

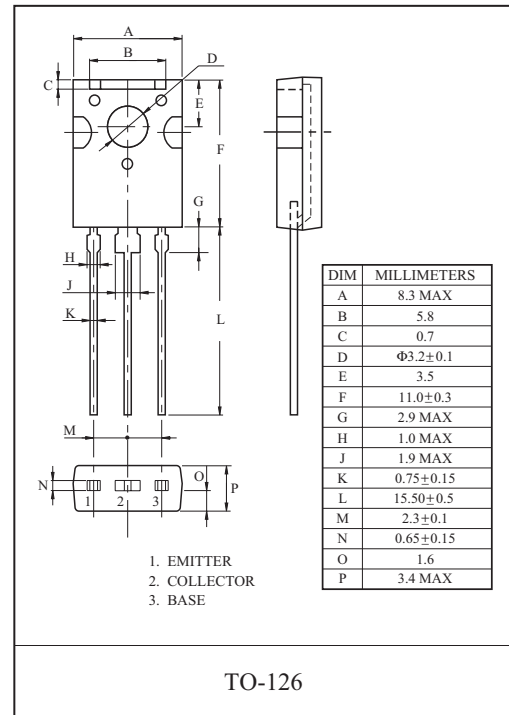
SWITCHING REGULATOR APPLICATION.  
HIGH VOLTAGE AND HIGH SPEED  
SWITCHING APPLICATION.

### FEATURES

- Excellent Switching Times  
:  $t_{on}=1.1 \mu s(\text{Max.})$ ,  $t_f=0.7 \mu s(\text{Max.})$ , at  $I_C=1A$
- High Collector Voltage :  $V_{CBO}=700V$ .

### MAXIMUM RATING (Ta=25 )

| 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        | $I_C$    | A    |
|                             | Pulse     | $I_{CP}$ |      |
| Base Current                | $I_B$     | 0.75     | A    |
| Collector Power Dissipation | $P_C$     | Ta=25    | 1.5  |
|                             |           | Tc=25    | 20   |
| Junction Temperature        | $T_j$     | 150      |      |
| Storage Temperature Range   | $T_{stg}$ | -55 150  |      |

