

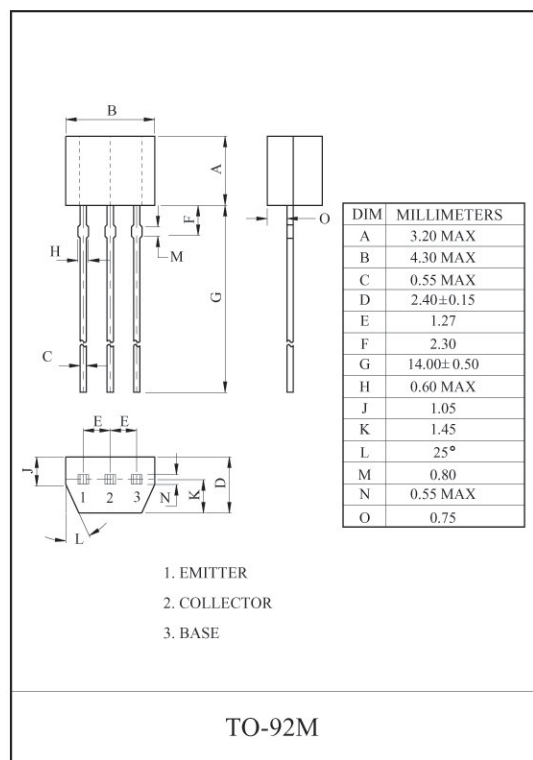
HIGH FREQUENCY APPLICATION.  
HF, VHF BAND AMPLIFIER APPLICATION.

#### FEATURE

- High Power Gain :  $G_{pe}=30\text{dB(Typ.)}$  ( $f=10.7\text{MHz}$ ).
- Recommended for FM IF, OSC Stage and AM CONV, IF Stage.

#### MAXIMUM RATING (Ta=25°C)

| CHARACTERISTIC              | SYMBOL    | RATING    | UNIT |
|-----------------------------|-----------|-----------|------|
| Collector-Base Voltage      | $V_{CBO}$ | 35        | V    |
| Collector-Emitter Voltage   | $V_{CEO}$ | 30        | V    |
| Emitter-Base Voltage        | $V_{EBO}$ | 4         | V    |
| Collector Current           | $I_C$     | 50        | mA   |
| Emitter Current             | $I_E$     | -50       | mA   |
| Collector Power Dissipation | $P_C$     | 400       | m    |
| Junction Temperature        | T         | 150       | °C   |
| Storage Temperature Range   | $T_{stg}$ | -55 ~ 150 | °C   |



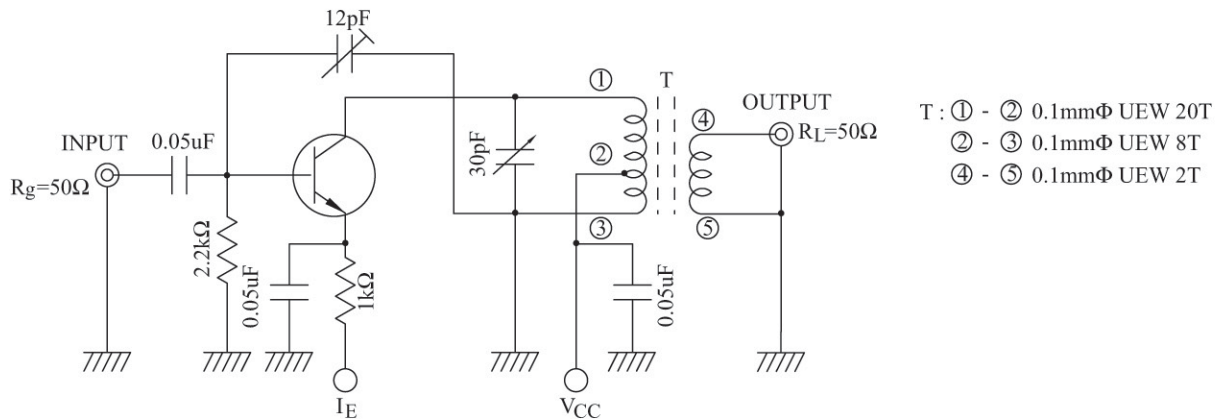
#### ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC                       | SYMBOL          | TEST CONDITION                          | MIN. | TYP. | MAX. | UNIT    |
|--------------------------------------|-----------------|-----------------------------------------|------|------|------|---------|
| Collector Cut-off Current            | $I_{CBO}$       | $V_{CB}=35V, I_E=0$                     | -    | -    | 0.1  | $\mu A$ |
| Emitter Cut-off Current              | $I_{EBO}$       | $V_{EB}=4V, I_C=0$                      | -    | -    | 1.0  | $\mu A$ |
| DC Current Gain                      | $h_{FE}$ (Note) | $V_{CE}=12V, I_C=2mA$                   | 40   | -    | 240  |         |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$   | $I_C=10mA, I_B=1mA$                     | -    | -    | 0.4  | V       |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$   | $I_C=10mA, I_B=1mA$                     | -    | -    | 1.0  | V       |
| Transition Frequency                 | $f_T$           | $V_{CE}=10V, I_C=1mA$                   | 100  | -    | -    | MHz     |
| Collector Output Capacitance         | $C_o$           | $V_{CB}=10V, I_E=0, f=1MHz$             | -    | 2.0  | 3.2  | pF      |
| Collector-Base Time Constant         | $C_c \cdot r$   | $V_{CE}=10V, I_E=-1mA, f=30MHz$         | 10   | -    | 50   | pS      |
| Power Gain                           | $G_{pe}$        | $V_{CC}=6V, I_E=-1mA, f=10.7MHz$ (Fig.) | 27   | 29   | 33   | dB      |

