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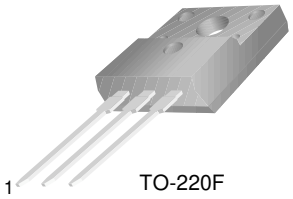
# KSD1588

## Low Frequency Power Amplifier

- Low Speed Switching
- Complement to KSB1097



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 | 100 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 60 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 7 | V |
| $I_C$ | Collector Current (DC) | 7 | A |
| $I_{CP}$ | *Collector Current (Pulse) | 15 | A |
| $I_B$ | Base Current | 3.5 | A |
| $P_C$ | Collector Dissipation ($T_a$=25°C) | 2 | W |
| $P_C$ | Collector Dissipation ($T_C$=25°C) | 30 | W |
| $T_J$ | Junction Temperature | 150 | °C |
| $T_{STG}$ | Storage Temperature | -55 ~ 150 | °C |

* PW≤300μs, Duty Cycle≤10%

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

| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|---|---|---|---|---|---|
| $I_{CBO}$ | Collector Cut-off Current | $V_{CB}$ = 80V, $I_E$ = 0 | | 10 | μA |
| $I_{EBO}$ | Emitter Cut-off Current | $V_{EB}$ = 5V, $I_C$ = 0 | | 10 | μA |
| $h_{FE1}$<br>$h_{FE2}$ | *DC Current Gain | $V_{CE}$ = 1V, $I_C$ = 3A<br>$V_{CE}$ = 1V, $I_C$ = 5A | 40<br>20 | 200 | |
| $V_{CE}$(sat) | *Collector-Emitter Saturation Voltage | $I_C$ = 5A, $I_B$ = 0.5A | | 0.5 | V |
| $V_{BE}$(sat) | *Base-Emitter Saturation Voltage | $I_C$ = 5A, $I_B$ = 0.5A | | 1.5 | V |

* Pulse Test: PW≤350μs, Duty Cycle≤2%

### $h_{FE1}$ Classification

| Classification | R | O | Y |
|---|---|---|---|
| $h_{FE1}$ | 40 ~ 80 | 80 ~ 120 | 100 ~ 200 |

