



Micro Commercial Components



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 130 W Cochran St, Unit B
 Simi Valley, CA 93065
 USA
 Tel:818-701-4933

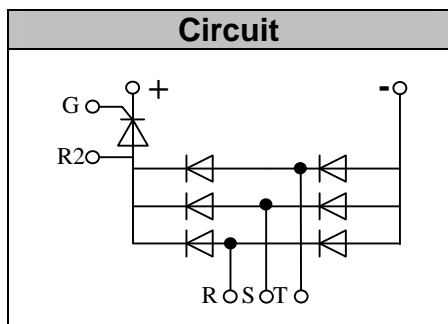
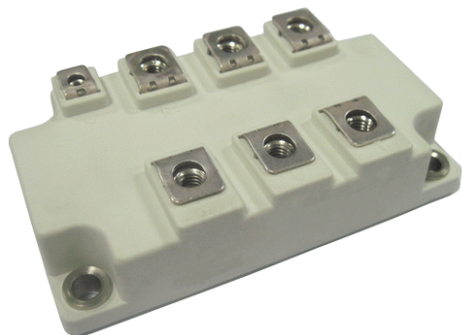
MT150DT08L2
MT150DT12L2
MT150DT16L2
MT150DT18L2

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
- Low Forward Voltage

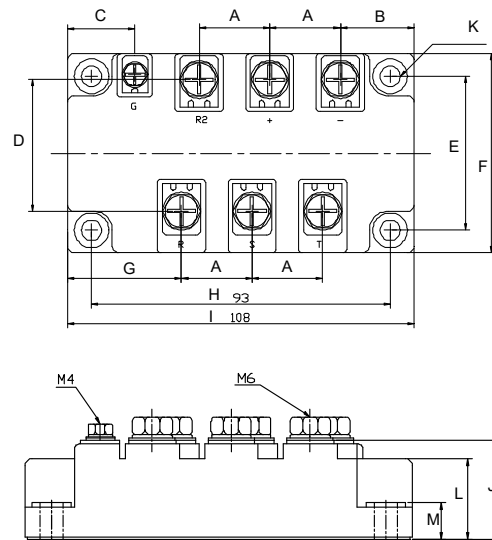
Applications

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



150 Amp
Three Phase
Bridge + Thyristor
800~1800 Volts

L2



DIMENSIONS

| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|--------|--------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.854 | 0.878 | 21.50 | 22.50 | |
| B | 0.894 | 0.917 | 22.50 | 23.50 | |
| C | 0.815 | 0.839 | 20.50 | 21.50 | |
| D | 1.600 | 1.630 | 40.50 | 41.50 | |
| E | 1.880 | 1.900 | 47.50 | 48.50 | |
| F | 2.430 | 2.450 | 61.50 | 62.50 | |
| G | 1.390 | 1.410 | 35.00 | 36.00 | |
| H | 3.650 | 3.670 | 92.50 | 93.50 | |
| I | 4.240 | 4.260 | 107.50 | 108.50 | |
| J | 1.050 | 1.080 | 26.50 | 27.50 | |
| K | 0.256 | | 6.50 | | ∅ |
| L | 0.846 | 0.870 | 21.30 | 22.30 | |
| M | 0.323 | 0.346 | 8.00 | 9.00 | |

Module Type

| TYPE | VRRM/ VDRM | VRSM |
|-------------|------------|-------|
| MT150DT08L2 | 800V | 900V |
| MT150DT12L2 | 1200V | 1300V |
| MT150DT16L2 | 1600V | 1700V |
| MT150DT18L2 | 1800V | 1900V |

◆Diode

Maximum Ratings

| Symbol | Item | Conditions | Values | Units |
|------------------|------------------------------------|-------------------------------|-------------|------------------|
| ID | Output Current(D.C.) | Tc=93°C Three phase full wave | 150 | A |
| IFSM | Surge forward current | t=10mS Tvj =45°C | 1500 | A |
| i ² t | Circuit Fusing Consideration | | 11250 | A ² s |
| Visol | Isolation Breakdown Voltage(R.M.S) | a.c.50HZ;r.m.s.;1min | 3000 | V |
| Tvj | Operating Junction Temperature | | -40 to +150 | °C |
| Tstg | Storage Temperature | | -40 to +125 | °C |
| 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) | 0.14 | °C/W |
| Rth(c-s) | Thermal Impedance, max. | Case to Heat sink | 0.07 | °C/W |

