

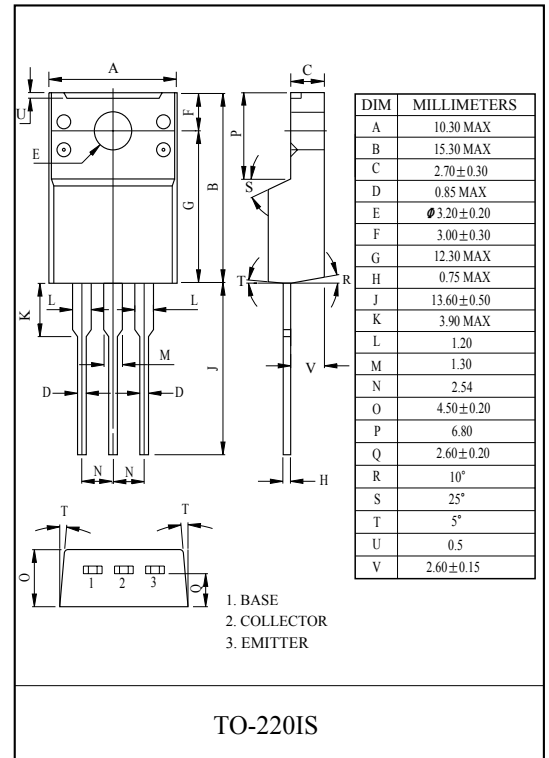
HIGH CURRENT SWITCHING APPLICATION.  
LAMP SOLENOID DRIVER APPLICATION.

### FEATURES

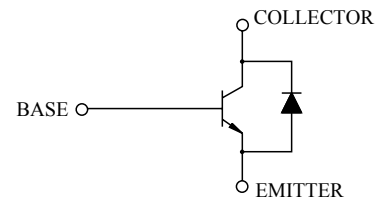
- High DC Current Gain  
:  $h_{FE}=500 \sim 1500(I_C=1A)$ .
- Low Collector Saturation Voltage  
:  $V_{CE(sat)}=0.35V(\text{Max.})(I_C=3A)$ .

### MAXIMUM RATING (Ta=25°C)

| CHARACTERISTIC              |         | SYMBOL    | RATING    | UNIT |
|-----------------------------|---------|-----------|-----------|------|
| Collector-Base Voltage      |         | $V_{CBO}$ | 100       | V    |
| Collector-Emitter Voltage   |         | $V_{CEO}$ | 80        | V    |
| Emitter-Base Voltage        |         | $V_{EBO}$ | 7         | V    |
| Collector Current           | DC      | $I_C$     | 5         | A    |
|                             | Pulse   | $I_{CP}$  | 8         |      |
| Base Current                |         | $I_B$     | 1         | A    |
| Collector Power Dissipation | Ta=25°C | $P_C$     | 2         | W    |
|                             | Tc=25°C |           | 30        |      |
| Junction Temperature        |         | $T_j$     | 150       | °C   |
| Storage Temperature Range   |         | $T_{stg}$ | -55 ~ 150 | °C   |



### EQUIVALENT CIRCUIT



### ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC                       |              | SYMBOL        | TEST CONDITION  | MIN. | TYP. | MAX. | UNIT    |
|--------------------------------------|--------------|---------------|---|------|------|------|---------|
| Collector Cut-off Current            |              | $I_{CBO}$     | $V_{CB}=80V, I_E=0$   | -    | -    | 10   | $\mu A$ |
| Emitter Cut-off Current              |              | $I_{EBO}$     | $V_{EB}=7V, I_C=0$  | -    | -    | 10   | $\mu A$ |
| Collector-Emitter Breakdown Voltage  |              | $V_{(BR)CEO}$ | $I_C=50mA, I_B=0$   | 80   | -    | -    | V       |
| DC Current Gain                      |              | $h_{FE}(1)$   | $V_{CE}=1V, I_C=1A$   | 500  | -    | 1500 |         |
|                                      |              | $h_{FE}(2)$   | $V_{CE}=1V, I_C=5A$   | 150  | -    | -    |         |
| Collector-Emitter Saturation Voltage |              | $V_{CE(sat)}$ | $I_C=3A, I_B=0.03A$   | -    | -    | 0.35 | V       |
| Base-Emitter Saturation Voltage      |              | $V_{BE(sat)}$ | $I_C=3A, I_B=0.03A$   | -    | -    | 1.2  | V       |
| Collector-Emitter Forward Voltage    |              | $V_{ECF}$     | $I_E=3A, I_B=0$   | -    | -    | 2.5  | V       |
| Transition Frequency                 |              | $f_T$         | $V_{CE}=5V, I_C=1A$   | -    | 130  | -    | MHz     |
| Collector Output Capacitance         |              | $C_{ob}$      | $V_{CE}=10V, I_E=0, f=1MHz$                                   | -    | 110  | -    | pF      |
| Switching Time                       | Turn-on Time | $t_{on}$      | <p><math>I_{B1}=I_{B2}=10mA</math><br/>DUTY CYCLE &lt; 1%</p> | -    | 0.6  | -    | $\mu S$ |
|                                      | Storage Time | $T_{stg}$     |   | -    | 3.0  | -    |         |
|                                      | Fall Time    | $t_f$         |   | -    | 0.8  | -    |         |

