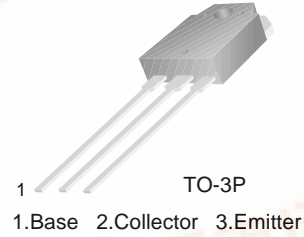


FAIRCHILD
SEMICONDUCTOR™

KSC5242

Audio Power Amplifier

- High Current Capability : $I_C=15A$
- High Collector Breakdown Voltage : $V_{CEO}=230V$ (Min.)
- High Power Dissipation
- Wide S.O.A
- Complement to KSA1962



NPN Epitaxial Silicon Transistor

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

| Symbol | Parameter | Value | Units |
|-----------|--|------------|------------|
| V_{CBO} | Collector-Base Voltage | 230 | V |
| V_{CEO} | Collector-Emitter Voltage | 230 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current(DC) | 10 | A |
| I_B | Base Current | 1.5 | A |
| P_C | Collector Dissipation ($T_C=25^\circ C$) | 100 | W |
| T_J | Junction Temperature | 150 | $^\circ C$ |
| T_{STG} | Storage Temperature | - 50 ~ 150 | $^\circ C$ |

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

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|---------------|--------------------------------------|---------------------------|------|------|------|---------|
| BV_{CBO} | Collector-Base Breakdown Voltage | $I_C=5mA, I_E=0$ | 230 | | | V |
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C=10mA, R_{BE}=\infty$ | 230 | | | V |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E=5mA, I_C=0$ | 5 | | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB}=230V, I_E=0$ | | | 5.0 | μA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB}=5V, I_C=0$ | | | 5.0 | μA |
| h_{FE1} | * DC Current Gain | $V_{CE}=5V, I_C=1A$ | 55 | | 160 | |
| h_{FE2} | DC Current Gain | $V_{CE}=5V, I_C=7A$ | 35 | 60 | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=8A, I_B=0.8A$ | | 0.4 | 3.0 | V |
| $V_{BE(on)}$ | Base-Emitter ON Voltage | $V_{CE}=5V, I_C=7A$ | | 1.0 | 1.5 | V |
| f_T | Current Gain Bandwidth Product | $V_{CE}=5V, I_C=1A$ | | 30 | | MHz |
| C_{ob} | Output Capacitance | $V_{CB}=10V, f=1MHz$ | | 200 | | pF |

* Pulse Test : $PW=20\mu s$

h_{FE} Classification

| Classification | R | O |
|----------------|----------|----------|
| h_{FE1} | 55 ~ 110 | 80 ~ 160 |