Electrical Characteristics

| Symbol | Item | Conditions | Values | Units |
|------------------|---------------------------------------|---|-----------|----------|
| VFM | Forward Voltage Drop, max. | T=25°C IF =150A | 1.35 | V |
| I _{RRM} | Repetitive Peak Reverse Current, max. | Tvj =25°C VRD=VRRM Tvj =150°C VRD=VRRM | ≤2 ≤10 | mA mA |

◆Thyristor
Maximum Ratings

| Symbol | Item | Conditions | Values | Units |
|-----------|--|---|-------------|------------------------|
| I_{TAV} | Average On-State Current | $T_c=93^{\circ}\text{C}$, Single Phase half wave 180° conduction | 150 | A |
| I_{TSM} | Surge On-State Current | $T_{VJ}=45^{\circ}\text{C}$ $t=10\text{ms}$ (50Hz), sine $VR=0$ | 1500 | A |
| i^2t | Circuit Fusing Consideration | | 11250 | 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(M4) | $2\pm 15\%$ | Nm |
| M_t | | To terminals(M6) | $5\pm 15\%$ | Nm |
| M_s | | To heatsink(M6) | $5\pm 15\%$ | Nm |
| di/dt | Critical Rate of Rise of On-State Current | $T_{VJ}=T_{VJM}$, $V_D=1/2V_{DRM}$, $I_G=100\text{mA}$ $dI_G/dt=0.1\text{A}/\mu\text{s}$ | 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. | $T=25^{\circ}\text{C}$ $I_T=150\text{A}$ | | | 1.35 | V |
| I_{RRM}/I_{DRM} | Repetitive Peak Reverse Current, max. / Repetitive Peak Off-State Current, max. | $T_{VJ}=T_{VJM}$, $V_R=V_{RRM}$, $V_D=V_{DRM}$ | | | 40 | 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 | | | 0.16 | $^{\circ}\text{C}/\text{W}$ |
| $R_{th(c-s)}$ | Thermal Impedance, max. | Case to Heatsink | | | 0.07 | $^{\circ}\text{C}/\text{W}$ |

