

DC-DC CONVERTERS RELAY DRIVERS, LAMP DRIVERS,  
MOTOR DRIVERS, STROBES APPLICATION.

## FEATURES

- Adoption of FBET, MBIT Processes.
- High Current Capacitance.
- Low Collector-to-Emitter Saturation Voltage.
- High-Speed Switching.
- Ultrasmall Package Facilitates Miniaturization in end Products.
- High Allowable Power Dissipation.
- Complementary to KTC3552T.

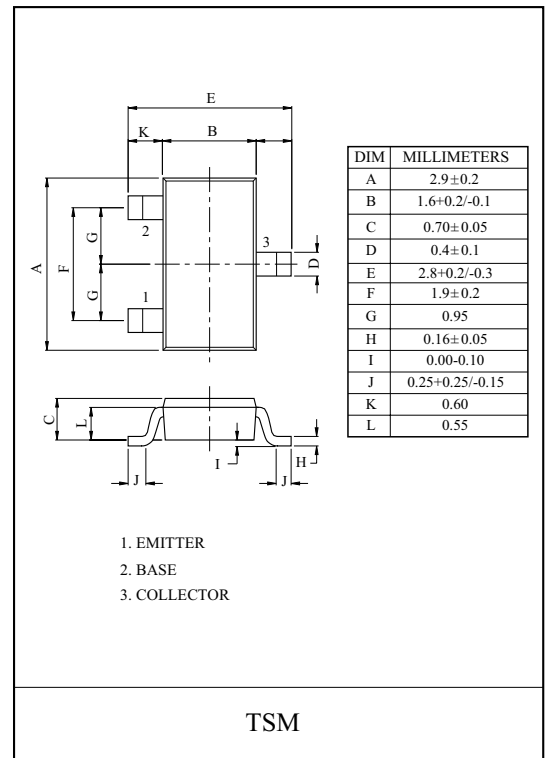
## MAXIMUM RATING (Ta=25℃)

| CHARACTERISTIC              |       | SYMBOL    | RATING    | UNIT |
|-----------------------------|-------|-----------|-----------|------|
| Collector-Base Voltage      |       | $V_{CBO}$ | -50       | V    |
| Collector-Emitter Voltage   |       | $V_{CES}$ | -50       | V    |
|                             |       | $V_{CEO}$ | -50       |      |
| Emitter-Base Voltage        |       | $V_{EBO}$ | -6        | V    |
| Collector Current           | DC    | $I_C$     | -3        | A    |
|                             | Pulse | $I_{CP}$  | -6        |      |
| Base Current                |       | $I_B$     | -600      | mA   |
| Collector Power Dissipation |       | $P_C^*$   | 0.9       | W    |
| Junction Temperature        |       | $T_j$     | 150       | ℃    |
| Storage Temperature Range   |       | $T_{stg}$ | -55 ~ 150 | ℃    |

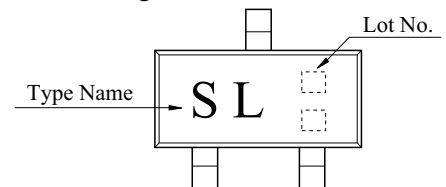
\* Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm)

