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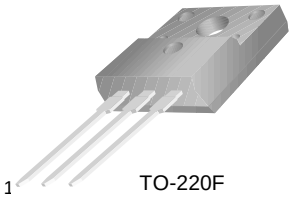
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FAIRCHILD
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# KSD2012

## Low Frequency Power Amplifier

- Complement to KSB1366



TO-220F

1.Base 2.Collector 3.Emitter

## NPN Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_C$=25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 60 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 60 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 7 | V |
| $I_C$ | Collector Current | 3 | A |
| $I_B$ | Base Current | 0.3 | A |
| $P_C$ | Collector Power Dissipation ($T_C$=25°C) | 25 | W |
| $T_J$ | Junction Temperature | 150 | °C |
| $T_{STG}$ | Storage Temperature | - 55 ~ 150 | °C |

### Electrical Characteristics $T_C$=25°C unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| $BV_{CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$ = 50mA, $I_B$ = 0 | 60 | | | V |
| $I_{CBO}$ | Collector Cut-off Current | $V_{CB}$ = 60V, $I_E$ = 0 | | | 100 | μA |
| $I_{EBO}$ | Emitter Cut-off Current | $V_{EB}$ = 7V, $I_C$ = 0 | | | 10 | μA |
| $h_{FE1}$<br>$h_{FE2}$ | DC Current Gain | $V_{CE}$ = 5V, $I_C$ = 0.5A<br>$V_{CE}$ = 5V, $I_C$ = 3A | 100<br>20 | | 320 | |
| $V_{CE}$(sat) | Collector-Emitter Saturation Voltage | $I_C$ = 2A, $I_B$ = 0.2A | | 0.4 | 1 | V |
| $V_{BE}$(on) | Base-Emitter ON Voltage | $V_{CE}$ = 5V, $I_C$ = 0.5A | | 0.7 | 1 | V |
| $f_T$ | Current Gain Bandwidth Product | $V_{CE}$ = 5V, $I_C$ = 0.5A | | 3 | | MHz |