Performance Curves

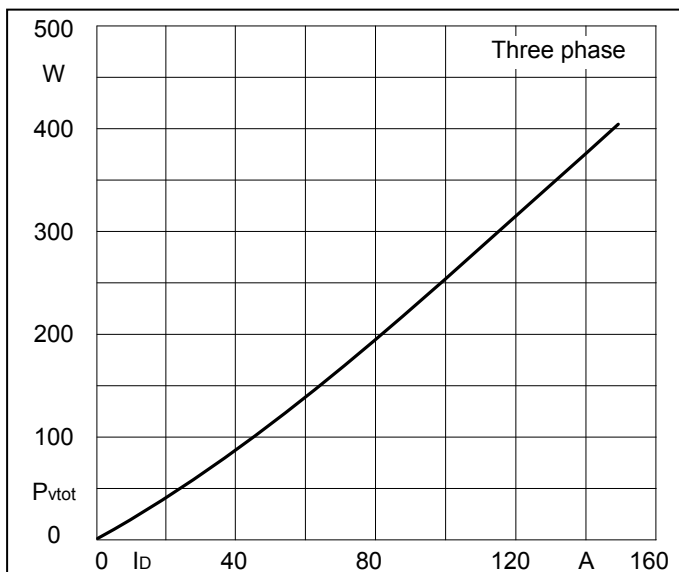


Fig1. Power dissipation

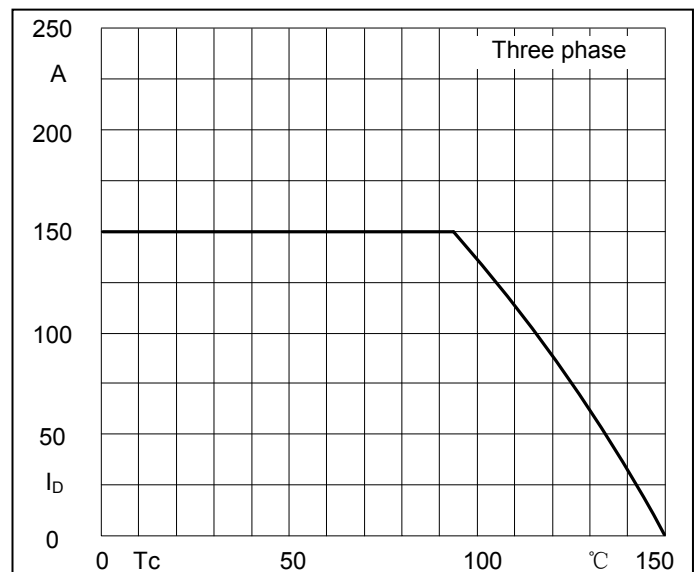


Fig2. Forward Current Derating Curve

Performance Curves

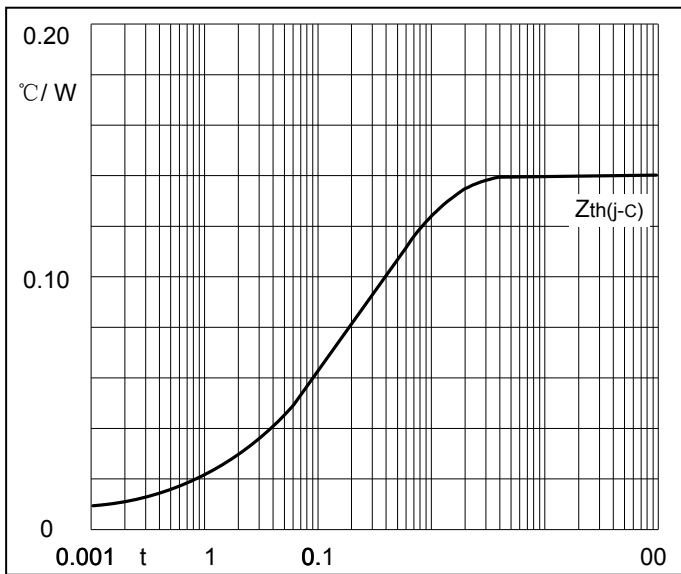


Fig3. Transient thermal impedance

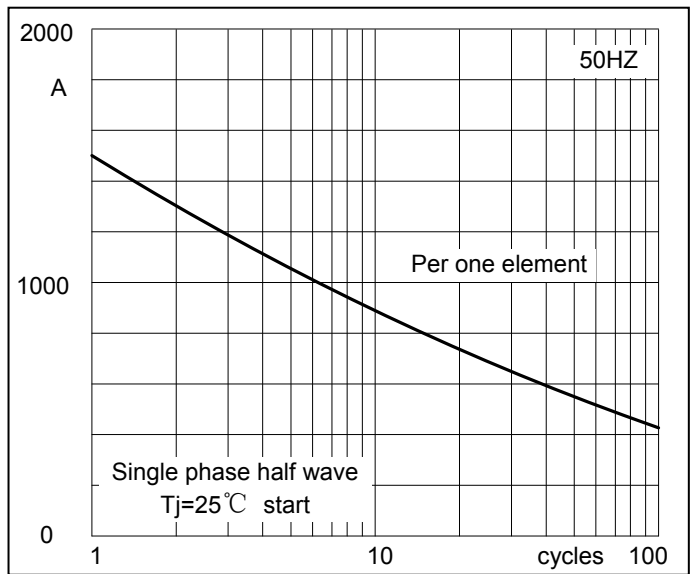


Fig4. Max Non-Repetitive Forward Surge Current

