

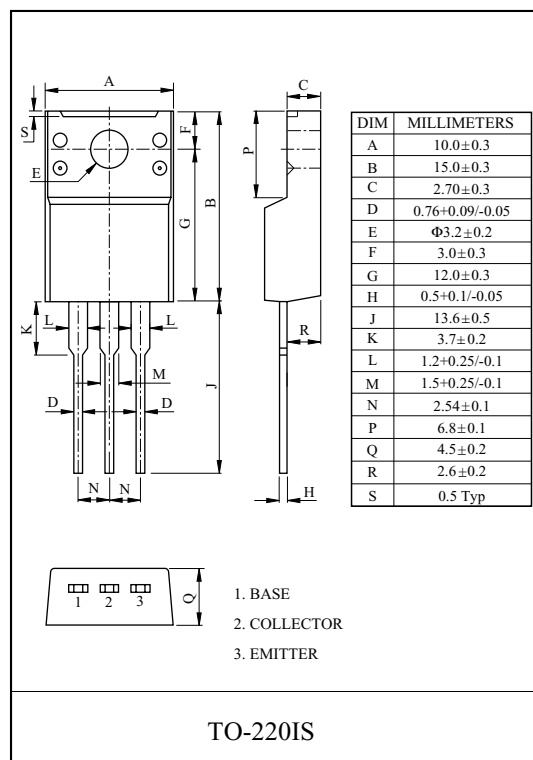
SWITCHING REGULATOR APPLICATION.  
HIGH VOLTAGE SWITCHING APPLICATION.

## FEATURES

- Excellent Switching Times.  
:  $t_{on}=0.5\mu s(\text{Max.})$ ,  $t_f=0.3\mu s(\text{Max.})$ , at  $I_C=4A$ .
- High Collector Voltage :  $V_{CEO}=500V$ .

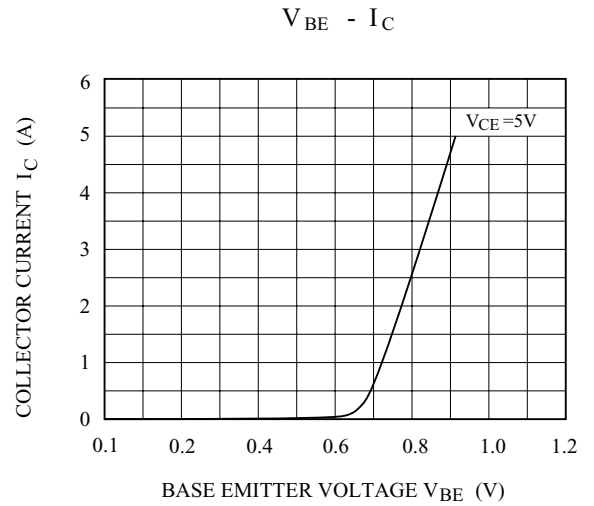
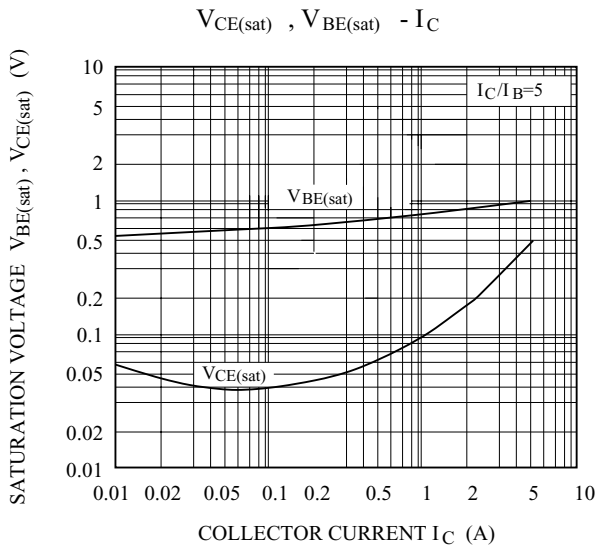
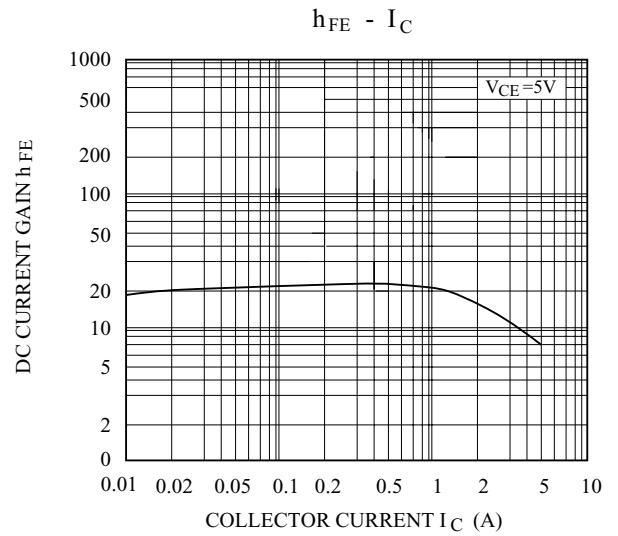
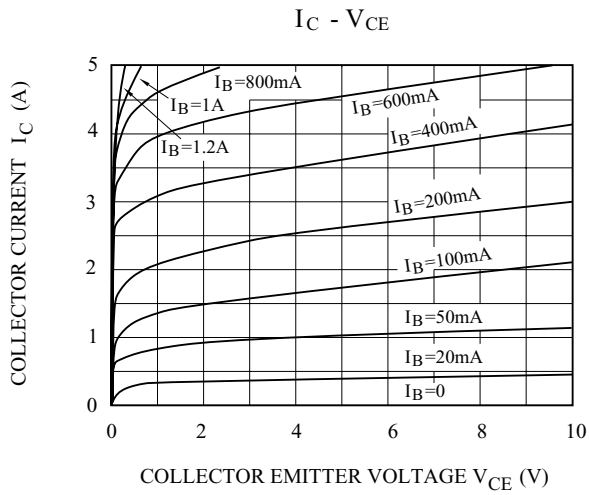
MAXIMUM RATING ( $T_a=25^\circ C$ )