Note :  $h_{FE}$  Classification R:40 ~ 80 , O:70 ~ 140 , Y:120 ~ 240

# KTC3193

Fig. pe TEST CIRCUIT



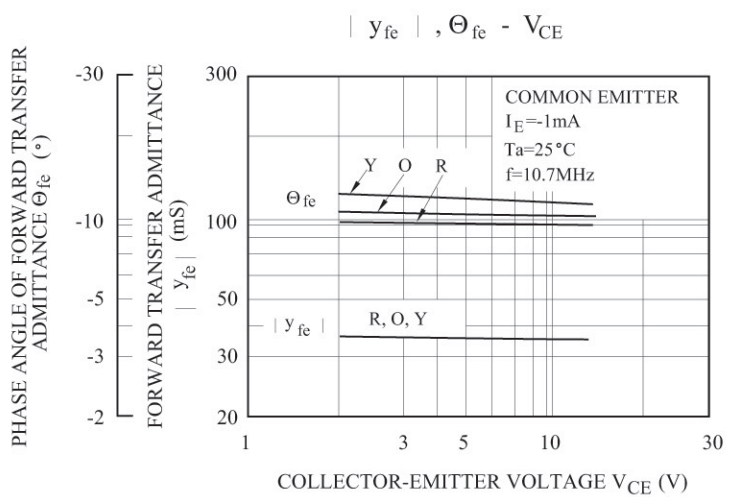
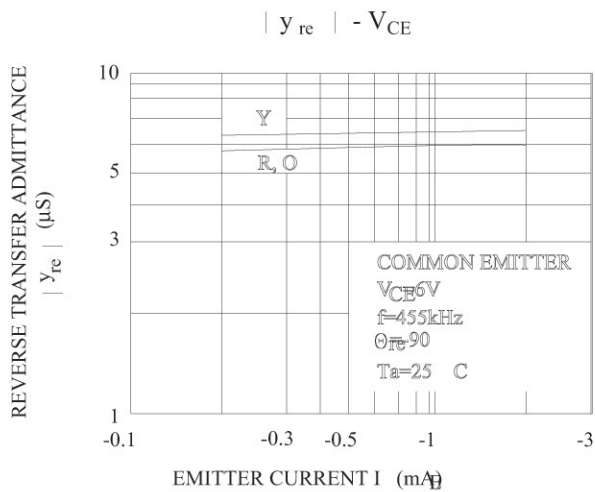