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# Typical Characteristics

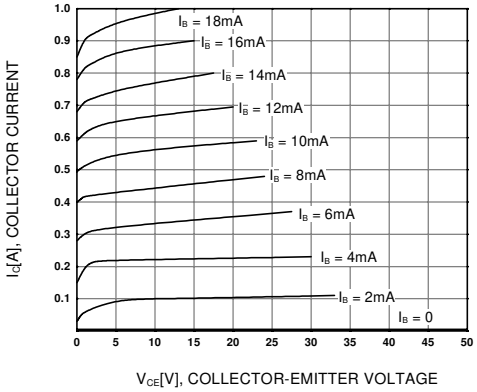


**Figure 1. Static Characteristic**

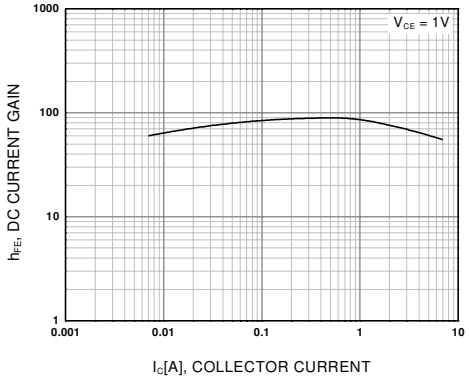


**Figure 2. DC current Gain**

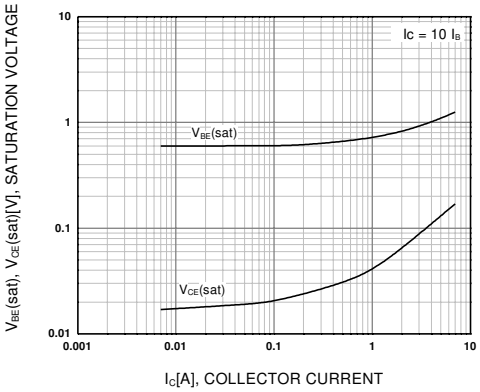


**Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage**

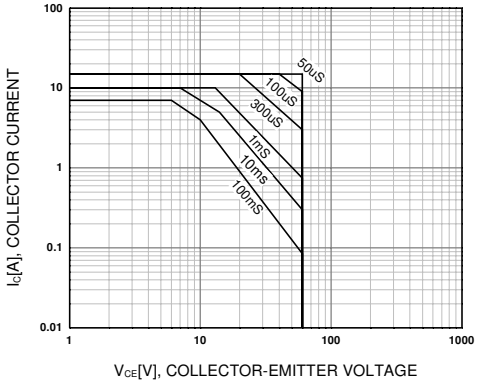


**Figure 4. Safe OPerating Area**

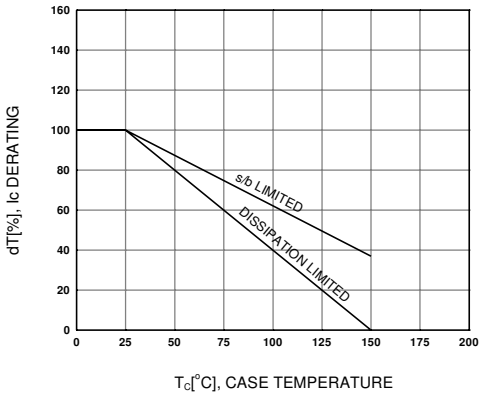


**Figure 5. Derating Curve Safe Operating Area**

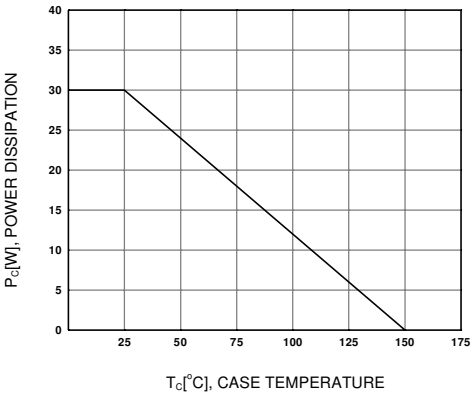


**Figure 6. Power Derating**

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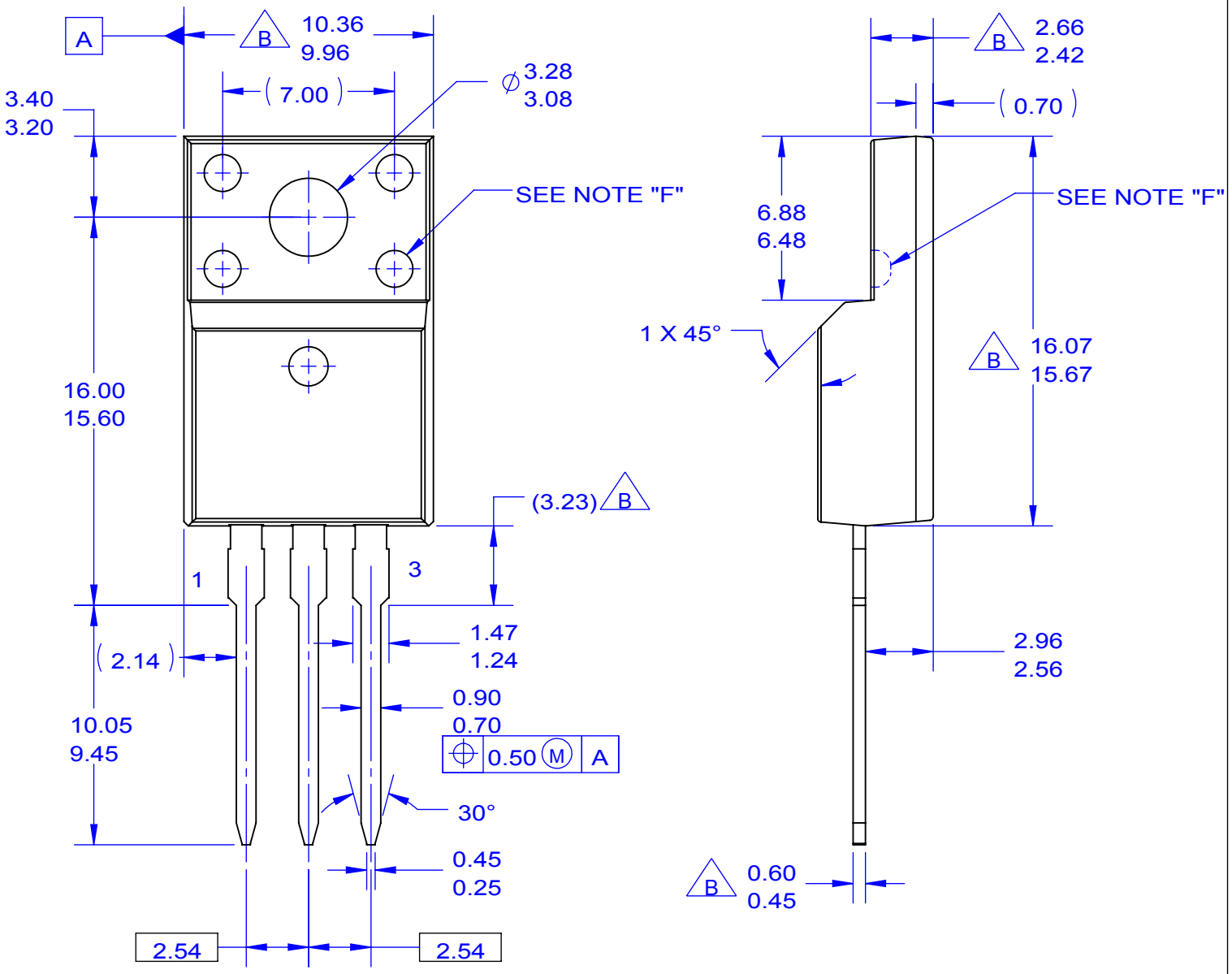


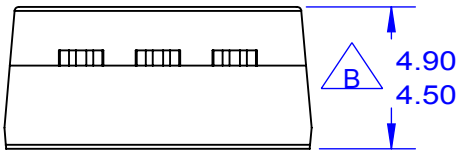


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