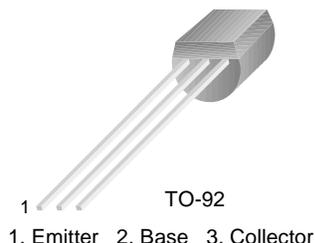


# KSC388

## TV Final Picture IF Amplifier Applications

- $G_{PE} = 33\text{dB}$  (TYP) at  $f = 45\text{MHz}$
- Suffix "-C" means Center Collector (1. Emitter 2. Collector 3. Base)



## NPN Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol    | Parameter                   | Value     | Units            |
|-----------|-----------------------------|-----------|------------------|
| $V_{CBO}$ | Collector-Base Voltage      | 30        | V                |
| $V_{CEO}$ | Collector-Emitter Voltage   | 25        | V                |
| $V_{EBO}$ | Emitter-Base Voltage        | 4         | V                |
| $I_C$     | Collector Current           | 50        | mA               |
| $P_C$     | Collector Power Dissipation | 300       | mW               |
| $T_J$     | Junction Temperature        | 150       | $^\circ\text{C}$ |
| $T_{STG}$ | Storage Temperature         | -55 ~ 150 | $^\circ\text{C}$ |

### Electrical Characteristics $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol               | Parameter                            | Test Condition   | Min. | Typ. | Max. | Units         |
|----------------------|--------------------------------------|--|------|------|------|---------------|
| $BV_{CBO}$           | Collector-Base Breakdown Voltage     | $I_C = 10\mu\text{A}, I_E = 0$                                 | 30   |      |      | V             |
| $BV_{CEO}$           | Collector-Emitter Breakdown Voltage  | $I_C = 5\text{mA}, I_B = 0$                                    | 25   |      |      | V             |
| $I_{CBO}$            | Collector Cut-off Current            | $V_{CB} = 30\text{V}, I_E = 0$                                 |      |      | 0.1  | $\mu\text{A}$ |
| $I_{EBO}$            | Emitter Cut-off Current              | $V_{EB} = 3\text{V}, I_C = 0$                                  |      |      | 0.1  | $\mu\text{A}$ |
| $h_{FE}$             | DC Current Gain                      | $V_{CE} = 12.5\text{V}, I_C = 12.5\text{mA}$                   | 20   |      | 200  |               |
| $V_{CE}(\text{sat})$ | Collector-Emitter Saturation Voltage | $I_C = 15\text{mA}, I_B = 1.5\text{mA}$                        |      |      | 0.2  | V             |
| $V_{BE}(\text{sat})$ | Base-Emitter Saturation Voltage      | $I_C = 15\text{mA}, I_B = 1.5\text{mA}$                        |      |      | 1.5  | V             |
| $C_{ob}$             | Output Capacitance                   | $V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$                | 0.8  |      | 2    | pF            |
| $C_{c-rbb}$          | Collector-Base Time Constant         | $V_{CB} = 10\text{V}, I_C = 1\text{mA}, f = 30\text{MHz}$      |      |      | 25   | ps            |
| $f_T$                | Current Gain Bandwidth Product       | $V_{CE} = 12.5\text{V}, I_C = 12.5\text{mA}$                   | 300  |      |      | MHz           |
| $G_{PE}$             | Power Gain                           | $V_{CC} = 12.5\text{V}, I_C = 12.5\text{mA}, f = 45\text{MHz}$ | 28   | 33   | 36   | dB            |

