current Derating Curve

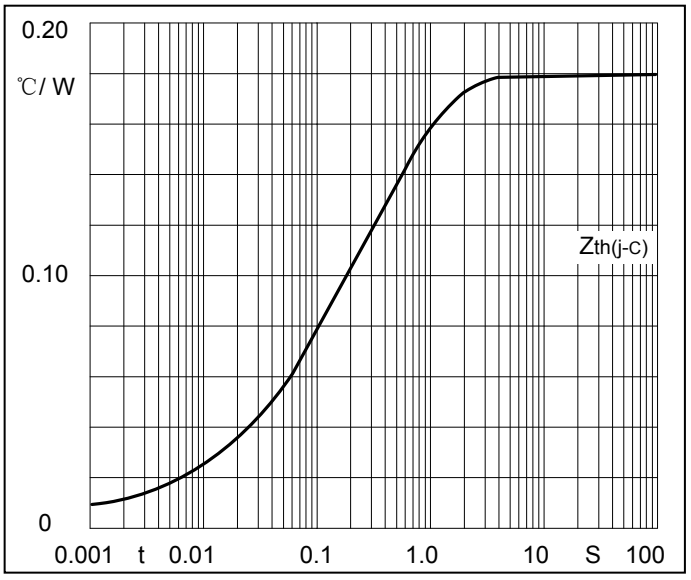

Fig3. Transient thermal impedance

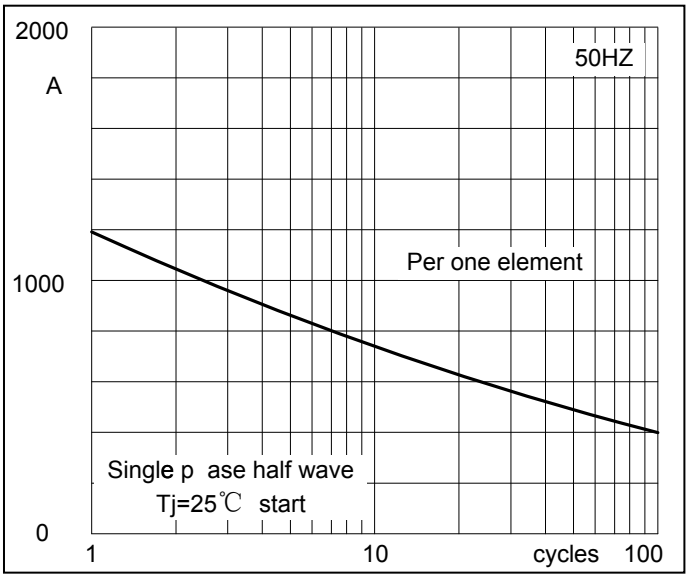

Fig4. Max Non-Repetitive Forward Surge Current

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Performance Curves

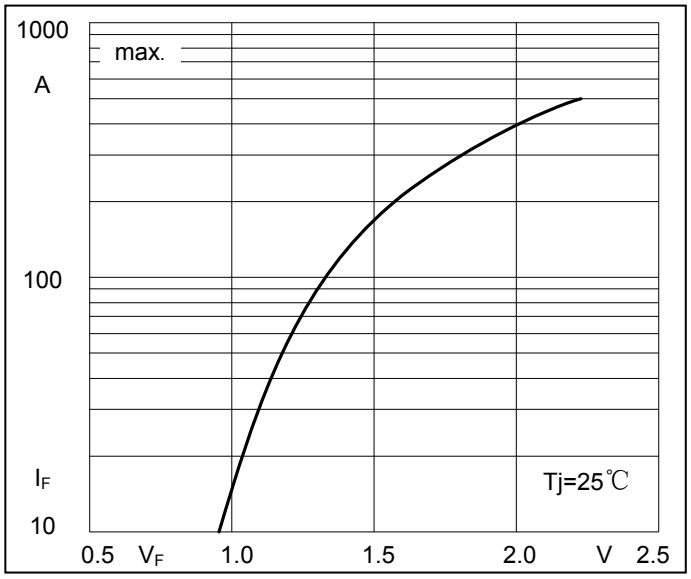

Fig5. Forward Characteristics

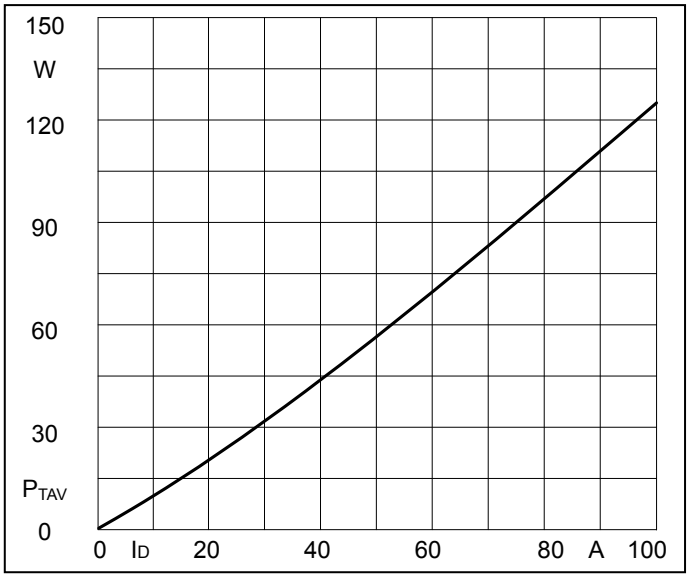

Fig6. SCR Power dissipation

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Ordering Information

Device	Packing
Part Number-BP	Bulk: 6PCS/BOX ;60PCS/CTN

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