### $h_{FE}$ Classification

| Classification | Y | G |
|---|---|---|
| $h_{FE1}$ | 100 ~ 200 | 150 ~ 320 |

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# Typical Characteristics

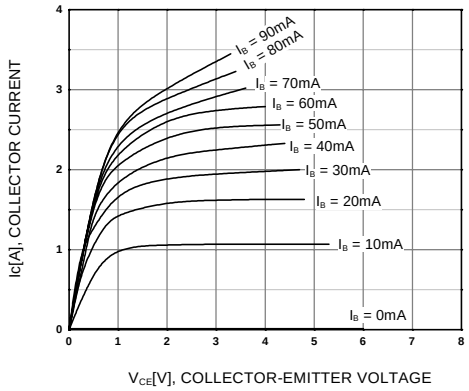



**Figure 1. Static Characteristic**

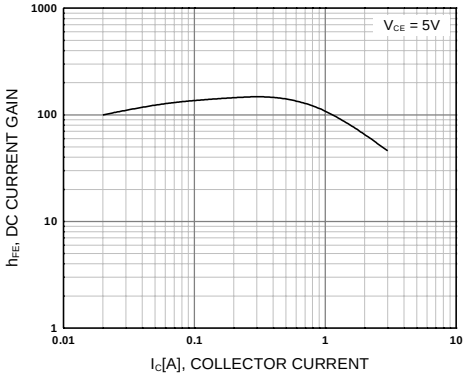



**Figure 2. DC current Gain**

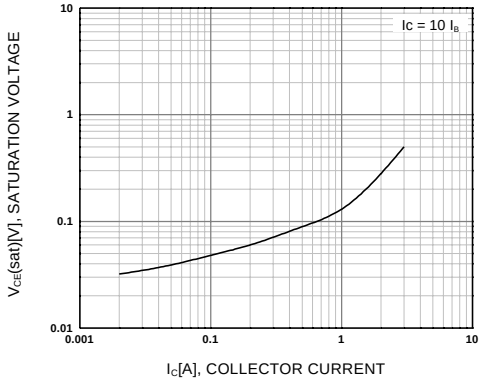



**Figure 3. Collector-Emitter Saturation Voltage**

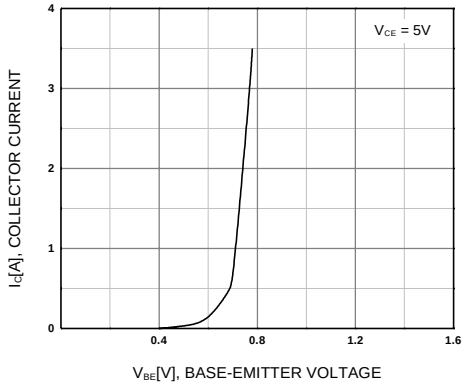



**Figure 4. Base-Emitter On Voltage**

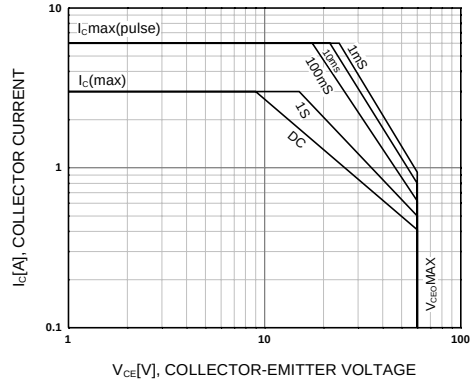



**Figure 5. Safe Operating Area**

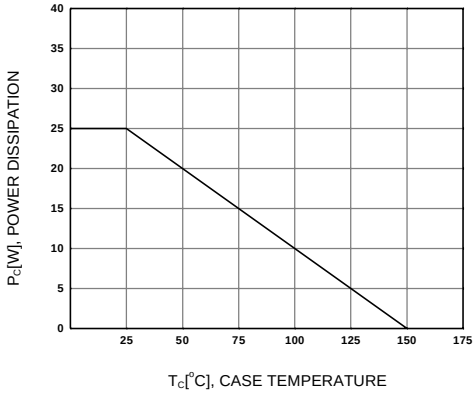
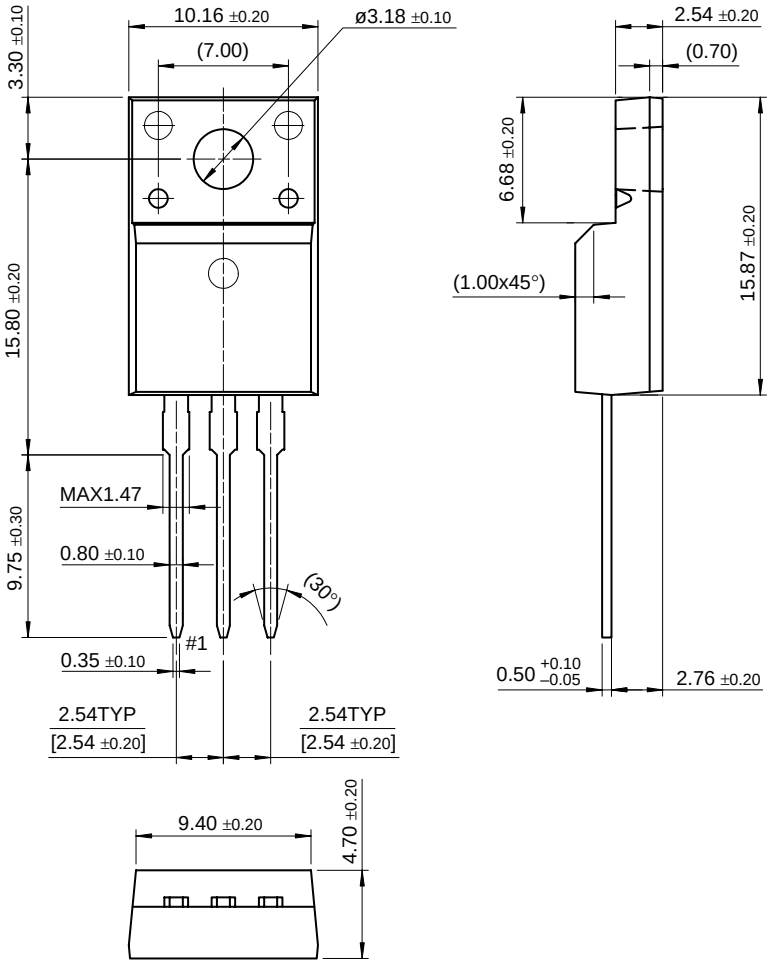



**Figure 6. Power Derating**

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## Package Demensions

TO-220F




Dimensions in Millimeters

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