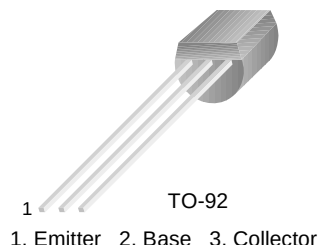


# KSC1009

KSC1009

## High Voltage Amplifier

- High Collector-Base Voltage :  $V_{CBO}=160V$
- Collector Current :  $I_C=700mA$
- Collector Power Dissipation :  $P_C=800mW$
- Complement to KSA709
- Suffix "-C" means Center Collector (1. Emitter 2. Collector 3. Base)



## NPN Epitaxial Silicon Transistor

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

| Symbol    | Parameter                   | Ratings   | Units       |
|-----------|-----------------------------|-----------|-------------|
| $V_{CBO}$ | Collector-Base Voltage      | 160       | V           |
| $V_{CEO}$ | Collector-Emitter Voltage   | 140       | V           |
| $V_{EBO}$ | Emitter-Base Voltage        | 8         | V           |
| $I_C$     | Collector Current           | 700       | mA          |
| $P_C$     | Collector Power Dissipation | 800       | mW          |
| $T_J$     | Junction Temperature        | 150       | $^{\circ}C$ |
| $T_{STG}$ | Storage Temperature         | -55 ~ 150 | $^{\circ}C$ |

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

| Symbol        | Parameter                            | Test Condition              | Min. | Typ. | Max. | Units   |
|---------------|--------------------------------------|-----------------------------|------|------|------|---------|
| $BV_{CBO}$    | Collector-Base Breakdown Voltage     | $I_C=100\mu A, I_E=0$       | 160  |      |      | V       |
| $BV_{CEO}$    | Collector-Emitter Breakdown Voltage  | $I_C=10mA, I_B=0$           | 140  |      |      | V       |
| $BV_{EBO}$    | Emitter-Base Breakdown Voltage       | $I_E=10\mu A, I_C=0$        | 8    |      |      | V       |
| $I_{CBO}$     | Collector Cut-off Current            | $V_{CB}=60V, I_E=0$         |      |      | 0.1  | $\mu A$ |
| $I_{EBO}$     | Emitter Cut-off Current              | $V_{EB}=5V, I_C=0$          |      |      | 0.1  | $\mu A$ |
| $h_{FE}$      | DC Current Gain                      | $V_{CE}=2V, I_C=50mA$       | 40   |      | 400  |         |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=200mA, I_B=20mA$       |      | 0.2  | 0.7  | V       |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C=200mA, I_B=20mA$       |      | 0.86 | 1.0  | V       |
| $f_T$         | Current Gain Bandwidth Product       | $V_{CE}=10V, I_C=50mA$      | 30   | 50   |      | MHz     |
| $C_{ob}$      | Output Capacitance                   | $V_{CB}=10V, I_E=0, f=1MHz$ |      | 8    |      | pF      |

## $h_{FE}$ Classification

| Classification | R       | O        | Y         | G         |
|----------------|---------|----------|-----------|-----------|
| $h_{FE}$       | 40 ~ 80 | 70 ~ 140 | 120 ~ 240 | 200 ~ 400 |