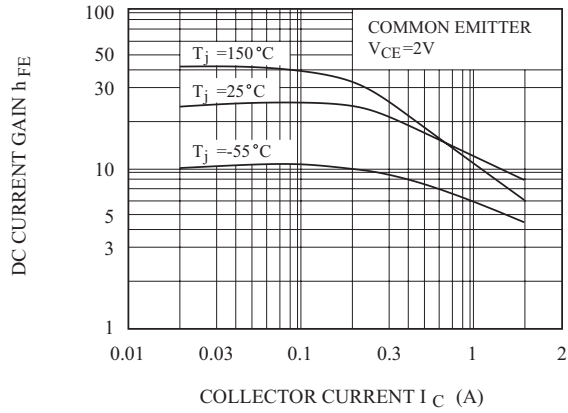


### ELECTRICAL CHARACTERISTICS (Ta=25 )

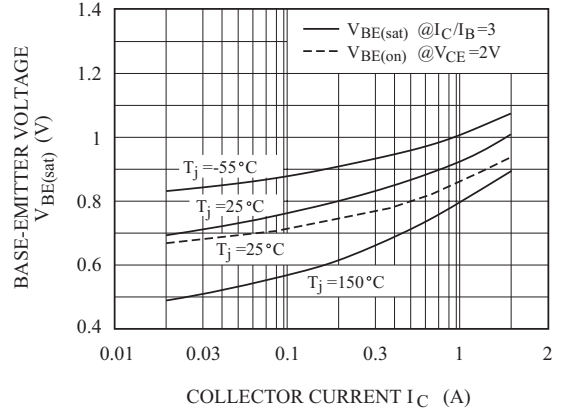
| CHARACTERISTIC                       | SYMBOL             | TEST CONDITION  | MIN. | TYP. | MAX. | UNIT    |
|--------------------------------------|--------------------|---|------|------|------|---------|
| Emitter Cut-off Current              | $I_{EBO}$          | $V_{EB}=9V$ , $I_C=0$   | -    | -    | 10   | $\mu A$ |
| Collector Cut-off Current            | $I_{CBO}$          | $V_{CB}=700V$ , $I_E=0$   | -    | -    | 10   | $\mu A$ |
| DC Current Gain                      | $h_{FE}(1)$ (Note) | $V_{CE}=2V$ , $I_C=0.5A$  | 9    | -    | 38   |         |
|                                      | $h_{FE}(2)$        | $V_{CE}=2V$ , $I_C=1A$  | 5    | -    | -    |         |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$      | $I_C=0.5A$ , $I_B=0.1A$   | -    | -    | 0.5  | V       |
|                                      |                    | $I_C=1A$ , $I_B=0.25A$  | -    | -    | 1    |         |
|                                      |                    | $I_C=1.5A$ , $I_B=0.5A$   | -    | -    | 3    |         |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$      | $I_C=0.5A$ , $I_B=0.1A$   | -    | -    | 1    | V       |
|                                      |                    | $I_C=1A$ , $I_B=0.25A$  | -    | -    | 1.2  |         |
| Collector Output Capacitance         | $C_{ob}$           | $V_{CB}=10V$ , $f=0.1MHz$ , $I_E=0$   | -    | 21   | -    | pF      |
| Transition Frequency                 | $f_T$              | $V_{CE}=10V$ , $I_C=0.1A$   | 4    | -    | -    | MHz     |
| Turn-On Time                         | $t_{on}$           | <p><math>I_{B1}=I_{B2}=0.2A</math><br/>DUTY CYCLE <math>\leq 2\%</math></p> | -    | -    | 1.1  | $\mu s$ |
| Storage Time                         | $t_{stg}$          |   | -    | -    | 4.0  | $\mu s$ |
| Fall Time                            | $t_f$              |   | -    | -    | 0.7  | $\mu s$ |

Note :  $h_{FE}$  Classification R:9 15, O:13 21, Y:20~38

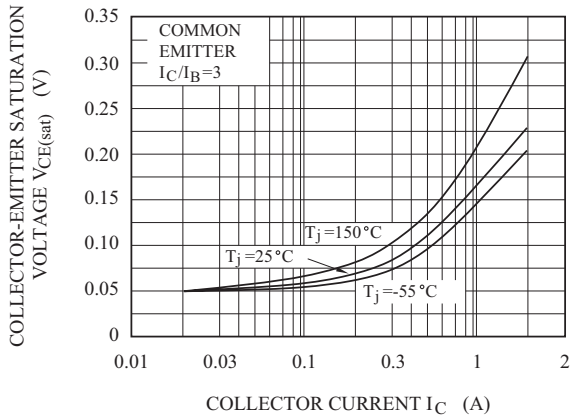
### DC CURRENT GAIN



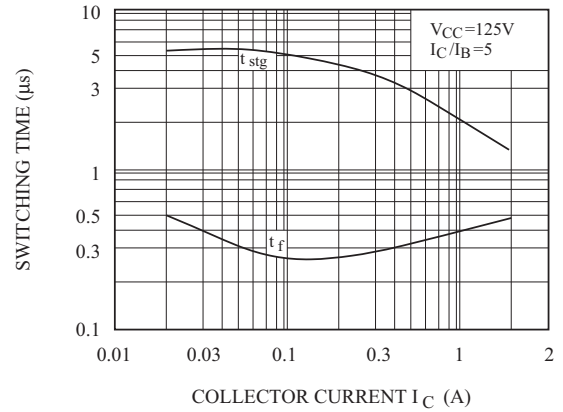
### $V_{BE(sat)} - I_C$



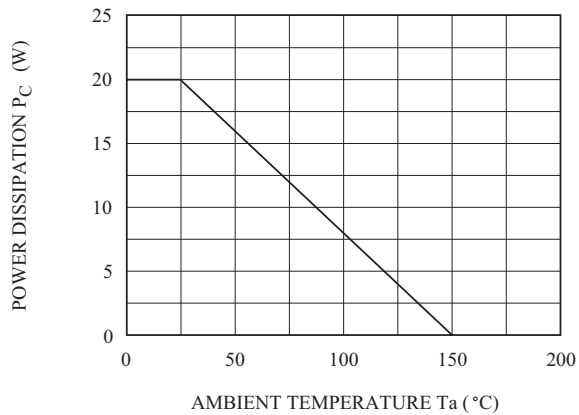
### $V_{CE(sat)} - I_C$



### SWITCHING CHARACTERISTIC



### $P_C - T_a$



### SAFE OPERATING AREA

