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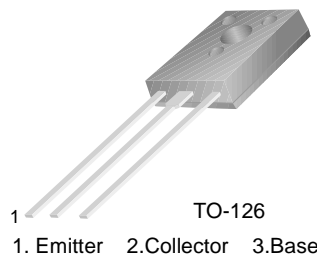
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KSC2690/2690A

Audio Frequency High Frequency Power Amplifier

- Complement to KSA1220/KSA1220A



NPN Epitaxial Silicon Transistor

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

| Symbol | Parameter | Value | Units |
|-----------|--|------------|------------------|
| V_{CB0} | Collector-Base Voltage | : KSC2690 | 120 |
| | | : KSC2690A | 160 |
| V_{CEO} | Collector- Emitter Voltage | : KSC2690 | 120 |
| | | : KSC2690A | 160 |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current (DC) | 1.2 | A |
| I_{CP} | *Collector Current (Pulse) | 2.5 | A |
| I_B | Base Current(DC) | 0.3 | A |
| P_C | Collector Dissipation ($T_a=25^\circ\text{C}$) | 1.2 | W |
| P_C | Collector Dissipation ($T_C=25^\circ\text{C}$) | 20 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | - 55 ~ 150 | $^\circ\text{C}$ |

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

Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|------------------------|--|---|----------|------------|------|---------------|
| I_{CB0} | Collector Cut-off Current | $V_{CB} = 120\text{V}$, $I_E = 0$ | | | 1 | μA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB} = 3\text{V}$, $I_C = 0$ | | | 1 | μA |
| h_{FE1} h_{FE2} | * DC Current Gain | $V_{CE} = 5\text{V}$, $I_C = 5\text{mA}$ $V_{CE} = 5\text{V}$, $I_C = 0.3\text{A}$ | 35 60 | 105 140 | 320 | |
| $V_{CE(sat)}$ | * Collector-Emitter Saturation Voltage | $I_C = 1\text{A}$, $I_B = 0.2\text{A}$ | | 0.4 | 0.7 | V |
| $V_{BE(sat)}$ | * Base-Emitter Saturation Voltage | $I_C = 1\text{A}$, $I_B = 0.2\text{A}$ | | 1 | 1.3 | V |
| f_T | Current Gain Bandwidth Product | $V_{CE} = 5\text{V}$, $I_C = 0.2\text{A}$ | | 155 | | MHz |
| C_{ob} | Output Capacitance | $V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$ | | 19 | | pF |

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

h_{FE} Classification

| Classification | R | O | Y |
|----------------|----------|-----------|-----------|
| h_{FE2} | 60 ~ 120 | 100 ~ 200 | 160 ~ 320 |

