

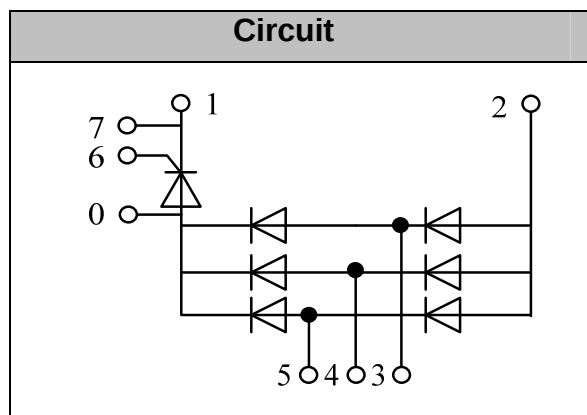
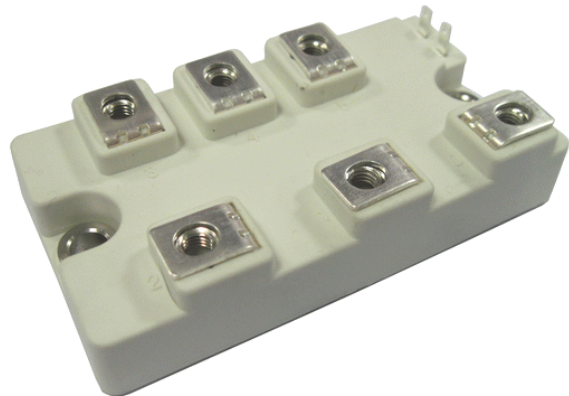
Features

