

TV TUNER, UHF OSCILLATOR APPLICATION.  
(COMMON BASE)  
TV TUNER, UHF CONVERTER APPLICATION.  
(COMMON BASE)

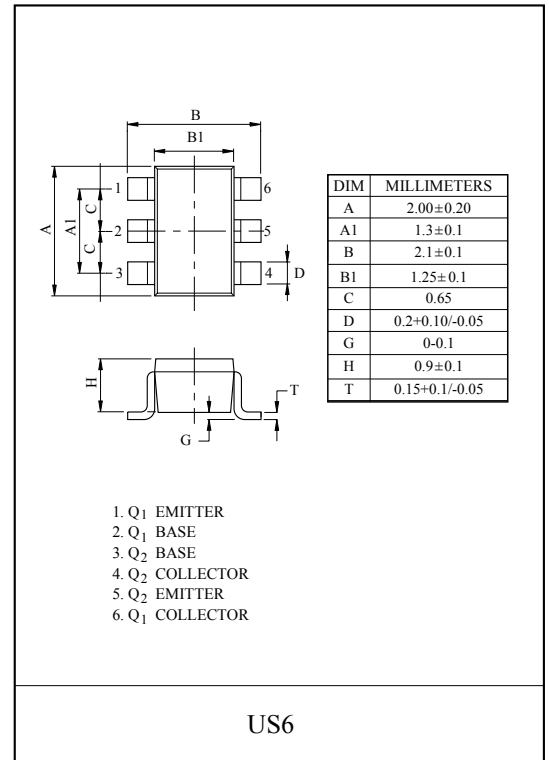
### FEATURES

- High Transition Frequency :  $f_T=1500\text{MHz}$  (Typ.)
- Excellent  $h_{FE}$  Linearity.

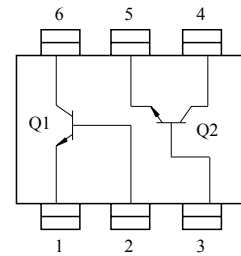
### MAXIMUM RATING (Ta=25°C)

| CHARACTERISTIC              | SYMBOL    | RATING    | UNIT |
|-----------------------------|-----------|-----------|------|
| Collector-Base Voltage      | $V_{CBO}$ | 30        | V    |
| Collector-Emitter Voltage   | $V_{CEO}$ | 15        | V    |
| Emitter-Base Voltage        | $V_{EBO}$ | 3         | V    |
| Base Current                | $I_B$     | 25        | mA   |
| Collector Current           | $I_C$     | 50        | mA   |
| Collector Power Dissipation | $P_C^*$   | 200       | mW   |
| Junction Temperature        | $T_j$     | 150       | °C   |
| Storage Temperature Range   | $T_{stg}$ | -55 ~ 150 | °C   |

\* Total Rating



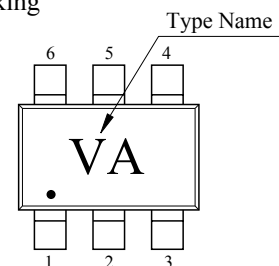
### EQUIVALENT CIRCUIT (TOP VIEW)



