

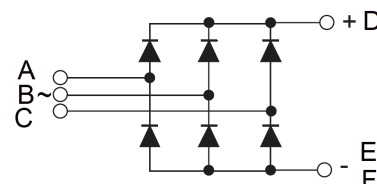
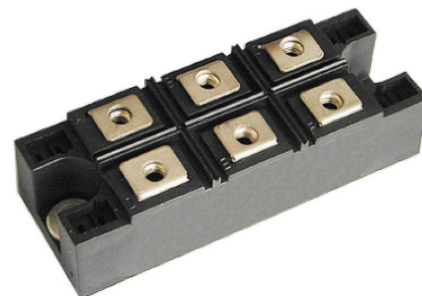
## Feature

- Package with screw terminals
- Isolation voltage 4000V~
- Blocking voltage up to 1800V
- Low forward voltage drop

## Application

- Supplies for DC power equipment
- Input rectifier for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

## Maximum value



| Symbol | Parameter                           | Rating   |           |           |           |           | Unit |
|--------|-------------------------------------|----------|-----------|-----------|-----------|-----------|------|
|        |                                     | 110MT80K | 110MT120K | 110MT140K | 110MT160K | 110MT180K |      |
| VRRM   | Reverse peak repetitive voltage     | 800      | 1200      | 1400      | 1600      | 1800      | V    |
| VRSM   | Reverse peak non-repetitive voltage | 900      | 1300      | 1500      | 1700      | 1900      | V    |

| Symbol     | Test Conditions                                | Characteristic Values | Unit             |
|------------|------------------------------------------------|-----------------------|------------------|
| $I_R$      | $V_R = V_{RRM}; T_{VJ} = 25^\circ\text{C}$     | $\leq 0.3$            | mA               |
|            | $V_R = V_{RRM}; T_{VJ} = T_{VJM}$              | $\leq 5$              |                  |
| $V_F$      | $I_F = 110\text{A}; T_{VJ} = 25^\circ\text{C}$ | $\leq 1.40$           | V                |
| $V_{FO}$   | For power-loss calculations only               | 0.81                  | V                |
| $r_F$      | $T_{VJ} = T_{VJM}$                             | 4.3                   | mΩ               |
| $R_{thJC}$ | per diode                                      | 1.07                  | K/W              |
|            | per module                                     | 0.178                 |                  |
| $R_{thJK}$ | per diode                                      | 1.01                  | K/W              |
|            | per module                                     | 0.168                 |                  |
| ds         | Creeping distance on surface                   | 10                    | mm               |
| dA         | Creepage distance in air                       | 9.4                   | mm               |
| a          | Max. allowable acceleration                    | 50                    | m/s <sup>2</sup> |

| Symbol     | Test Conditions                                                | Maximum Ratings | Unit                 |
|------------|----------------------------------------------------------------|-----------------|----------------------|
| $I_{dav}$  | $T_C=100^{\circ}\text{C}$ , module                             | 110             | A                    |
| $I_{dav}$  | $T_A=45^{\circ}\text{C}$ ( $R_{thCA}=0.6\text{K/W}$ ), module  | 150             |                      |
| $I_{FSM}$  | $T_{VJ}=45^{\circ}\text{C}$ $t=10\text{ms}$ (50Hz), sine       | 950             | A                    |
|            | $V_R=0$ $t=8.3\text{ms}$ (60Hz), sine                          | 1000            |                      |
|            | $T_{VJ}=T_{VJM}$ $t=10\text{ms}$ (50Hz), sine                  | 850             |                      |
|            | $V_R=0$ $t=8.3\text{ms}$ (60Hz), sine                          | 900             |                      |
| $P_{RSM}$  | Per diode chip, $T_{VJ}=25^{\circ}\text{C}$ , $t_p=10\text{s}$ | 5.90            | KW                   |
| $I^2t$     | $T_{VJ}=45^{\circ}\text{C}$ $t=10\text{ms}$ (50Hz), sine       | 4500            | $\text{A}^2\text{s}$ |
|            | $V_R=0$ $t=8.3\text{ms}$ (60Hz), sine                          | 4100            |                      |
|            | $T_{VJ}=T_{VJM}$ $t=10\text{ms}$ (50Hz), sine                  | 4050            |                      |
|            | $V_R=0$ $t=8.3\text{ms}$ (60Hz), sine                          | 3700            |                      |
| $T_{VJ}$   |                                                                | $-40..+150$     | $^{\circ}\text{C}$   |
| $T_{VJM}$  |                                                                | 150             |                      |
| $T_{stg}$  |                                                                | $-40..+150$     |                      |
| $V_{ISOL}$ | 50/60Hz, RMS $t=1\text{min}$                                   | 2500            | $\text{V}\sim$       |
|            | $I_{ISOL}\leq 1\text{mA}$ $t=1\text{s}$                        | 4000            |                      |
| $M_d$      | Mounting torque (M5)                                           | $5 \pm 15\%$    | Nm                   |
|            | Terminal connection torque (M5)                                | $5 \pm 15\%$    |                      |
| Weight     | typ.                                                           | 176             | g                    |