- 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

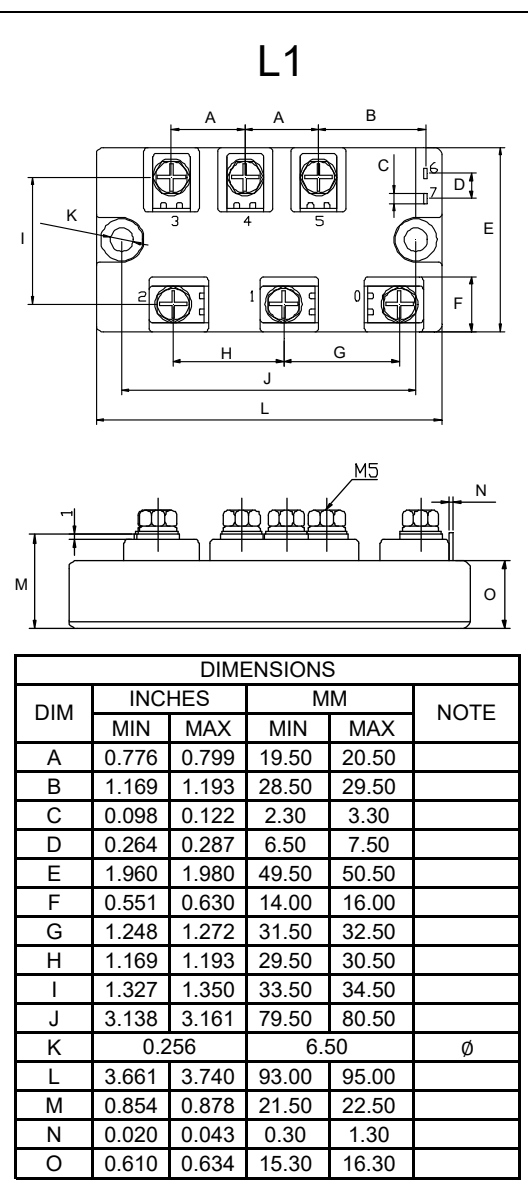
Applications

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

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



**100 Amp
Three Phase
Bridge + Thyristor
800~1800 Volts**



◆Diode

Maximum Ratings

Symbol	Item	Conditions	Values	Units
I_D	Output Current(D.C.)	$T_c=100^{\circ}\text{C}$ Three phase full wave	100	A
I_{FSM}	Surge forward current	$t=10\text{ms}$ $T_{vj}=45^{\circ}\text{C}$	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
T_{vj}	Operating Junction Temperature		-40 to +150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature		-40 to +125	$^{\circ}\text{C}$
M_t	Mounting Torque	To terminals(M5)	$3\pm 15\%$	Nm
M_s		To heatsink(M5)	$3\pm 15\%$	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	$^{\circ}\text{C/W}$
$R_{th(c-s)}$	Thermal Impedance, max.	Case to Heatsink	0.10	$^{\circ}\text{C/W}$

Electrical Characteristics

Symbol	Item	Conditions	Values	Units
V_{FM}	Forward Voltage Drop, max.	$T=25^{\circ}\text{C}$ $I_F=100\text{A}$	1.35	V
I_{RRM}	Repetitive Peak Reverse Current, max.	$T_{vj}=25^{\circ}\text{C}$ $V_{RD}=V_{RRM}$ $T_{vj}=150^{\circ}\text{C}$ $V_{RD}=V_{RRM}$	≤ 0.5 ≤ 6	mA mA

◆Thyristor

Micro Commercial Components

Maximum Ratings

Symbol	Item	Conditions	Values	Units
I_{TAV}	Average On-State Current	$T_c=92^{\circ}\text{C}$, Single Phase half wave 180° conduction	100	A
I_{TSM}	Surge On-State Current	$T_{VJ}=45^{\circ}\text{C}$ $t=10\text{ms}$ (50Hz), sine $V_R=0$	1200	A
i^2t	Circuit Fusing Consideration		7200	A^2s
Visol	Isolation Breakdown Voltage(R.M.S)	a.c.50Hz;r.m.s.;1 min	3000	V
T_{vj}	Operating Junction Temperature		-40 to +125	$^{\circ}\text{C}$
T_{stg}	Storage Temperature		-40 to +125	$^{\circ}\text{C}$
M_t	Mounting Torque	To terminals(M5)	$3\pm 15\%$	Nm
M_s		To heatsink(M5)	$3\pm 15\%$	Nm
di/dt	Critical Rate of Rise of On-State Current	$T_{VJ}=T_{VJM}$, $V_D=1/2V_{DRM}$, $I_G=100\text{mA}$ $d_iG/d_t=0.1\text{A}/\mu\text{s}$	150	$\text{A}/\mu\text{s}$
dv/dt	Critical Rate of Rise of Off-State Voltage, min.	$T_J=T_{VJM}$, $V_D=2/3V_{DRM}$, linear voltage rise	500	$\text{V}/\mu\text{s}$

Electrical and Thermal Characteristics

Symbol	Item	Conditions	Values			Units
V_{TM}	Peak On-State Voltage, max.	$T=25^{\circ}\text{C}$ $I_T=100\text{A}$			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.	$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$			3	V
I_{GT}	Gate Trigger Current, max.	$T_{VJ}=25^{\circ}\text{C}$, $V_D=6\text{V}$			150	mA
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to Case			0.26	$^{\circ}\text{C}/\text{W}$
$R_{th(c-s)}$	Thermal Impedance, max.	Case to Heatsink			0.10	$^{\circ}\text{C}/\text{W}$