## Typical Characteristics

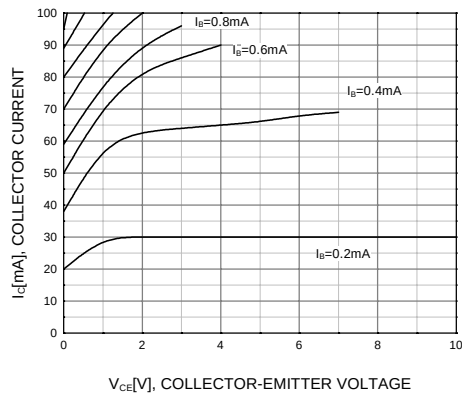


Figure 1. Static Characteristic

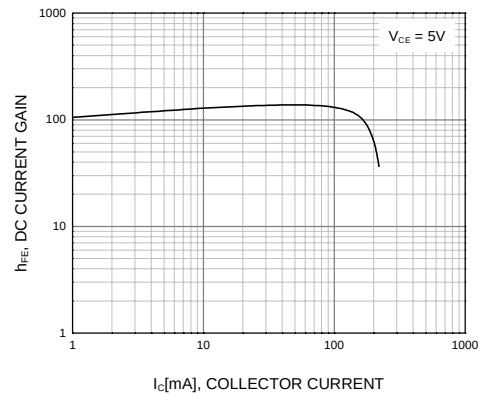


Figure 2. DC current Gain

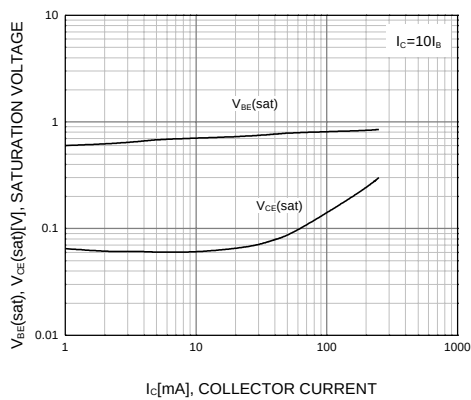


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

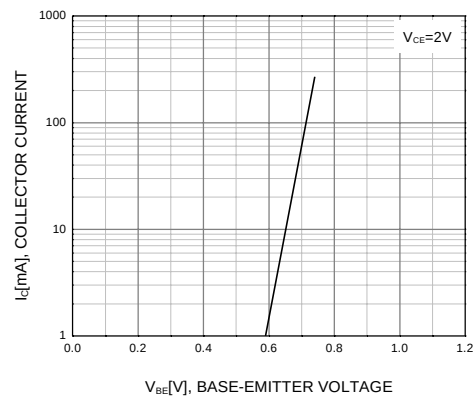


Figure 4. Base-Emitter On Voltage

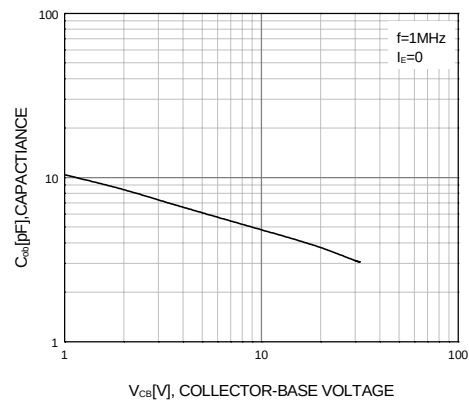
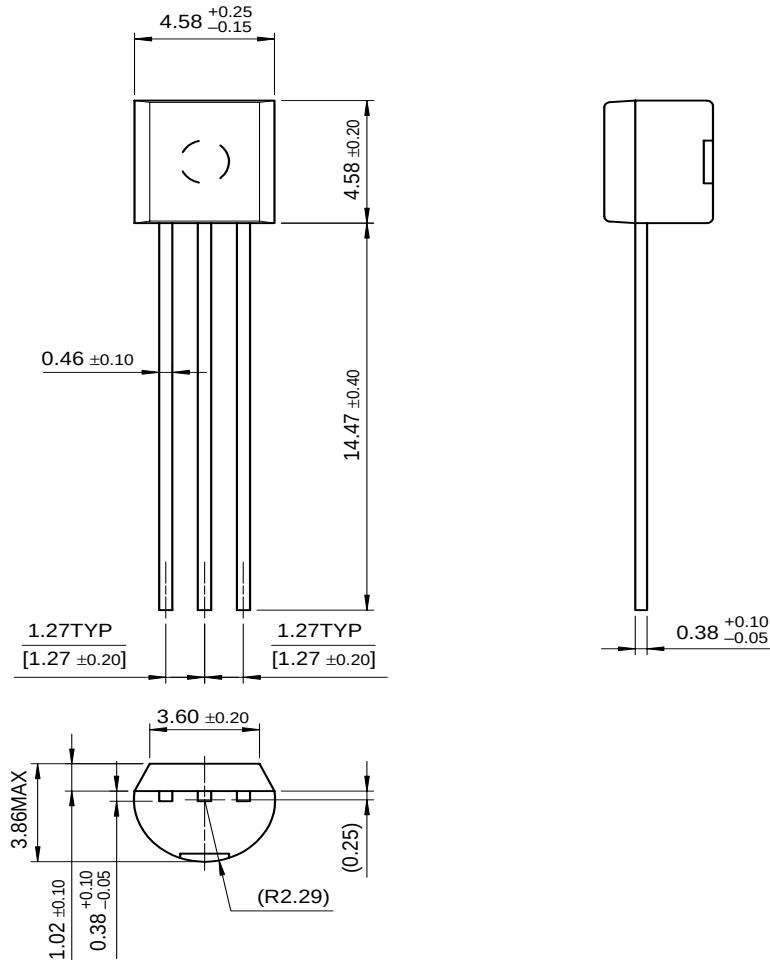


Figure 5. Collector Output Capacitance

# Package Dimensions

## TO-92



Dimensions in Millimeters

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| EnSigna™             | MicroFET™           | Quiet Series™       | UHC™            |
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| FACT Quiet Series™   | OPTOLOGIC™          | SMART START™        | VCX™            |

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