

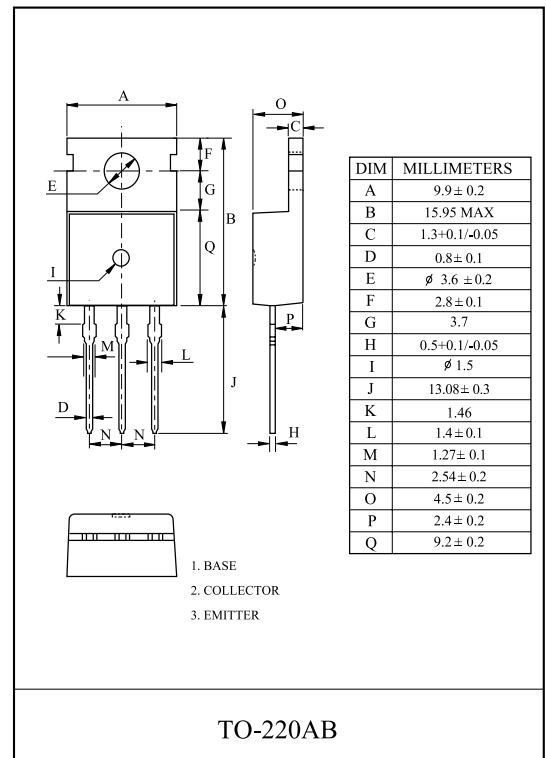
SWITCHING REGULATOR APPLICATION.  
HIGH VOLTAGE SWITCHING APPLICATION.  
HIGH SPEED DC-DC CONVERTER APPLICATION.

#### FEATURES

- Excellent Switching Times  
:  $t_{on}=1.6 \mu s(\text{Max.})$ ,  $t_f=0.7 \mu s(\text{Max.})$ , at  $I_C=5A$
- High Collector Voltage :  $V_{CBO}=700V$ .

#### MAXIMUM RATING ( $T_a=25^\circ C$ )

| CHARACTERISTIC                                      |       | SYMBOL    | RATING  | UNIT       |
|-----------------------------------------------------|-------|-----------|---------|------------|
| Collector-Base Voltage                              |       | $V_{CBO}$ | 700     | V          |
| Collector-Emitter Voltage                           |       | $V_{CEO}$ | 400     | V          |
| Emitter-Base Voltage                                |       | $V_{EBO}$ | 9       | V          |
| Collector Current                                   | DC    | $I_C$     | 8       | A          |
|                                                     | Pulse | $I_{CP}$  | 16      |            |
| Base Current                                        |       | $I_B$     | 4       | A          |
| Collector Power Dissipation<br>( $T_c=25^\circ C$ ) |       | $P_C$     | 80      | W          |
| Junction Temperature                                |       | $T_j$     | 150     | $^\circ C$ |
| Storage Temperature Range                           |       | $T_{stg}$ | -55 150 | $^\circ C$ |



#### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ )

| CHARACTERISTIC                       | SYMBOL             | TEST CONDITION                                                            | MIN. | TYP. | MAX. | UNIT    |
|--------------------------------------|--------------------|---------------------------------------------------------------------------|------|------|------|---------|
| Emitter Cut-off Current              | $I_{EBO}$          | $V_{EB}=9V$ , $I_C=0$                                                     | -    | -    | 1    | mA      |
| DC Current Gain                      | $h_{FE}(1)$ (Note) | $V_{CE}=5V$ , $I_C=2A$                                                    | 15   | -    | 39   |         |
|                                      | $h_{FE}(2)$        | $V_{CE}=5V$ , $I_C=5A$                                                    | 10   | -    | -    |         |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$      | $I_C=2A$ , $I_B=0.4A$                                                     | -    | -    | 1    | V       |
|                                      |                    | $I_C=5A$ , $I_B=1A$                                                       | -    | -    | 2    |         |
|                                      |                    | $I_C=8A$ , $I_B=2A$                                                       | -    | -    | 3    |         |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$      | $I_C=2A$ , $I_B=0.4A$                                                     | -    | -    | 1.5  | V       |
|                                      |                    | $I_C=5A$ , $I_B=1A$                                                       | -    | -    | 1.6  |         |
| Collector Output Capacitance         | $C_{ob}$           | $V_{CB}=10V$ , $f=0.1MHz$ , $I_E=0$                                       | -    | 110  | -    | pF      |
| Transition Frequency                 | $f_T$              | $V_{CE}=10V$ , $I_C=0.5A$                                                 | 4    | -    | -    | MHz     |
| Turn-On Time                         | $t_{on}$           | <p><math>I_{B1}=I_{B2}=1A</math><br/>DUTY CYCLE <math>\leq 2\%</math></p> | -    | -    | 1.6  | $\mu s$ |
| Storage Time                         | $t_{stg}$          |                                                                           | -    | -    | 3    | $\mu s$ |
| Fall Time                            | $t_f$              |                                                                           | -    | -    | 0.7  | $\mu s$ |

Note :  $h_{FE}$  Classification R:15 27, O:23 39

