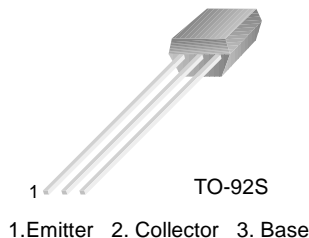


# KSA1378

KSA1378

## Low Frequency Power Amplifier

- Collector Power Dissipation :  $P_C = 300\text{mW}$
- Complement to KSC3488



## PNP Epitaxial Silicon Transistor

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

| Symbol    | Parameter                   | Ratings   | Units            |
|-----------|-----------------------------|-----------|------------------|
| $V_{CBO}$ | Collector-Base Voltage      | -30       | V                |
| $V_{CEO}$ | Collector-Emitter Voltage   | -25       | V                |
| $V_{EBO}$ | Emitter-Base Voltage        | -5        | V                |
| $I_C$     | Collector Current (DC)      | -300      | mA               |
| $I_{CP}$  | * Collector Current (Pulse) | -500      | mA               |
| $P_C$     | Collector Power Dissipation | 300       | mW               |
| $T_J$     | Junction Temperature        | 150       | $^\circ\text{C}$ |
| $T_{STG}$ | Storage Temperature         | -55 ~ 150 | $^\circ\text{C}$ |

\*  $PW \leq 10\text{ms}$ , Duty cycle  $\leq 50\%$

### 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       | $I_C = -100\mu\text{A}$ , $I_E = 0$          | -30  |       |      | V     |
| $BV_{CEO}$    | Collector-Emitter Breakdown Voltage    | $I_C = -10\text{mA}$ , $I_B = 0$             | -25  |       |      | V     |
| $BV_{EBO}$    | Emitter-Base Breakdown Voltage         | $I_E = -10\mu\text{A}$ , $I_C = 0$           | -5   |       |      | nA    |
| $I_{CBO}$     | Collector Cut-off Current              | $V_{CB} = -25\text{V}$ , $I_E = 0$           |      |       | -100 | mA    |
| $I_{EBO}$     | Emitter Cut-off Current                | $V_{EB} = -3\text{V}$ , $I_C = 0$            |      |       | -100 | nA    |
| $h_{FE}$      | * DC Current Gain                      | $V_{CE} = -1\text{V}$ , $I_C = -50\text{mA}$ | 70   |       | 400  |       |
| $V_{CE(sat)}$ | * Collector-Emitter Saturation Voltage | $I_C = -300\text{mA}$ , $I_B = -30\text{mA}$ |      | -0.35 | -0.6 | V     |