Typical Characteristics

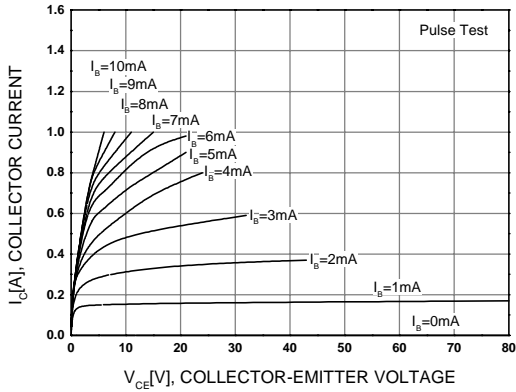


Figure 1. Static Characteristic

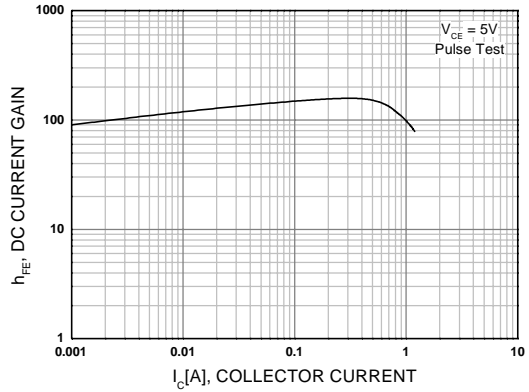


Figure 2. DC current Gain

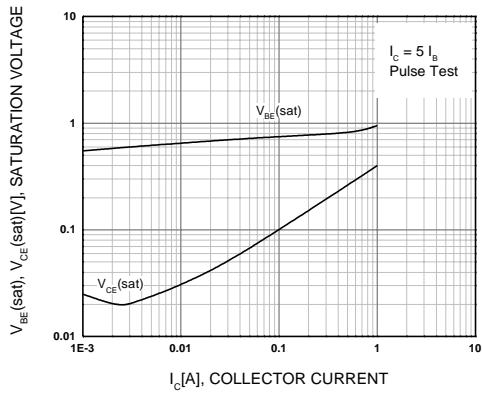


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

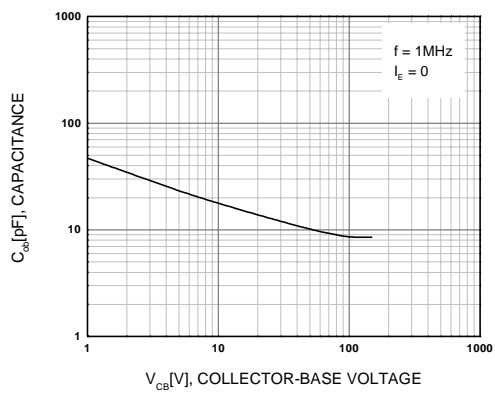


Figure 4. Collector Output Capacitance

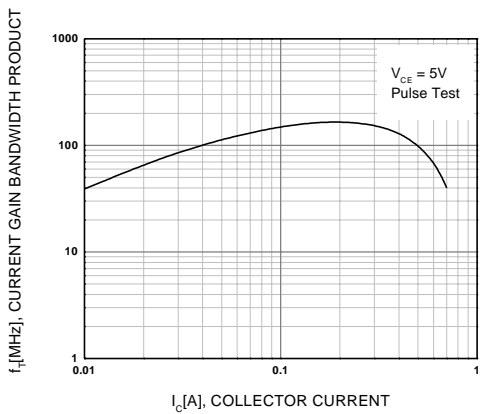


Figure 5. Current Gain Bandwidth Product

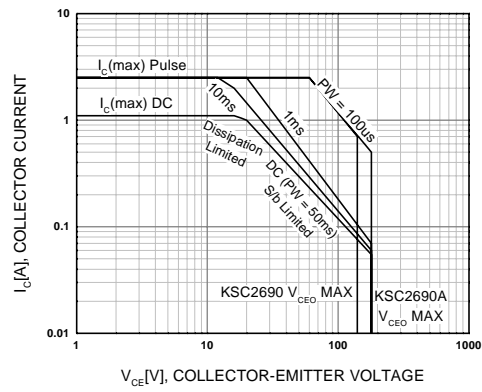


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

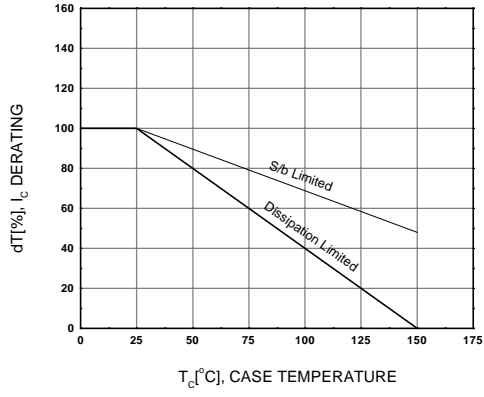


Figure 7. Derating Curve of Safe Operating Areas

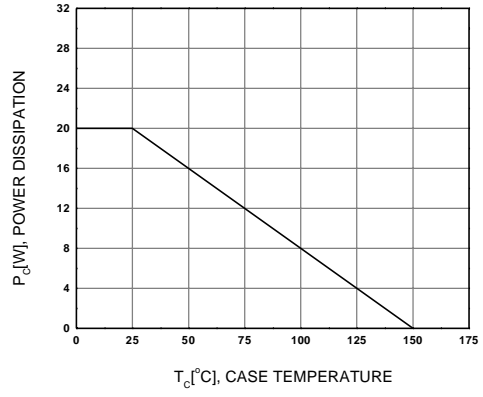
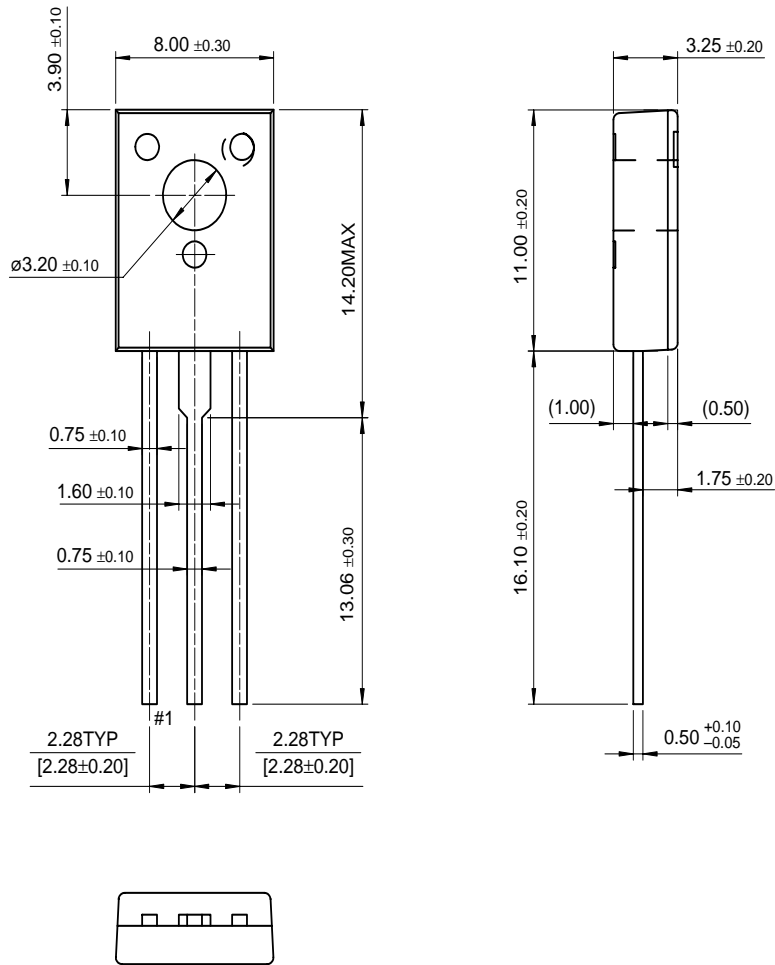


Figure 8. Power Derating

Package Dimensions

KSC2690/2690A

TO-126



Dimensions in Millimeters

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