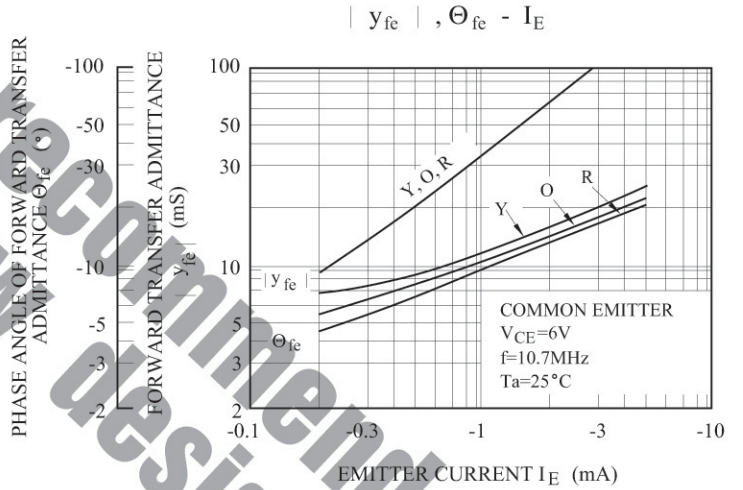
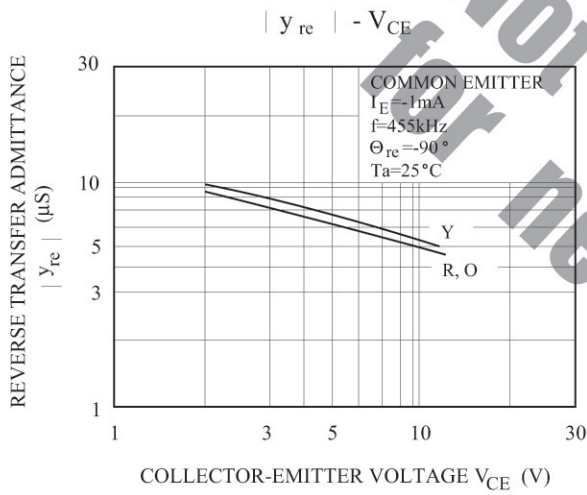
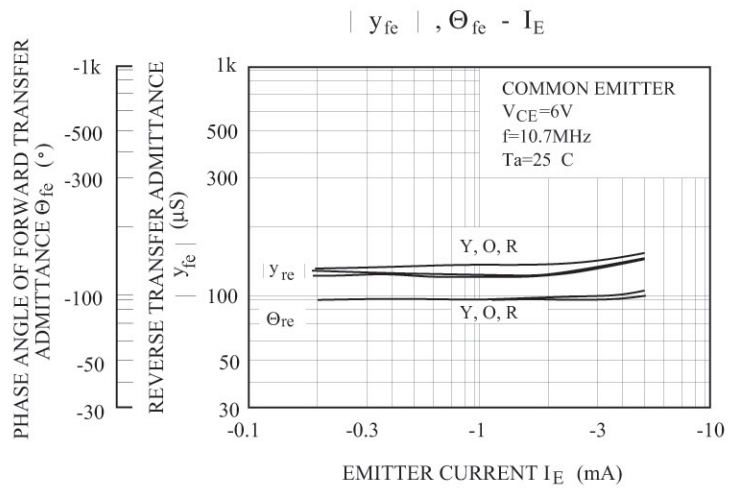
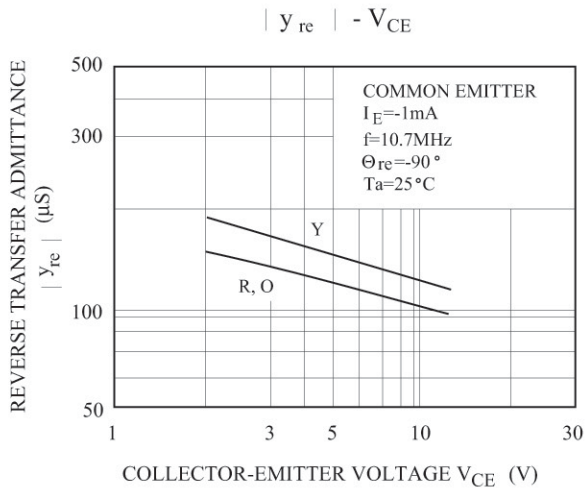
## Typical PARAMETERS (Typ.)