\* Pulse Test:  $PW \leq 350\mu\text{s}$ , Duty cycle  $\leq 2\%$

### $h_{FE}$ Classification

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

# Typical Characteristics

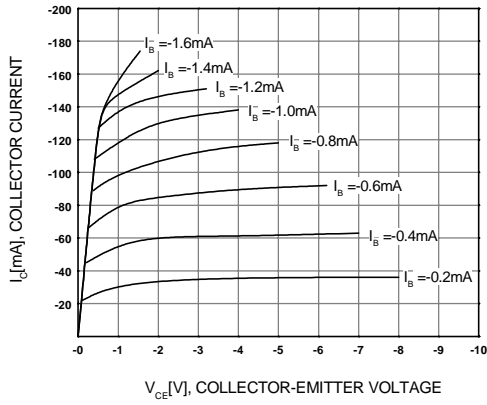


Figure 1. Static Characteristic

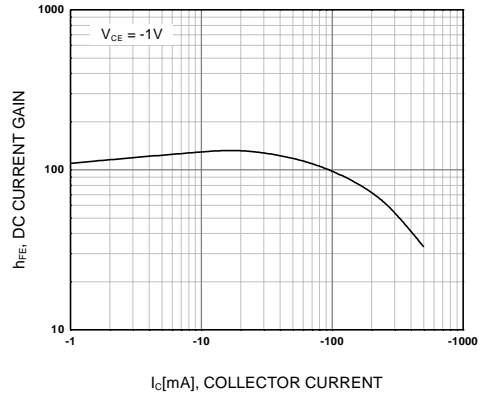


Figure 2. DC current Gain

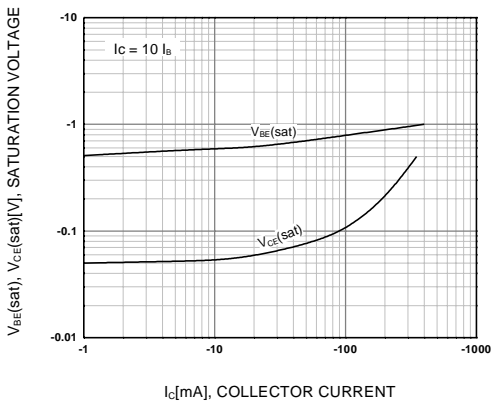


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

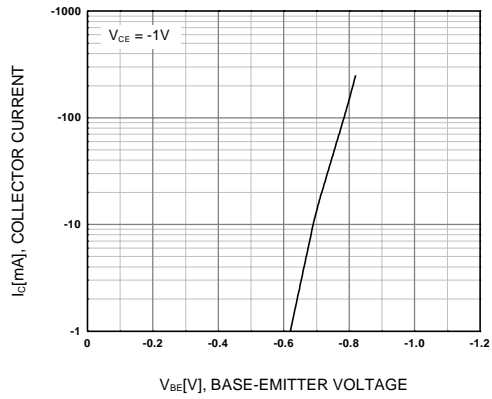


Figure 4. Base-Emitter On Voltage

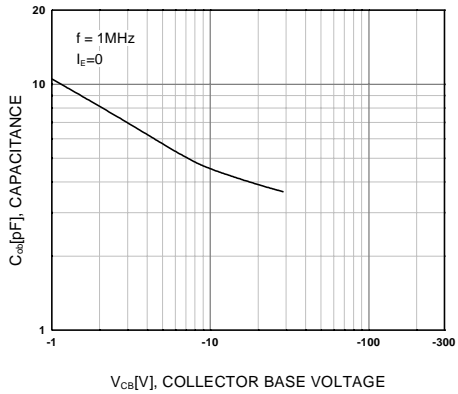
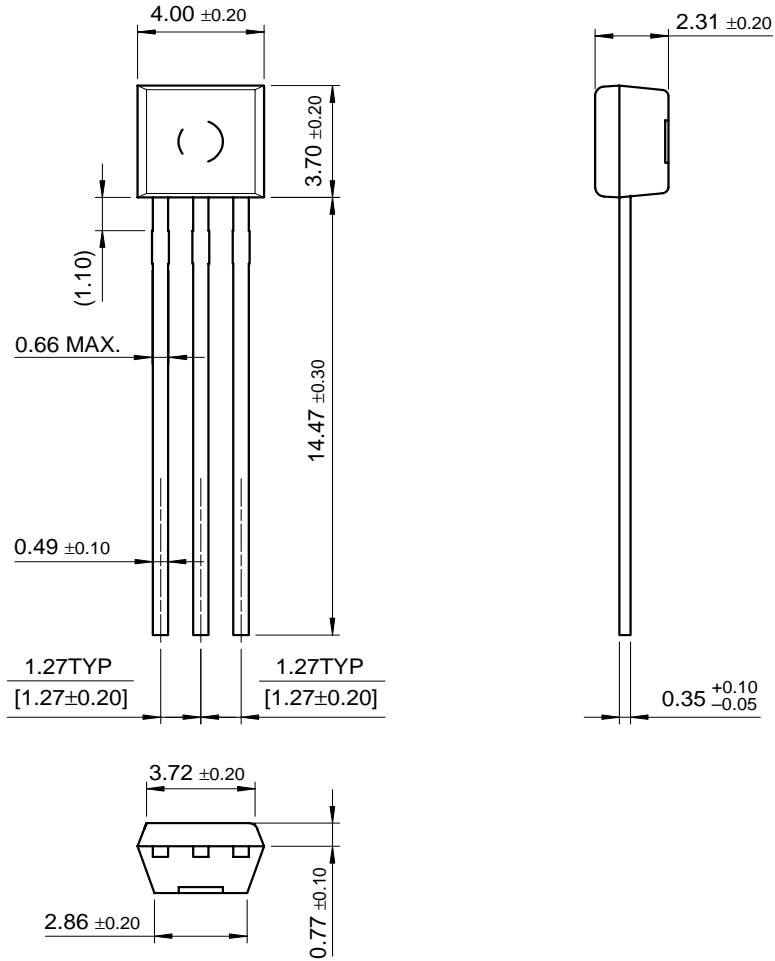


Figure 5. Collector Output Capacitance

# Package Dimensions

## TO-92S



Dimensions in Millimeters

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| DenseTrench™         | GTO™                | PowerTrench®        | SuperSOT™-8     |
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| EcoSPARK™            | ISOPLANAR™          | QS™                 | TruTranslation™ |
| E <sup>2</sup> CMOS™ | LittleFET™          | QT Optoelectronics™ | TinyLogic™      |
| EnSigna™             | MicroFET™           | Quiet Series™       | UHC™            |
| FACT™                | MICROWIRE™          | SLIENT SWITCHER®    | UltraFET®       |
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