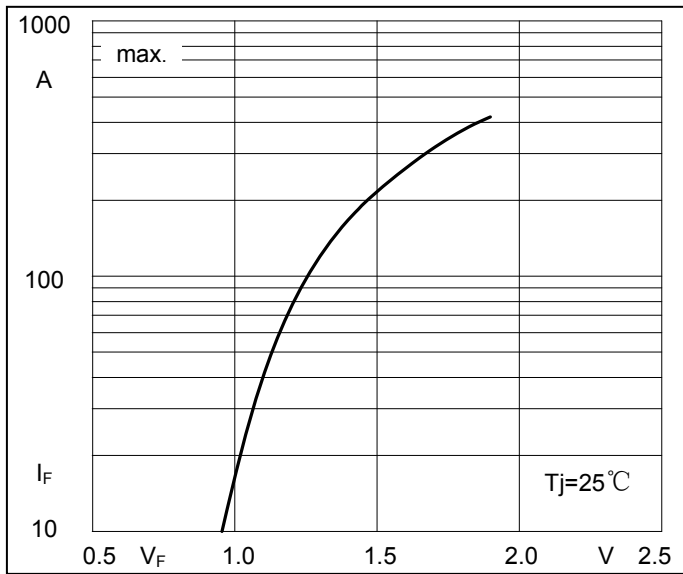


Fig5. Forward Characteristics

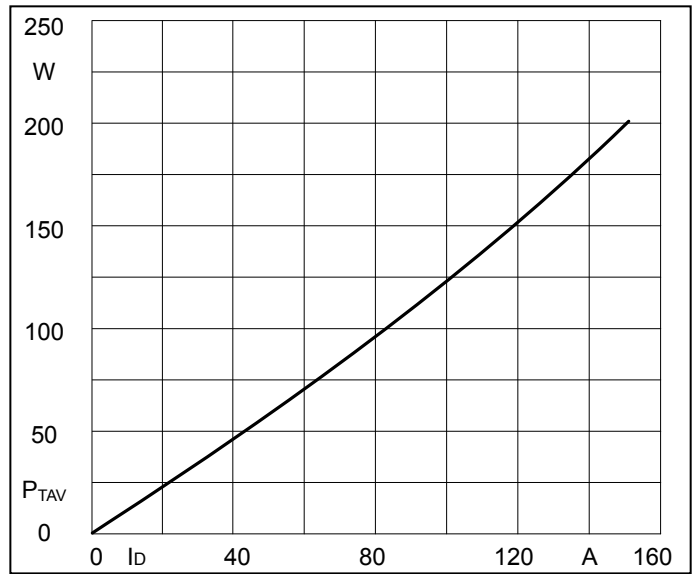


Fig6. SCR Power dissipation

Performance Curves

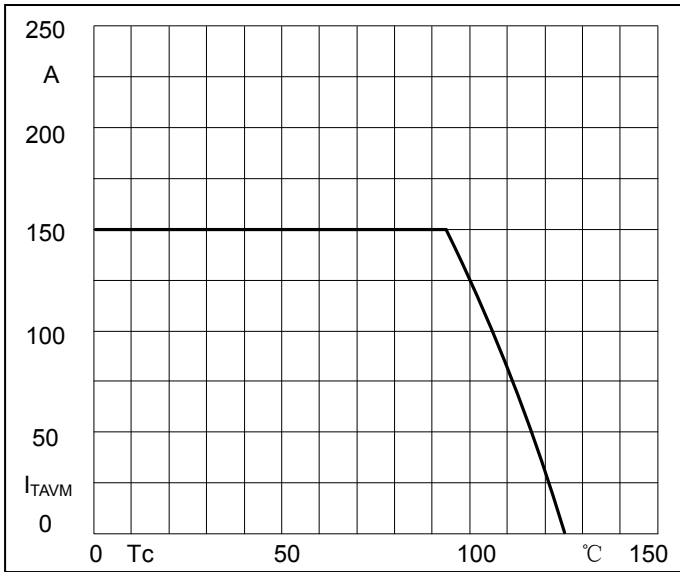


Fig7. SCR Forward Current Derating Curve

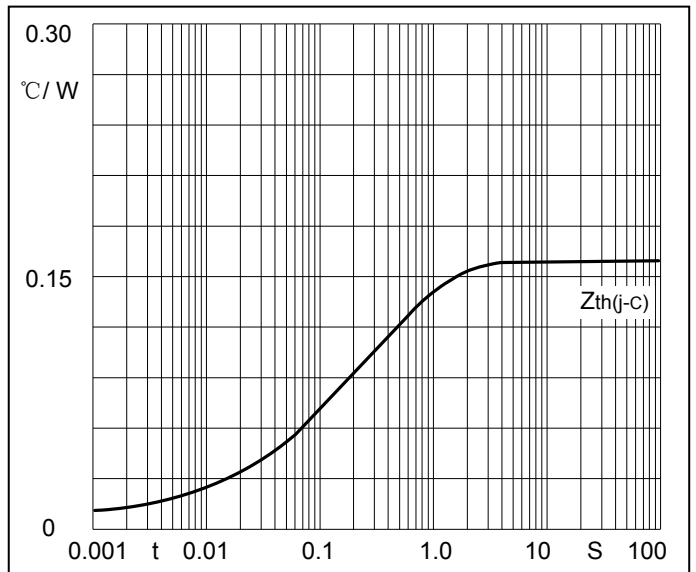


Fig8. SCR Transient thermal impedance

