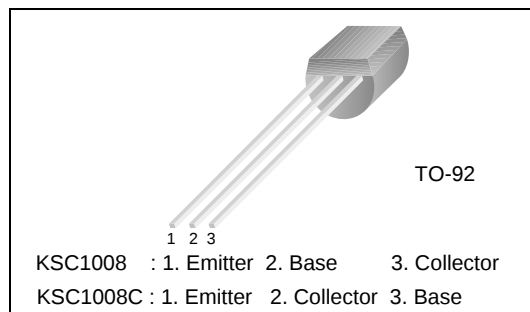


# KSC1008

## NPN Epitacial Silicon Transistor

### Features

- Low frequency amplifier medium speed switching.
- High Collector-Base Voltage :  $V_{CBO}=80V$ .
- Collector Current :  $I_C=700mA$
- Collector Power Dissipation :  $P_C=800mW$
- Suffix "-C" means Center Collector (1. Emitter 2. Collector 3. Base)
- Non suffix "-C" means Side Collector (1. Emitter 2. Base 3. Collector)
- Complement to KSA708



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

| Symbol    | Parameter                   | Value      | Units      |
|-----------|-----------------------------|------------|------------|
| $V_{CBO}$ | Collector-Base Voltage      | 80         | V          |
| $V_{CEO}$ | Collector-Emitter Voltage   | 60         | 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 | $^\circ C$ |

\* 1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

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

| Symbol        | Parameter                            | Test Condition              | Min. | Typ. | Max. | Units   |
|---------------|--------------------------------------|-----------------------------|------|------|------|---------|
| $BV_{CBO}$    | Collector-Base Breakdown Voltage     | $I_C=100\mu A, I_E=0$       | 80   |      |      | V       |
| $BV_{CEO}$    | Collector-Emitter Breakdown Voltage  | $I_C=10mA, I_B=0$           | 60   |      |      | 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 | $I_C=500mA, I_B=50mA$       |      | 0.2  | 0.4  | V       |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C=500mA, I_B=50mA$       |      | 0.86 | 1.1  | 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      |

\* DC Item are tested by Pulse Test: Pulse Width $\leq 300\mu s$ , Duty Cycle $\leq 2\%$

### $h_{FE}$ Classification

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

## Package Marking and Ordering Information

| Device <sup>(note)</sup> | Device Marking | Package | Packing Method | Qty(pcs) | Pin Definitions              |
|--------------------------|----------------|---------|----------------|----------|------------------------------|
| KSC1008COBU              | C1008OC        | TO-92   | BULK           | --       | 1.Emitter 2.Collector 3.Base |
| KSC1008COTA              | C1008OC        | TO-92   | TAPE & AMMO    | 2,000    | 1.Emitter 2.Collector 3.Base |
| KSC1008CYBU              | C1008YC        | TO-92   | BULK           | --       | 1.Emitter 2.Collector 3.Base |
| KSC1008CYTA              | C1008YC        | TO-92   | TAPE & AMMO    | 2,000    | 1.Emitter 2.Collector 3.Base |
| KSC1008GBU               | C1008G         | TO-92   | BULK           | --       | 1.Emitter 2.Base 3.Collector |
| KSC1008GTA               | C1008G         | TO-92   | TAPE & AMMO    | 2,000    | 1.Emitter 2.Base 3.Collector |
| KSC1008OBU               | C1008O         | TO-92   | BULK           | --       | 1.Emitter 2.Base 3.Collector |
| KSC1008OTA               | C1008O         | TO-92   | TAPE & AMMO    | 2,000    | 1.Emitter 2.Base 3.Collector |
| KSC1008RBU               | C1008R         | TO-92   | BULK           | --       | 1.Emitter 2.Base 3.Collector |
| KSC1008RTA               | C1008R         | TO-92   | TAPE & AMMO    | 2,000    | 1.Emitter 2.Base 3.Collector |
| KSC1008YBU               | C1008Y         | TO-92   | BULK           | --       | 1.Emitter 2.Base 3.Collector |
| KSC1008YTA               | C1008Y         | TO-92   | TAPE & AMMO    | 2,000    | 1.Emitter 2.Base 3.Collector |
| KSC1008YTf               | C1008Y         | TO-92   | TAPE & REEL    | 2,000    | 1.Emitter 2.Base 3.Collector |