## ELECTRICAL CHARACTERISTICS (Ta=25℃)

| CHARACTERISTIC                       |              | SYMBOL         | TEST CONDITION                                                                                                                                                                                        | MIN. | TYP.  | MAX. | UNIT |
|--------------------------------------|--------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|------|------|
| Collector Cut-off Current            |              | $I_{CBO}$      | $V_{CB}=-40V, I_E=0$                                                                                                                                                                                  | -    | -     | -0.1 | μA   |
| Emitter Cut-off Current              |              | $I_{EBO}$      | $V_{EB}=-4V, I_C=0$                                                                                                                                                                                   | -    | -     | -0.1 | μA   |
| Collector-Base Breakdown Voltage     |              | $V_{(BR)CBO}$  | $I_C=-10\mu A, I_E=0$                                                                                                                                                                                 | -50  | -     | -    | V    |
| Collector-Emitter Breakdown Voltage  |              | $V_{(BR)CES}$  | $I_C=-100\mu A, V_{BE}=0$                                                                                                                                                                             | -50  | -     | -    | V    |
|                                      |              | $V_{(BR)CEO}$  | $I_C=-1mA, I_B=0$                                                                                                                                                                                     | -50  | -     | -    | V    |
| Emitter-Base Breakdown Voltage       |              | $V_{(BR)EBO}$  | $I_E=-10\mu A, I_C=0$                                                                                                                                                                                 | -6   | -     | -    | V    |
| Collector-Emitter Saturation Voltage |              | $V_{CE(sat)1}$ | $I_C=-1A, I_B=-50mA$                                                                                                                                                                                  | -    | -100  | -200 | mV   |
|                                      |              | $V_{CE(sat)2}$ | $I_C=-2A, I_B=-100mA$                                                                                                                                                                                 | -    | -185  | -500 | mV   |
| Base-Emitter Saturation Voltage      |              | $V_{BE(sat)}$  | $I_C=-2A, I_B=-100mA$                                                                                                                                                                                 | -    | -0.88 | -1.2 | V    |
| DC Current Gain                      |              | $h_{FE}$       | $V_{CE}=-2V, I_C=-100mA$                                                                                                                                                                              | 200  | -     | 560  |      |
| Transition Frequency                 |              | $f_T$          | $V_{CE}=-10V, I_C=-500mA$                                                                                                                                                                             | -    | 360   | -    | MHz  |
| Collector Output Capacitance         |              | $C_{ob}$       | $V_{CB}=-10V, f=1MHz$                                                                                                                                                                                 | -    | 24    | -    | pF   |
| Switching Time                       | Turn-On Time | $t_{on}$       | <p>PW=20μs<br/>DC≤1%</p> <p>INPUT</p> <p>50Ω</p> <p><math>V_{BE}=5V</math></p> <p>100μF</p> <p>470μF</p> <p><math>V_{CC}=-25V</math></p> <p><math>-10I_{B1}=10I_{B2}=I_C=-1A</math></p> <p>OUTPUT</p> | -    | 30    | -    | nS   |
|                                      | Storage Time | $t_{stg}$      |                                                                                                                                                                                                       | -    | 230   | -    |      |
|                                      | Fall Time    | $t_f$          |                                                                                                                                                                                                       | -    | 15    | -    |      |