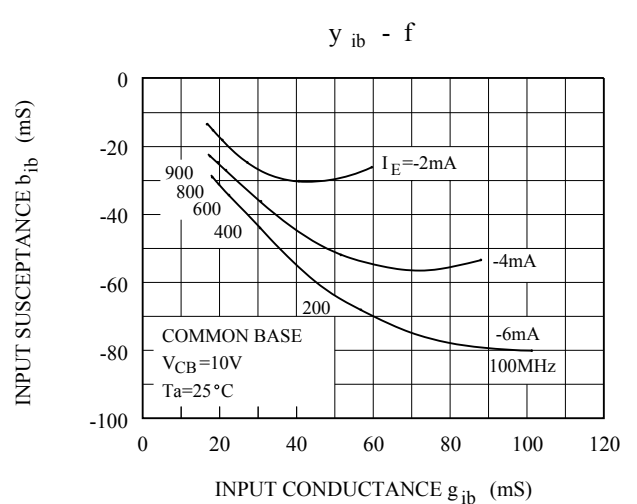
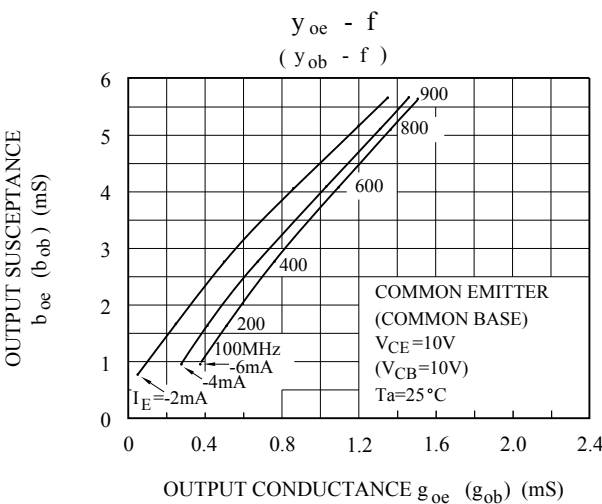
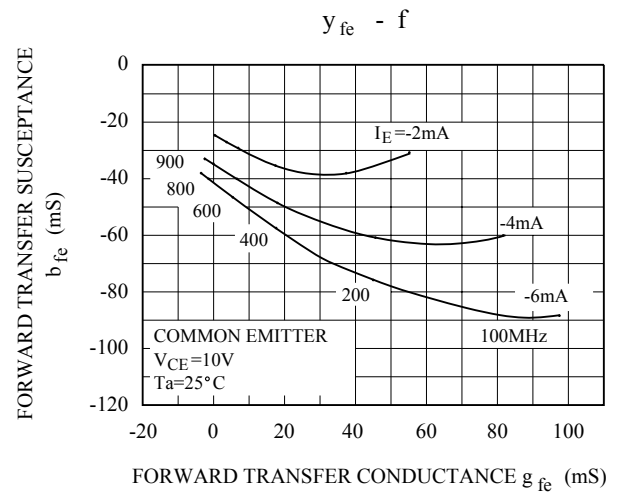
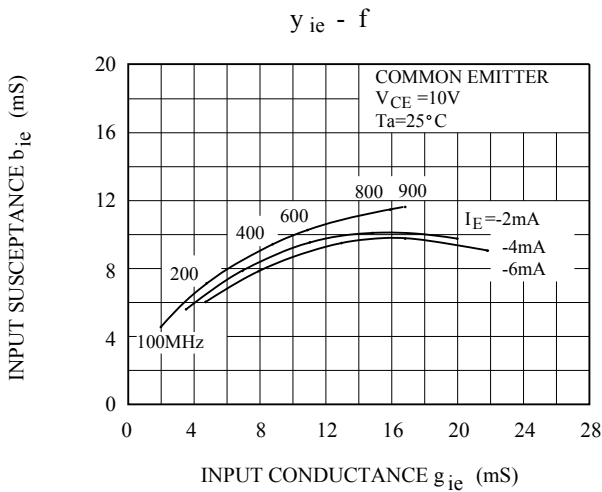
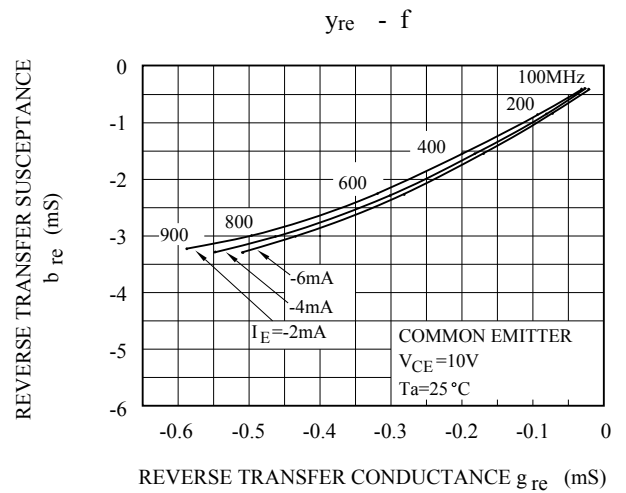
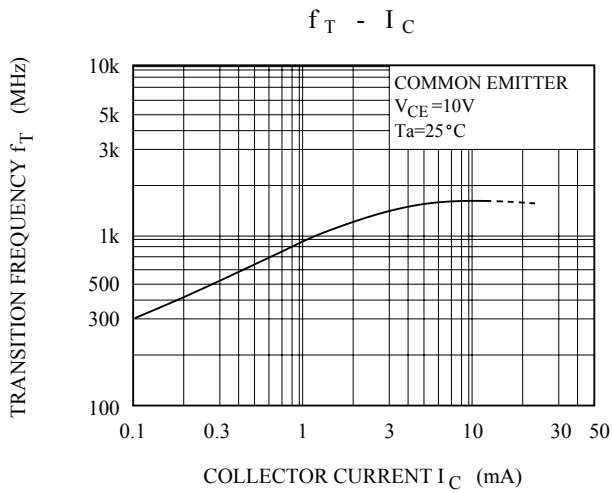
### ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC                      | SYMBOL              | TEST CONDITION                                       | MIN. | TYP. | MAX. | UNIT          |
|-------------------------------------|---------------------|--|------|------|------|---------------|
| Collector Cut-off Current           | $I_{CBO}$           | $V_{CB}=15\text{V}, I_E=0$                           | -    | -    | 0.1  | $\mu\text{A}$ |
| Emitter Cut-off Current             | $I_{EBO}$           | $V_{EB}=3\text{V}, I_C=0$                            | -    | -    | 1.0  | $\mu\text{A}$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$       | $I_C=1\text{mA}, I_B=0$                              | 15   | -    | -    | V             |
| DC Current Gain                     | $h_{FE}$            | $V_{CE}=3\text{V}, I_C=8\text{mA}$                   | 60   | 150  | 320  |               |
| Transition Frequency                | $f_T$               | $V_{CE}=10\text{V}, I_C=8\text{mA}$                  | 1100 | 1500 | -    | MHz           |
| Collector Output Capacitance        | $C_{ob}$            | $V_{CB}=10\text{V}, I_E=2\text{mA}, f=1\text{MHz}$   | -    | 0.9  | 1.3  | pF            |
| Collector-Base Time Constant        | $C_C \cdot r_{bb}'$ | $V_{CB}=10\text{V}, I_E=-8\text{mA}, f=30\text{MHz}$ | -    | 7.0  | 12   | pS            |

### Marking



# KTC813U



# KTC813U