Note : Affix "-C-" - center collector pin.  
 Affix "-R-, -O-, -Y-, -G-" -  $h_{FE}$  classification  
 Suffix "-BU" - Bulk packing, straight lead form.(see package dimensions)  
 Suffix "-TF" - Tape& Reel packing, 0.200 In-Line Spacing lead form. (see package dimensions)  
 Suffix "-TA" - Tape& AMMO packing, 0.200 In-Line Spacing lead form. (see package dimensions)

## Typical Characteristics

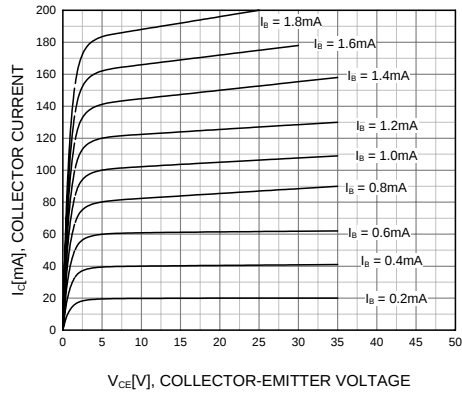


Figure 1. Static Characteristic

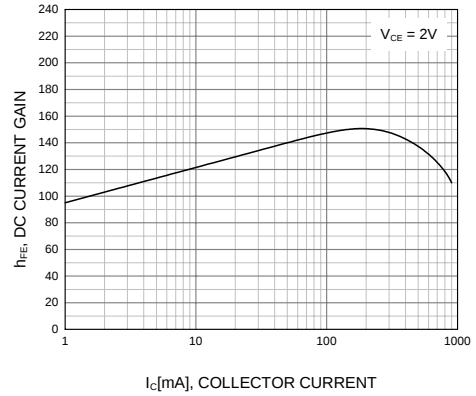


Figure 2. DC current Gain

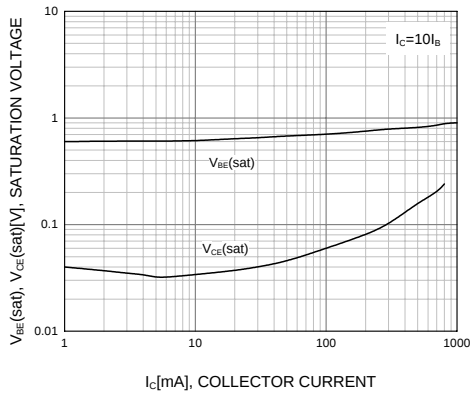


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

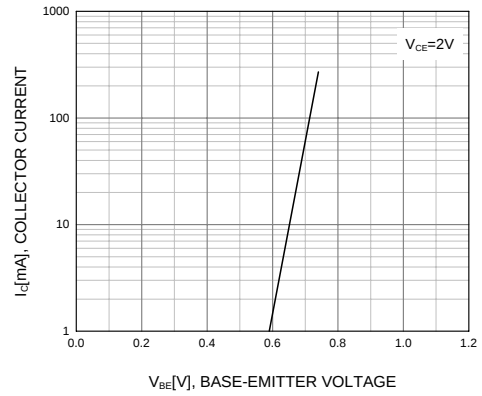