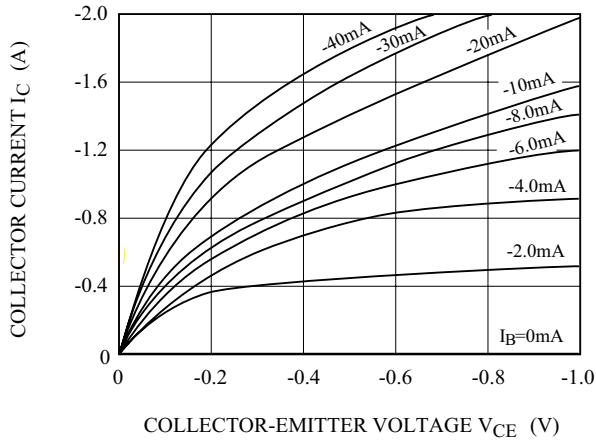


## Marking

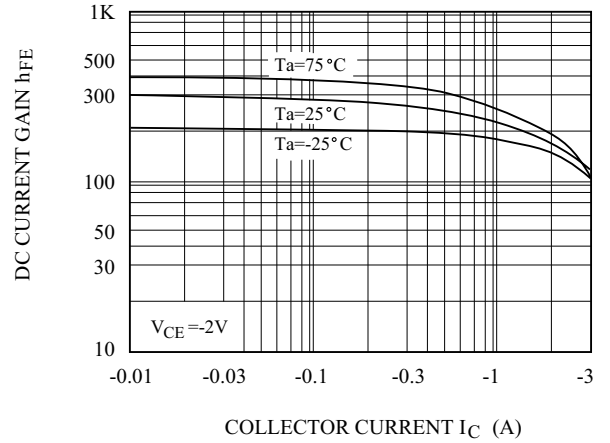


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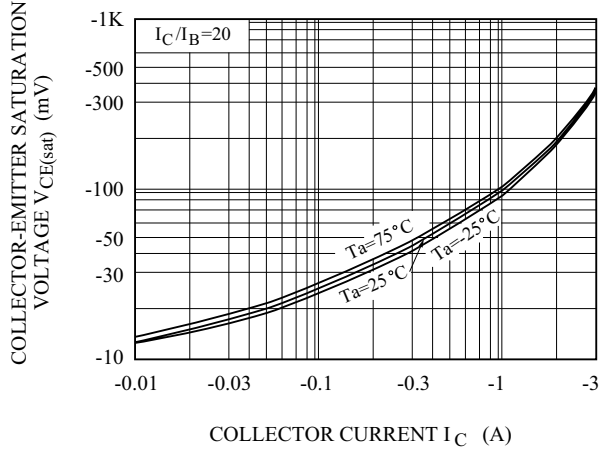
$I_C - V_{CE}$



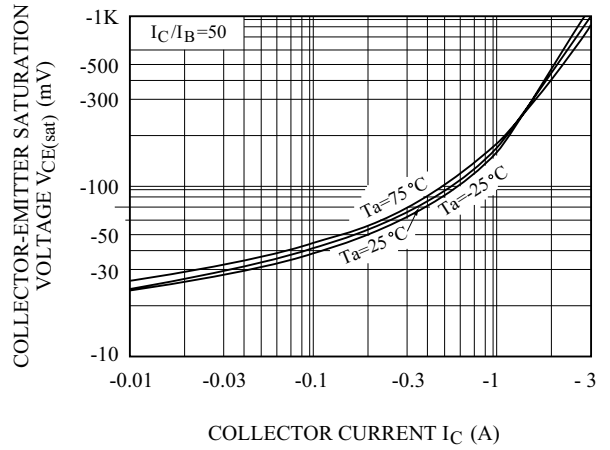
$h_{FE} - I_C$



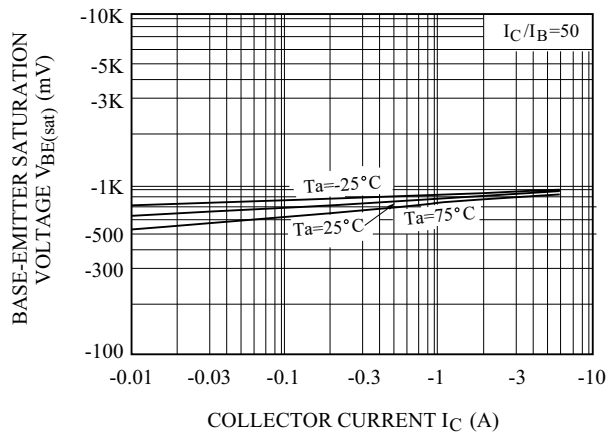
$V_{CE(sat)} - I_C$



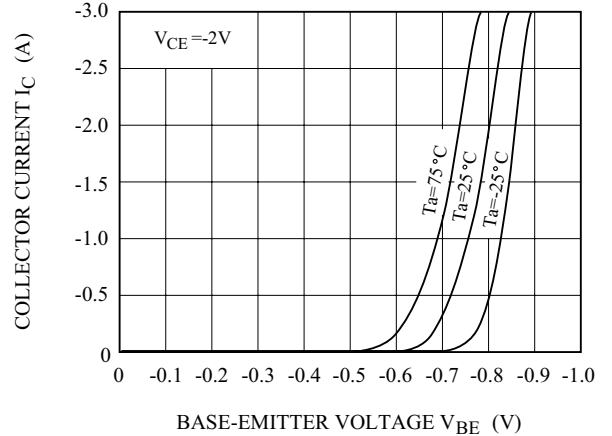
$V_{CE(sat)} - I_C$



$V_{BE(sat)} - I_C$



$I_C - V_{BE}$



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