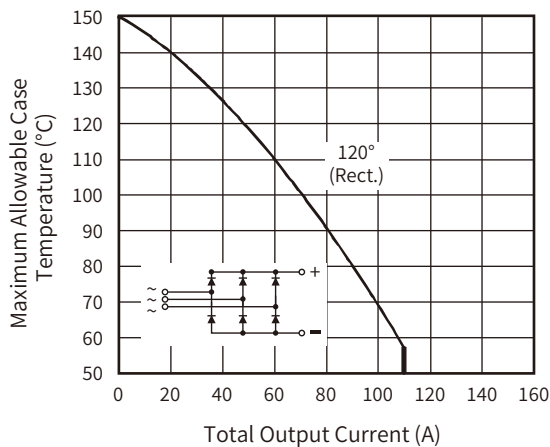


Fig. 1 - Current Ratings Characteristics

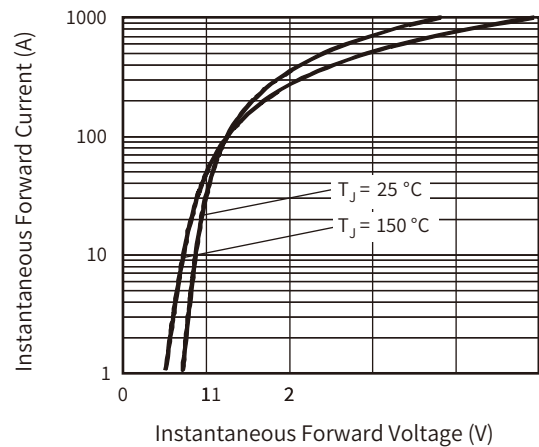


Fig. 2 - Forward Voltage Drop Characteristics

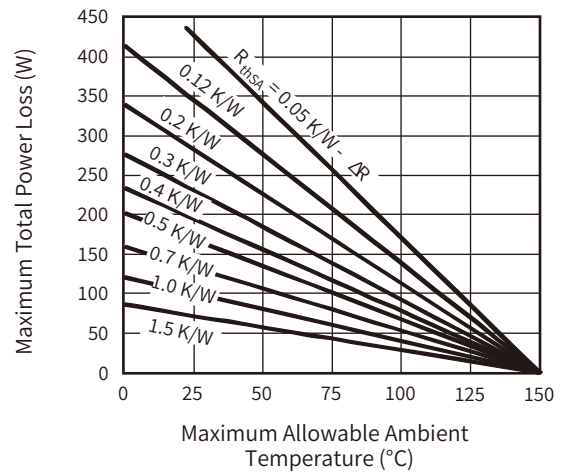
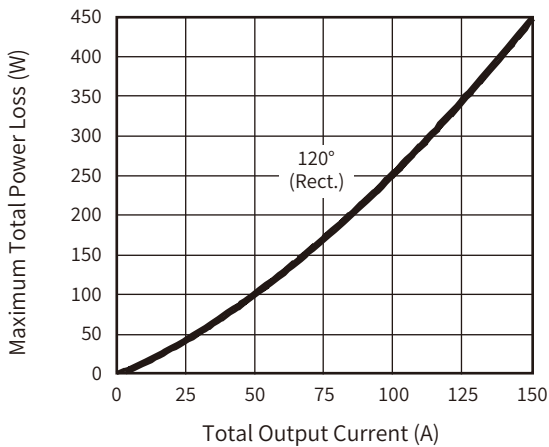


Fig. 3 - Total Power Loss Characteristics

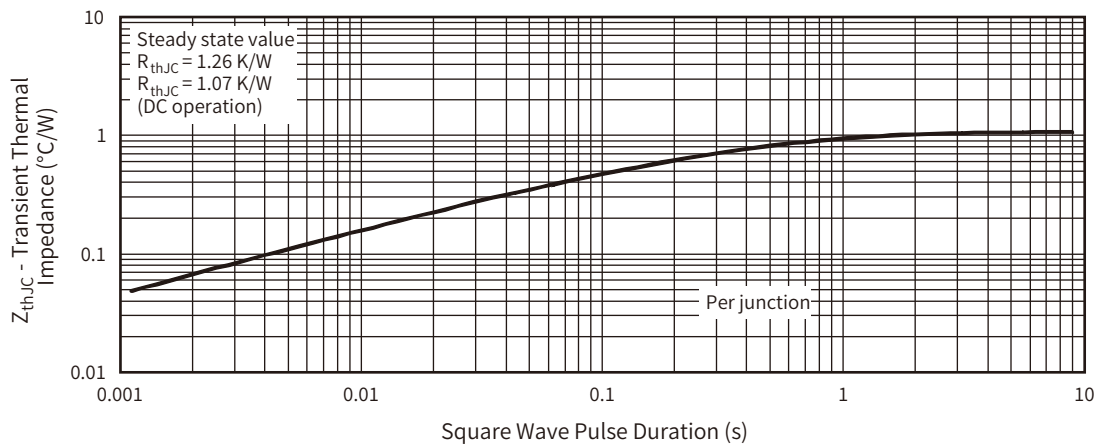


Fig. 4 - Thermal Impedance  $Z_{thJC}$  Characteristic

## Dimensions in mm (1mm=0.0394")