Typical Characteristics

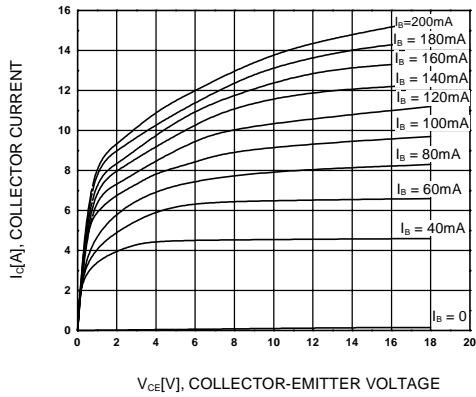


Figure 1. Static Characteristic

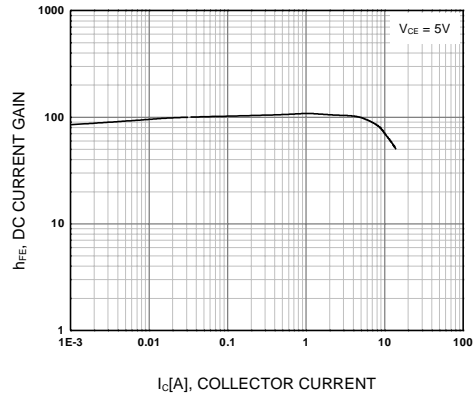


Figure 2. DC current Gain

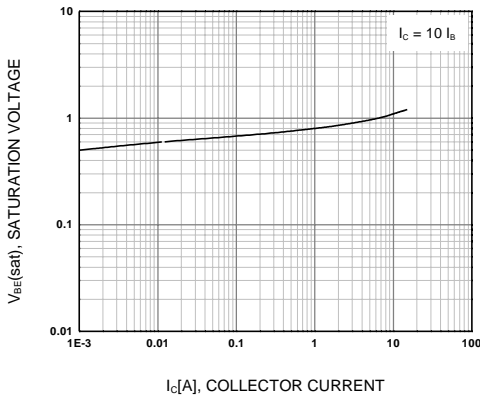


Figure 3. Base-Emitter Saturation Voltage

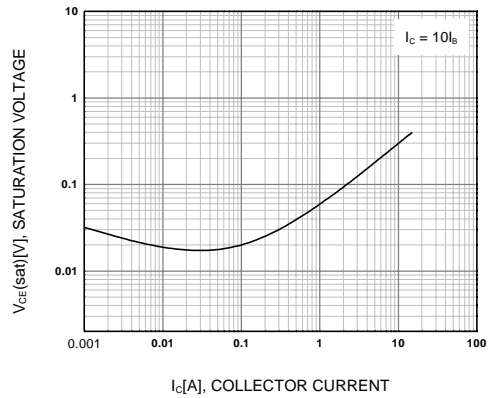


Figure 4. Collector-Emitter Saturation Voltage

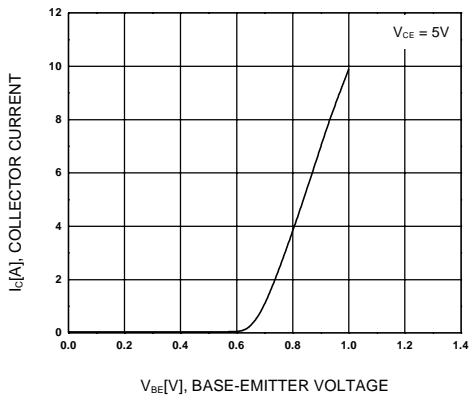


Figure 5. Base-Emitter On Voltage

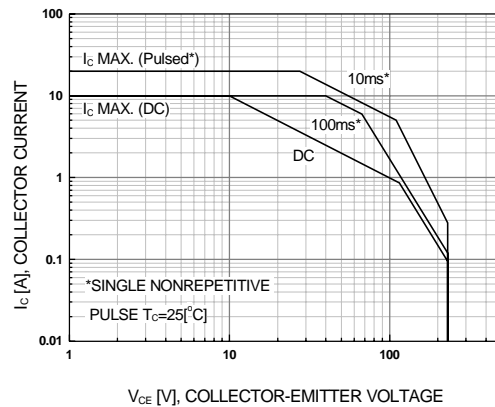


Figure 6. Safe Operating Area

Typical Characteristics (Continued)

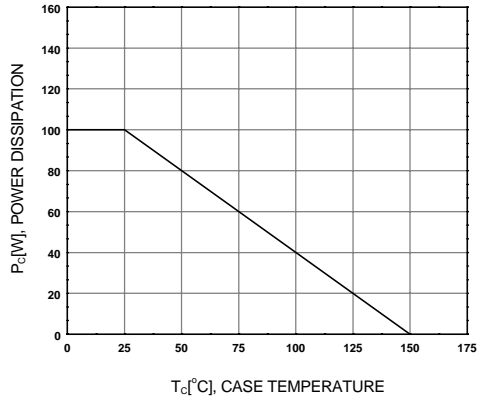
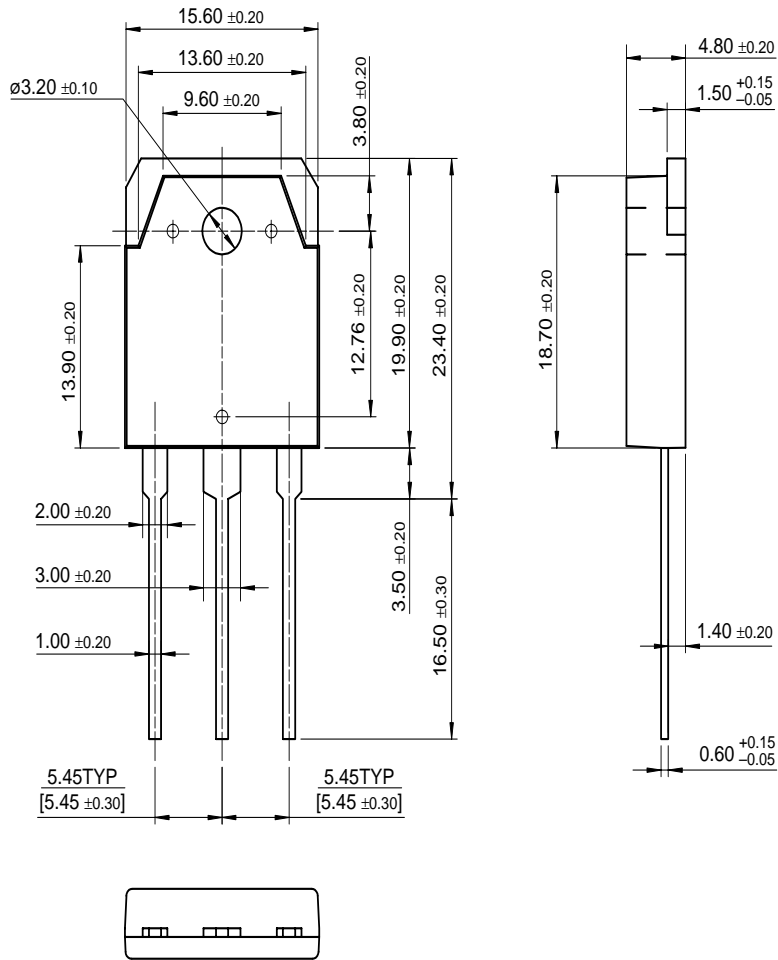


Figure 7. Power Derating

Package Dimensions

KSC5242

TO-3P



Dimensions in Millimeters

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| | | |
|----------------------|---------------|-------------|
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| CoolFET™ | MICROWIRE™ | TinyLogic™ |
| CROSSVOLT™ | POPT™ | UHC™ |
| E ² CMOS™ | PowerTrench® | VCX™ |
| FACT™ | QFET™ | |
| FACT Quiet Series™ | QST™ | |
| FAST® | Quiet Series™ | |
| FASTr™ | SuperSOT™-3 | |
| GTO™ | SuperSOT™-6 | |

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|--------------------------|------------------------|---|
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