Figure 4. Base-Emitter On Voltage

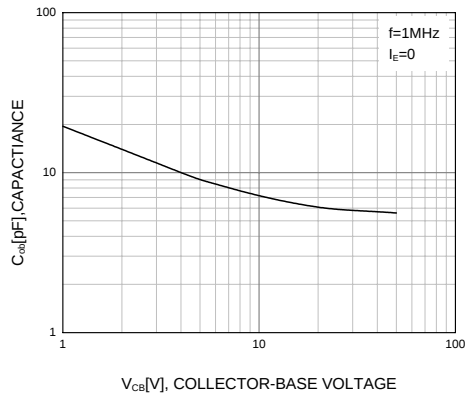
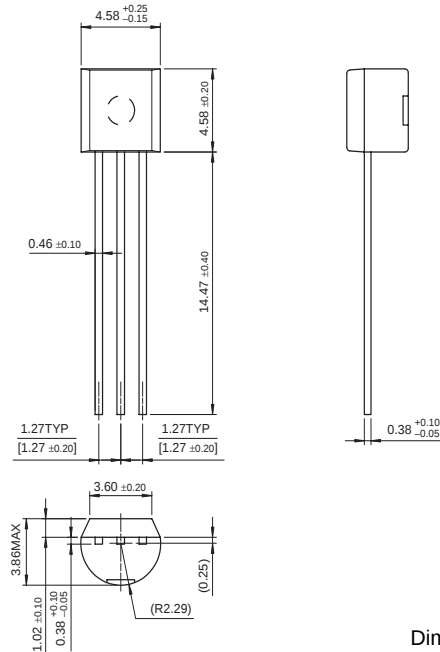


Figure 5. Collector Output Capacitance

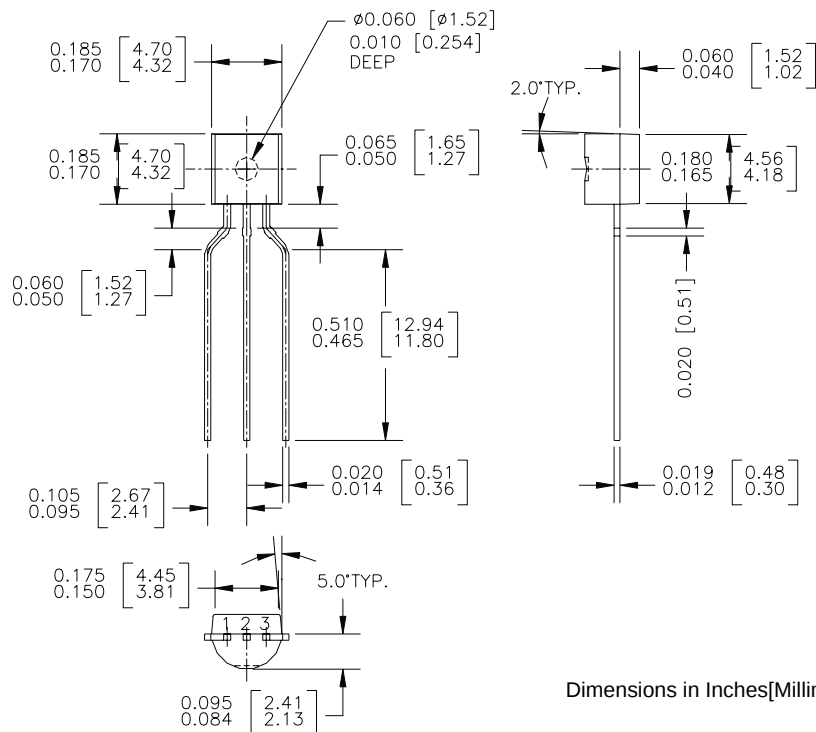
## Package Dimensions

### TO-92 Straight Lead Form



Dimensions in Millimeters

### TO-92 0.200 In-Line Spacing Lead Form



Dimensions in Inches[Millimeters]

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| DOME <sup>™</sup>                                | ImpliedDisconnect <sup>™</sup>  | Power247 <sup>™</sup>           | SuperSOT <sup>™</sup> -6     |                       |
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