| CHARACTERISTIC                                   |       | SYMBOL    | RATING    | UNIT       |
|--------------------------------------------------|-------|-----------|-----------|------------|
| Collector-Base Voltage                           |       | $V_{CBO}$ | 800       | V          |
| Collector-Emitter Voltage                        |       | $V_{CEO}$ | 500       | V          |
| Emitter-Base Voltage                             |       | $V_{EBO}$ | 7         | V          |
| Collector Current                                | DC    | $I_C$     | 5         | A          |
|                                                  | Pulse | $I_{CP}$  | 10        |            |
| Base Current                                     |       | $I_B$     | 2         | A          |
| Collector Power Dissipation ( $T_c=25^\circ C$ ) |       | $P_C$     | 40        | W          |
| Junction Temperature                             |       | $T_j$     | 150       | $^\circ C$ |
| Storage Temperature Range                        |       | $T_{stg}$ | -55 ~ 150 | $^\circ C$ |

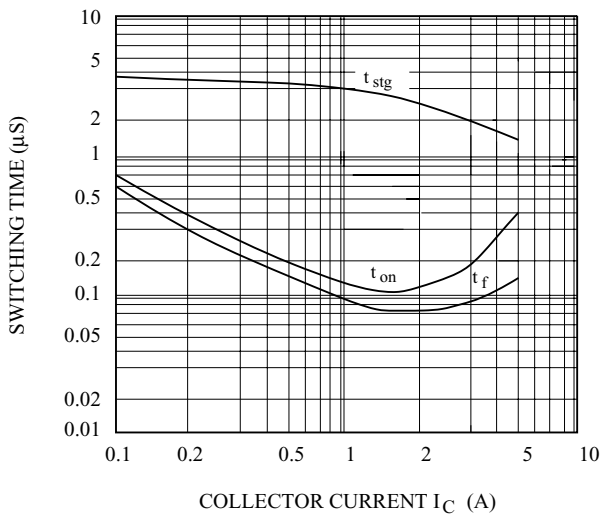
ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ )

| CHARACTERISTIC                       |              | SYMBOL             | TEST CONDITION                                     | MIN. | TYP. | MAX. | UNIT    |
|--------------------------------------|--------------|--------------------|----------------------------------------------------|------|------|------|---------|
| Collector Cut-off Current            |              | $I_{CBO}$          | $V_{CB}=500V$ , $I_E=0$                            | -    | -    | 10   | $\mu A$ |
| Emitter Cut-off Current              |              | $I_{EBO}$          | $V_{EB}=5V$ , $I_C=0$                              | -    | -    | 10   | $\mu A$ |
| Collector-Emitter Sustaining Voltage |              | $V_{CEX(SUS)}$     | $I_C=2.5A$ , $I_{B1}=-I_{B2}=1A$ $L=1mH$ , Clamped | 500  | -    | -    | V       |
| Collector-Emitter Saturation Voltage |              | $V_{CE(sat)}$      | $I_C=3A$ , $I_B=0.6A$                              | -    | -    | 1    | V       |
| Base-Emitter Saturation Voltage      |              | $V_{BE(sat)}$      | $I_C=3A$ , $I_B=0.6A$                              | -    | -    | 1.5  | V       |
| DC Current Gain                      |              | $h_{FE}(1)$ (Note) | $V_{CE}=5V$ , $I_C=0.6A$                           | 15   | -    | 50   |         |
|                                      |              | $h_{FE}(2)$        | $V_{CE}=5V$ , $I_C=3A$                             | 8    | -    | -    |         |
| Collector Output Capacitance         |              | $C_{ob}$           | $V_{CB}=10V$ , $I_E=0$ , $f=1MHz$                  | -    | 80   | -    | pF      |
| Transition Frequency                 |              | $f_T$              | $V_{CE}=10V$ , $I_C=0.6A$                          | -    | 18   | -    | MHz     |
| Switching Time                       | Turn On Time | $t_{on}$           |                                                    | -    | -    | 0.5  | $\mu s$ |
|                                      | Storage Time | $t_{stg}$          |                                                    | -    | -    | 3    |         |
|                                      | Fall Time    | $t_f$              |                                                    | -    | -    | 0.3  |         |

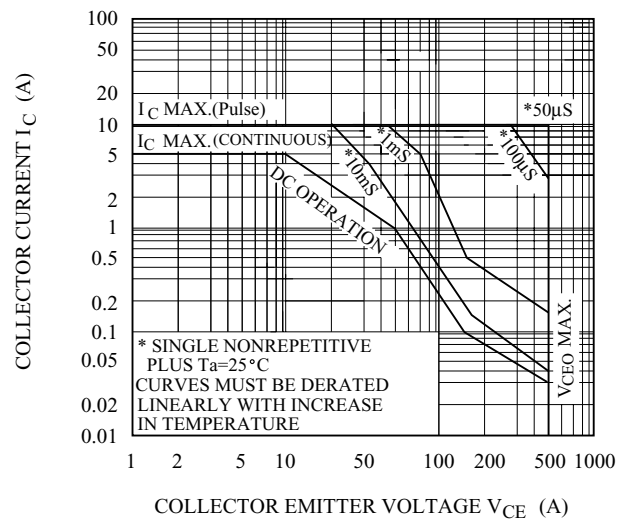
Note :  $h_{FE}(1)$  Classification R:15 ~ 30, O:20 ~ 40, Y:30 ~ 50



## SWITCHING CHARACTERISTICS

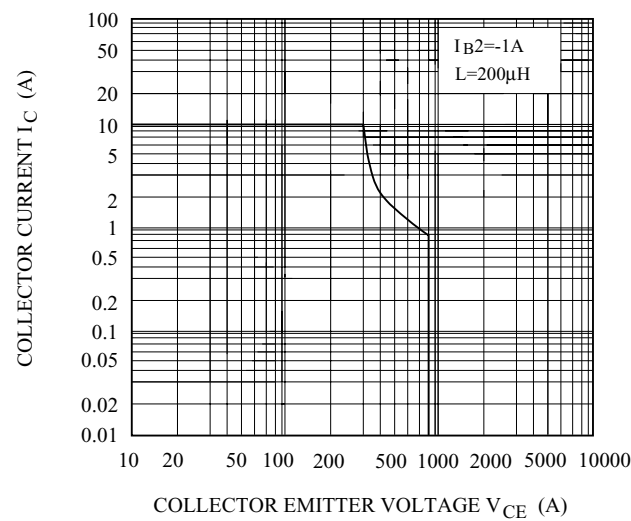


## SAFE OPERATING AREA



# KTC4521F

REVERSE BIAS SAFE OPERATING AREA



Pc - Ta