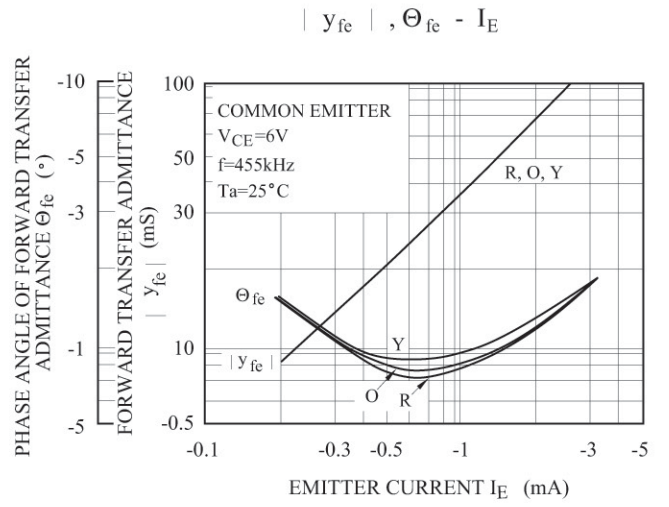
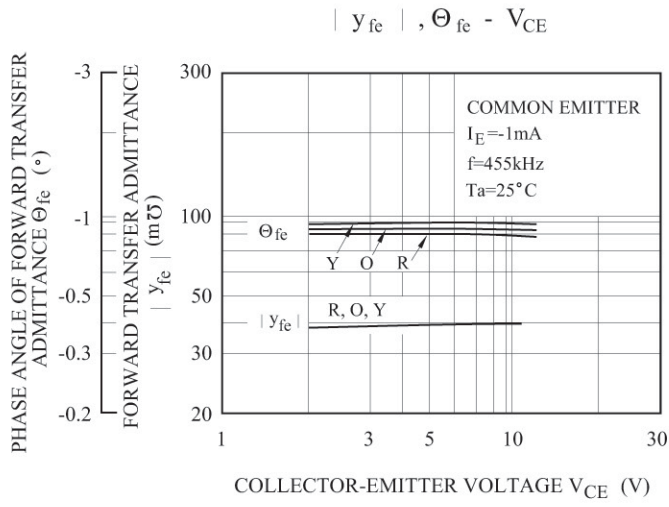
(1) (COMMON EMITTER  $f=455\text{kHz}$ ,  $T_a=25^\circ\text{C}$ )

| CHARACTERISTIC                             | SYMBOL        | KTC3193-R | KTC3193-O | KTC3193-Y | UNIT          |
|--------------------------------------------|---------------|-----------|-----------|-----------|---------------|
| Collector-Emitter Voltage                  | $V_{CE}$      | 6         | 6         | 6         | V             |
| Emitter Current                            | $I_E$         | -1        | -1        | -1        | mA            |
| Input Conductance                          | $g_{ie}$      | 0.58      | 0.41      | 0.26      | mS            |
| Input Capacitance                          | $C_{ie}$      | 53        | 46        | 38        | pF            |
| Output Conductance                         | $g_{oe}$      | 1.9       | 2.        | 4.8       | $\mu\text{S}$ |
| Output Capacitance                         | $C_{oe}$      | 2.6       | 2.8       | 3.6       | pF            |
| Forward Transfer Admittance                | $y_{fe}$      | 38        | 38        | 38        | mS            |
| Phase Angle of Forward Transfer Admittance | $\theta_{fe}$ | -0.9      | -0.83     | -0.92     | $^\circ$      |
| Reverse Transfer Admittance                | $y_{re}$      | 5.        | 5.        | 6.2       | $\mu\text{S}$ |
| Phase Angle of Reverse Transfer Admittance | $\theta_{re}$ | -90       | -90       | -90       | $^\circ$      |

(2) (COMMON EMITTER  $f=10.\text{kHz}$ ,  $T_a=25^\circ\text{C}$ )

| CHARACTERISTIC                             | SYMBOL        | KTC3193-R | KTC3193-O | KTC3193-Y | UNIT          |
|--------------------------------------------|---------------|-----------|-----------|-----------|---------------|
| Collector-Emitter Voltage                  | $V_{CE}$      | 6         | 6         | 6         | V             |
| Emitter Current                            | $I_E$         | -1        | -1        | -1        | mA            |
| Input Conductance                          | $g_{ie}$      | 1.04      | 0.85      | 0.65      | mS            |
| Input Capacitance                          | $C_{ie}$      | 49        | 43        | 36        | pF            |
| Output Conductance                         | $g_{oe}$      | 10        | 15        | 28        | $\mu\text{S}$ |
| Output Capacitance                         | $C_{oe}$      | 2.        | 2.9       | 3.6       | pF            |
| Forward Transfer Admittance                | $y_{fe}$      | 3         | 3         | 3         | mS            |
| Phase Angle of Forward Transfer Admittance | $\theta_{fe}$ | -9.6      | -10.4     | -11.5     | $^\circ$      |
| Reverse Transfer Admittance                | $y_{re}$      | 120       | 120       | 140       | $\mu\text{S}$ |
| Phase Angle of Reverse Transfer Admittance | $\theta_{re}$ | -90       | -90       | -90       | $^\circ$      |





Not recommend  
for new design