Performance Curves

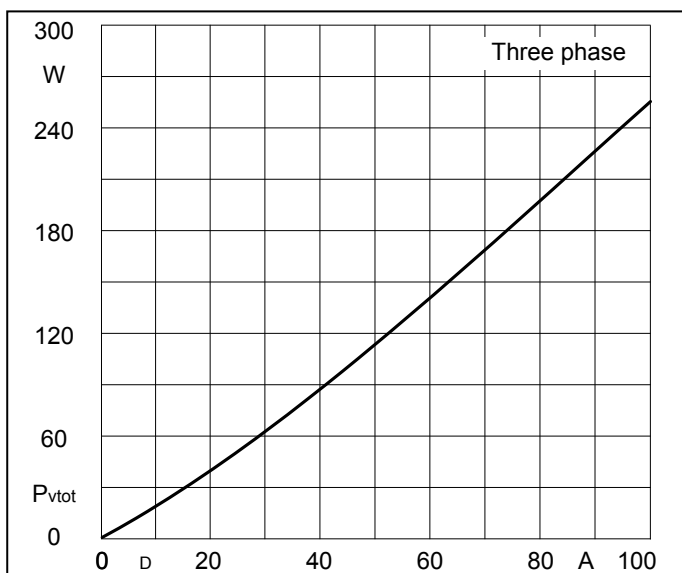


Fig1. Power dissipation

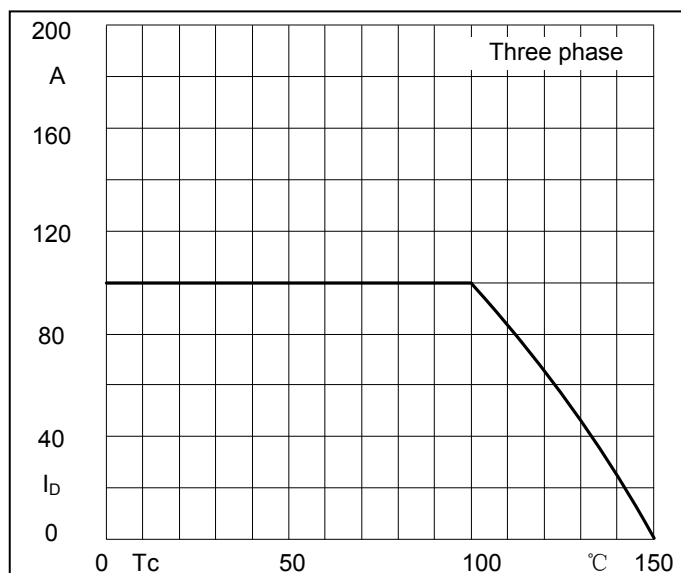


Fig2. Forward Current Derating Curve

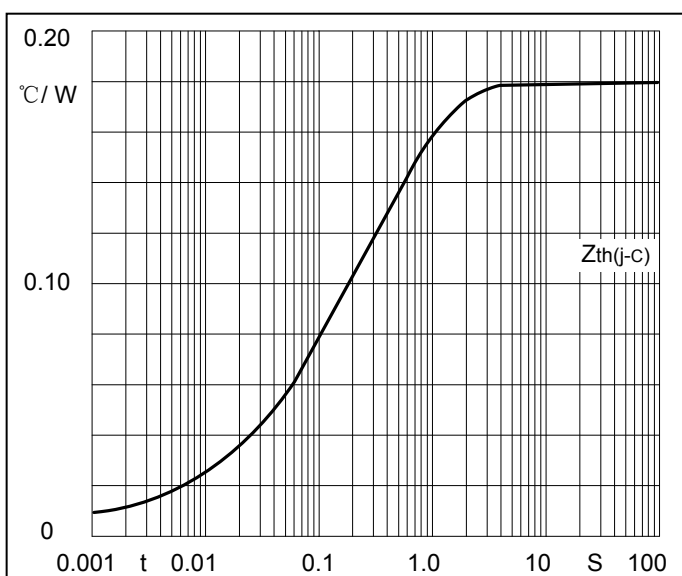


Fig3. Transient thermal impedance

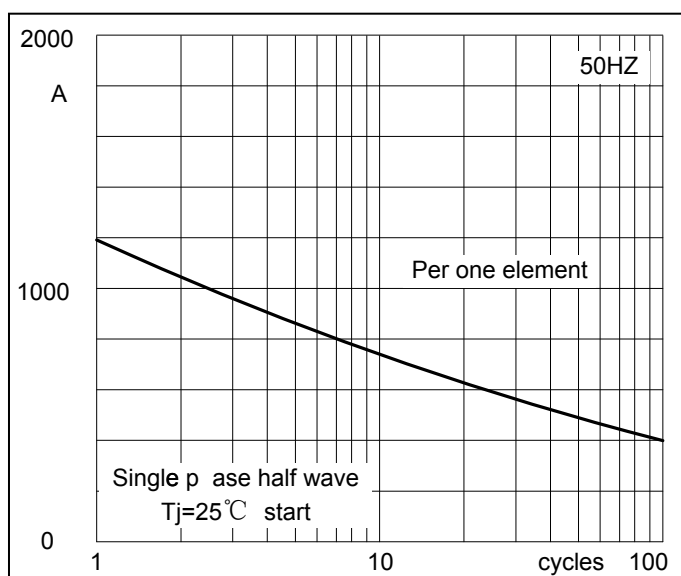


Fig4. Max Non-Repetitive Forward Surge Current