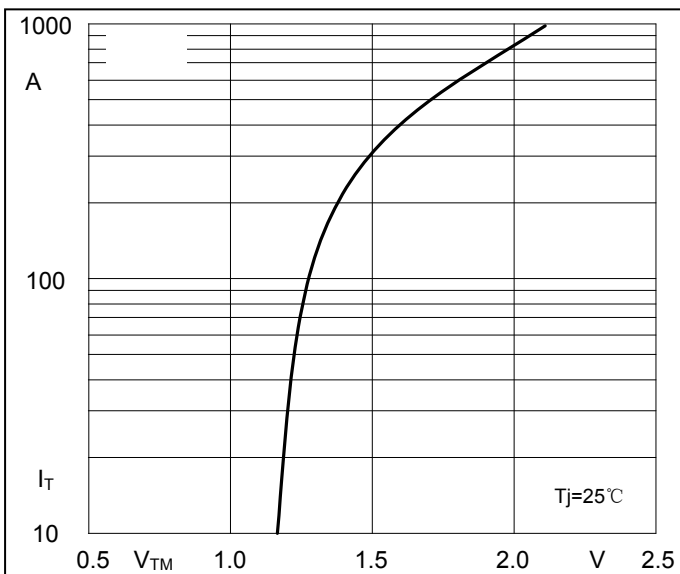


Fig9. SCR Forward Characteristics

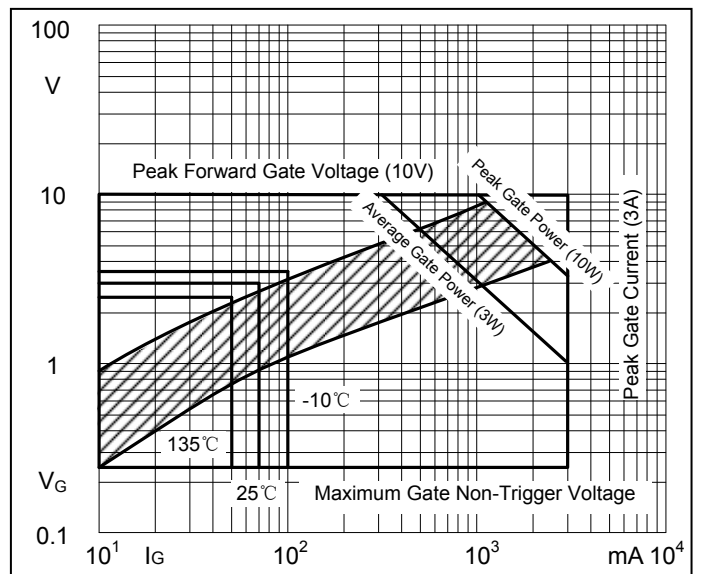


Fig10. Gate trigger Characteristics

Ordering Information :

| Device | Packing |
|----------------|---------------------------|
| Part Number-BP | Bulk: 4PCS/BOX ;40PCS/CTN |

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