# Typical Characteristics

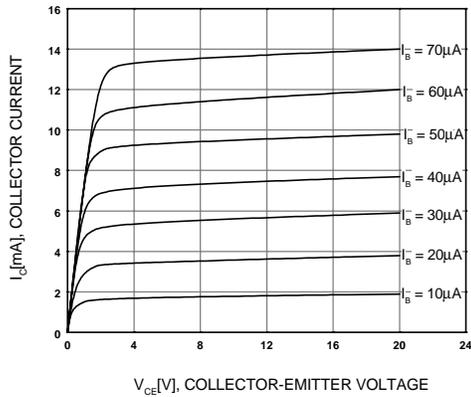


Figure 1. Static Characteristic

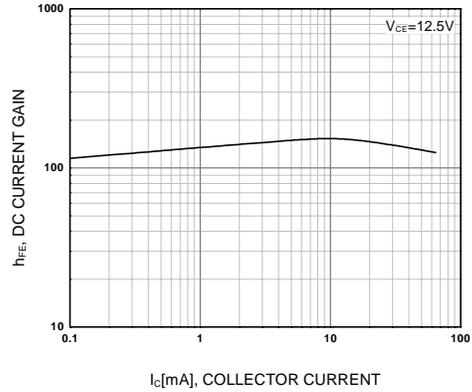


Figure 2. DC current Gain

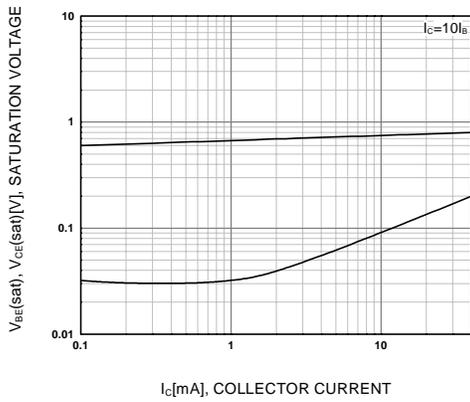


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

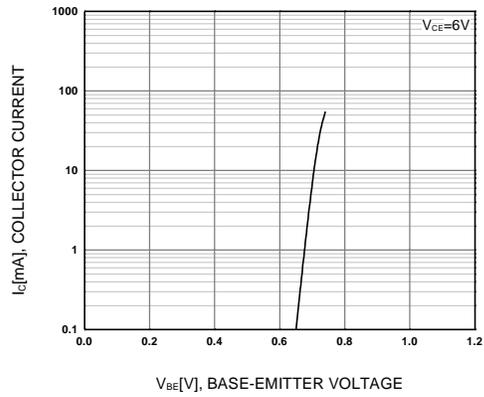


Figure 4. Base-Emitter On Voltage

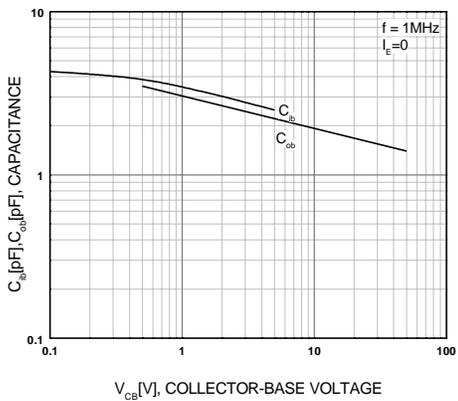


Figure 5. Collector Input Capacitance  
Collector Output Capacitance

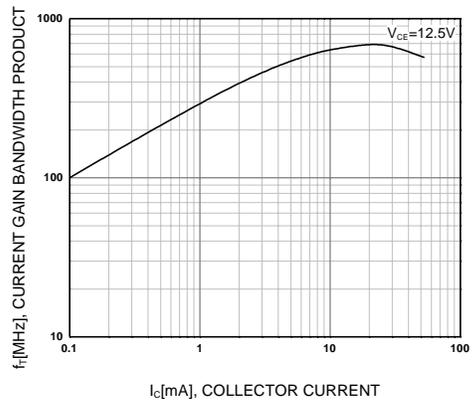
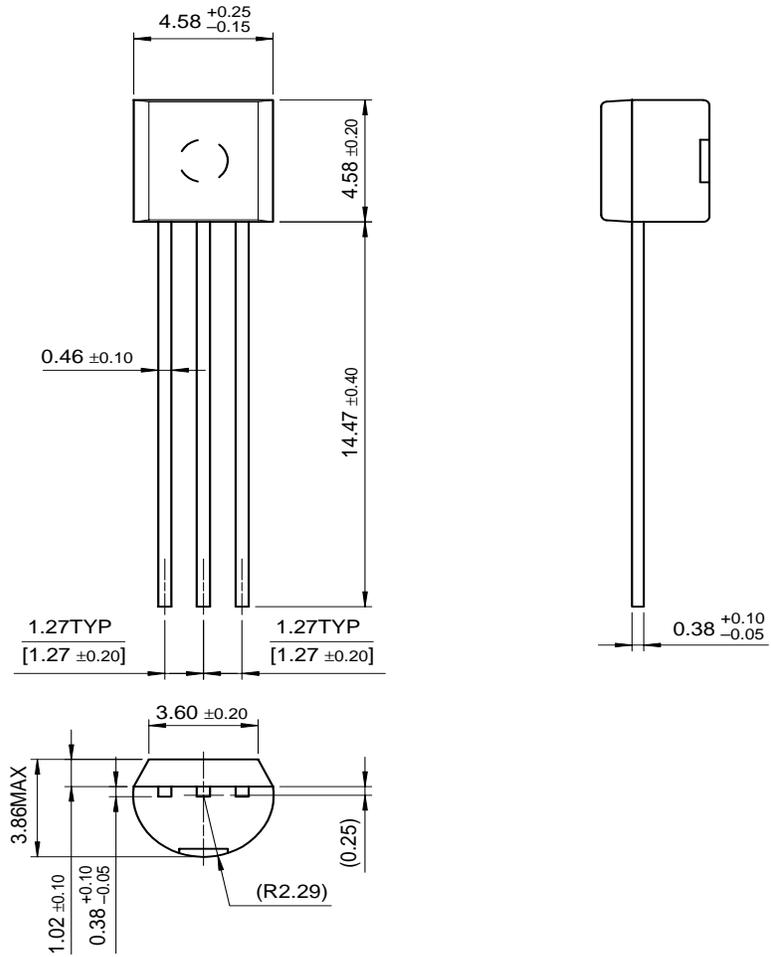


Figure 6. Current Gain Bandwidth Product

# Package Dimensions

KSC388

## TO-92



Dimensions in Millimeters

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