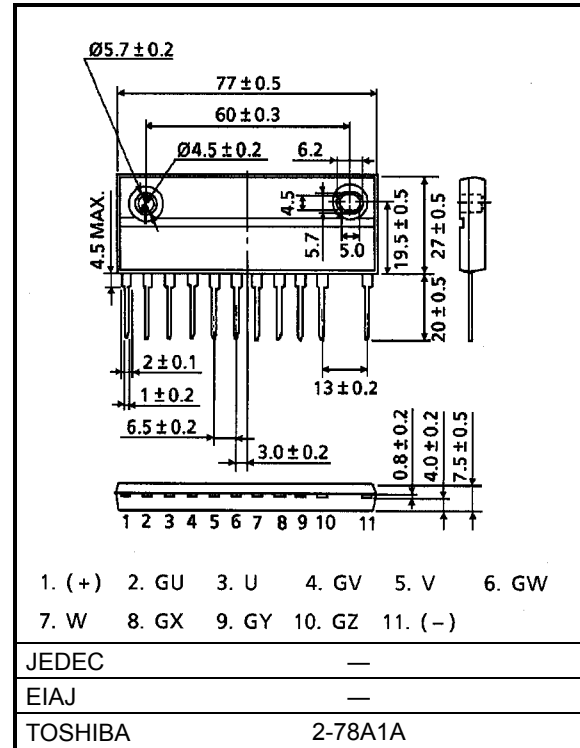


# MP6750

High Power Switching Applications  
Motor Control Applications

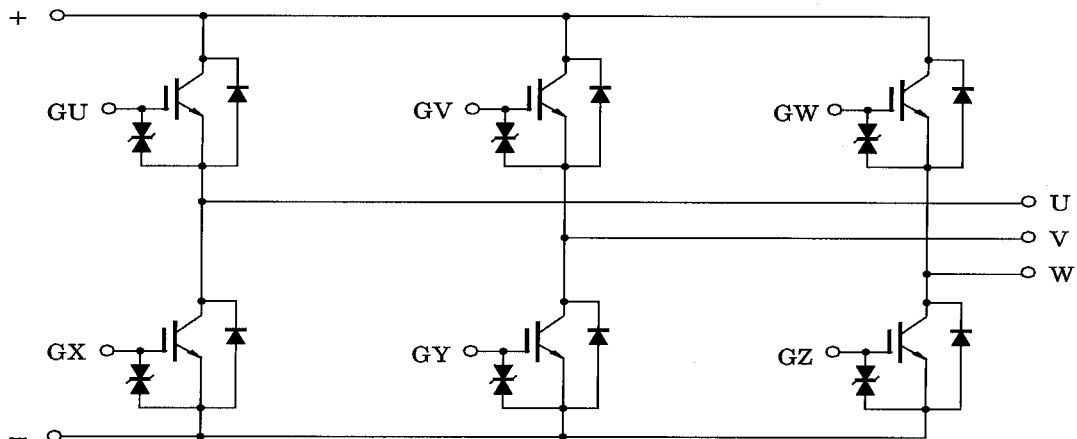
Unit: mm

- The electrodes are isolated from case.
- 6 IGBTs are built into 1 package.
- Enhancement-mode
- Low saturation voltage  
:  $V_{CE(sat)} = 4.0V$  (Max) ( $I_C = 15A$ )
- High speed :  $t_f = 0.35\mu s$  (Max) ( $I_C = 15A$ )  
 $t_{rr} = 0.15\mu s$  (Max) ( $I_F = 15A$ )



Weight: 44g

## Equivalent Circuit



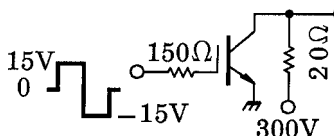
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## Maximum Ratings (Ta = 25°C)

| Characteristic                          |     | Symbol     | Rating                | Unit |
|-----------------------------------------|-----|------------|-----------------------|------|
| Collector-emitter voltage               |     | $V_{CES}$  | 600                   | V    |
| Gate-emitter voltage                    |     | $V_{GES}$  | $\pm 20$              | V    |
| Collector current                       | DC  | $I_C$      | 15                    | A    |
|                                         | 1ms | $I_{CP}$   | 30                    |      |
| Forward current                         | DC  | $I_F$      | 15                    | A    |
|                                         | 1ms | $I_{FM}$   | 30                    |      |
| Collector power dissipation (Tc = 25°C) |     | $P_C$      | 55                    | W    |
| Junction temperature                    |     | $T_j$      | 150                   | °C   |
| Storage temperature range               |     | $T_{stg}$  | -40 ~ 125             | °C   |
| Isolation voltage                       |     | $V_{isol}$ | 2500<br>(AC 1 minute) | V    |
| Screw torque                            |     | —          | 1.5                   | N·m  |

## Electrical Characteristics (Ta = 25°C)

| Characteristic                       |               | Symbol         | Test Condition                                                                       | Min | Typ. | Max      | Unit    |
|--------------------------------------|---------------|----------------|--------------------------------------------------------------------------------------|-----|------|----------|---------|
| Gate leakage current                 |               | $I_{GES}$      | $V_{GE} = \pm 20V, V_{CE} = 0$                                                       | —   | —    | $\pm 20$ | $\mu A$ |
| Collector cut-off current            |               | $I_{CES}$      | $V_{CE} = 600V, V_{GE} = 0$                                                          | —   | —    | 1.0      | mA      |
| Gate-emitter cut-off voltage         |               | $V_{GE (off)}$ | $I_C = 15mA, V_{CE} = 5V$                                                            | 3.0 | —    | 6.0      | V       |
| Collector-emitter saturation voltage |               | $V_{CE (sat)}$ | $I_C = 15A, V_{GE} = 15V$                                                            | —   | 3.0  | 4.0      | V       |
| Input capacitance                    |               | $C_{ies}$      | $V_{CE} = 10V, V_{GE} = 0, f = 1MHz$                                                 | —   | 1000 | —        | pF      |
| Switching time                       | Rise time     | $t_r$          |  | —   | 0.3  | 0.6      | $\mu s$ |
|                                      | Turn-on time  | $t_{on}$       |                                                                                      | —   | 0.4  | 0.8      |         |
|                                      | Fall time     | $t_f$          |                                                                                      | —   | 0.2  | 0.35     |         |
|                                      | Turn-off time | $t_{off}$      |                                                                                      | —   | 0.5  | 1.0      |         |
| Forward voltage                      |               | $V_F$          | $I_F = 15A, V_{GE} = 0$                                                              | —   | 1.7  | 2.5      | V       |
| Reverse recovery time                |               | $t_{rr}$       | $I_F = 15A, V_{GE} = -10V$<br>$di/dt = 50A/\mu s$                                    | —   | 0.08 | 0.15     | $\mu s$ |
| Thermal resistance                   |               | $R_{th (j-c)}$ | Transistor                                                                           | —   | —    | 2.27     | °C / W  |
|                                      |               |                | Diode                                                                                | —   | —    | 3.09     |         |

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