Performance Curves

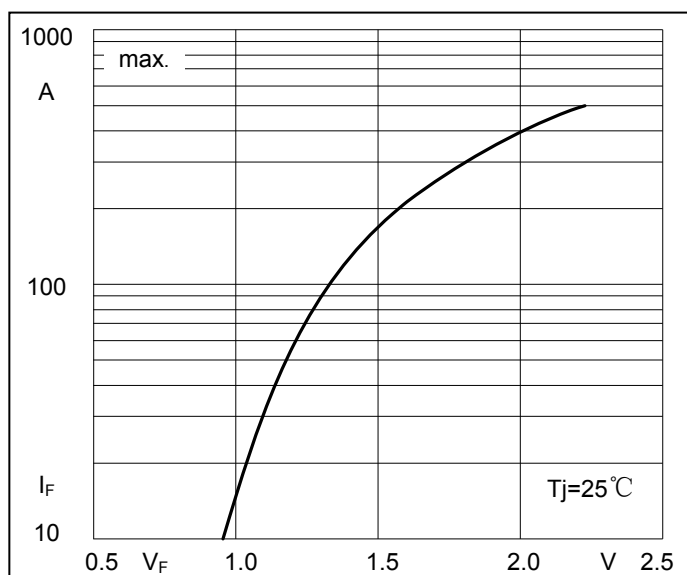


Fig5. Forward Characteristics

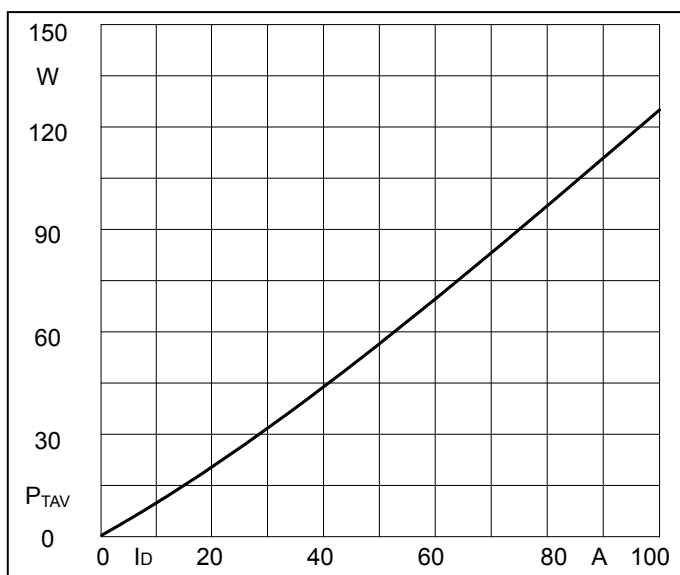


Fig6. SCR Power dissipation

Ordering Information

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

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