

Transistors

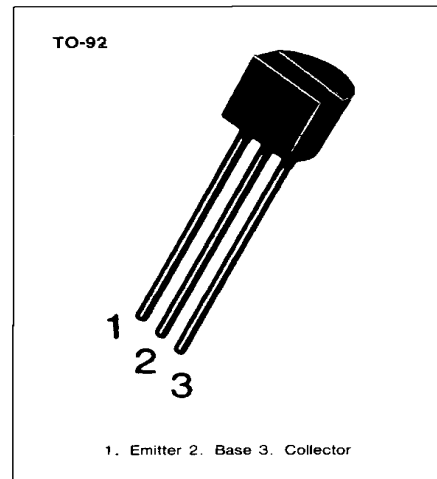
USP8098

AMPLIFIER TRANSISTOR

- Collector Dissipation: P_C (max)=625mW

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

| Characteristic | Symbol | Rating | Unit |
|---------------------------|-----------|---------|------------------|
| Collector-Base Voltage | V_{CBO} | 60 | V |
| Collector-Emitter Voltage | V_{CEO} | 60 | V |
| Emitter-Base Voltage | V_{EBO} | 6 | V |
| Collector Current | I_C | 500 | mA |
| Collector Dissipation | P_C | 625 | mW |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -55~150 | $^\circ\text{C}$ |



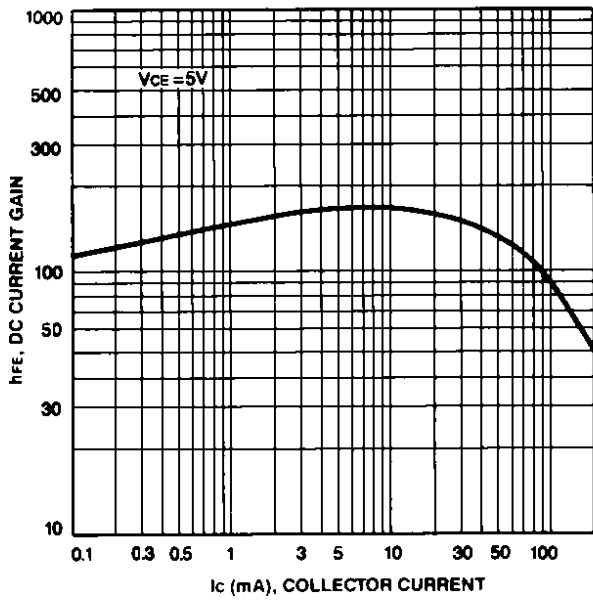
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

| Characteristic | Symbol | Test Conditions | Min | Max | Unit |
|--------------------------------------|----------------------|--|-----|-----|------|
| Collector-Base Breakdown Voltage | BV_{CBO} | $I_C=100\mu\text{A}, I_E=0$ | 60 | | V |
| *Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C=10\text{mA}, I_B=0$ | 60 | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E=10\mu\text{A}, I_C=0$ | 6 | | V |
| Collector Cut-off Current | I_{CBO} | $V_{CB}=60\text{V}, I_E=0$ | | 100 | nA |
| Collector Cut-off Current | I_{CEO} | $V_{CE}=60\text{V}, I_B=0$ | | 100 | nA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB}=6\text{V}, I_C=0$ | | 100 | nA |
| DC Current Gain | h_{FE} | $V_{CE}=5\text{V}, I_C=1\text{mA}$ | 100 | 300 | |
| | | $V_{CE}=5\text{V}, I_C=10\text{mA}$ | 100 | | |
| | | $V_{CE}=5\text{V}, I_C=100\text{mA}$ | 75 | | |
| Collector-Emitter Saturation Voltage | $V_{CE}(\text{sat})$ | $I_C=100\text{mA}, I_B=5\text{mA}$ | | 0.4 | V |
| | | $I_C=100\text{mA}, I_B=10\text{mA}$ | | 0.3 | V |
| *Base-Emitter On Voltage | $V_{BE}(\text{on})$ | $V_{CE}=5\text{V}, I_C=1\text{mA}$ | 0.5 | 0.7 | V |
| Current Gain Bandwidth Product | f_T | $V_{CE}=5\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$ | 150 | | MHz |
| Output Capacitance | C_{OB} | $V_{CB}=5\text{V}, I_E=0$ $f=1\text{MHz}$ | | 6 | pF |

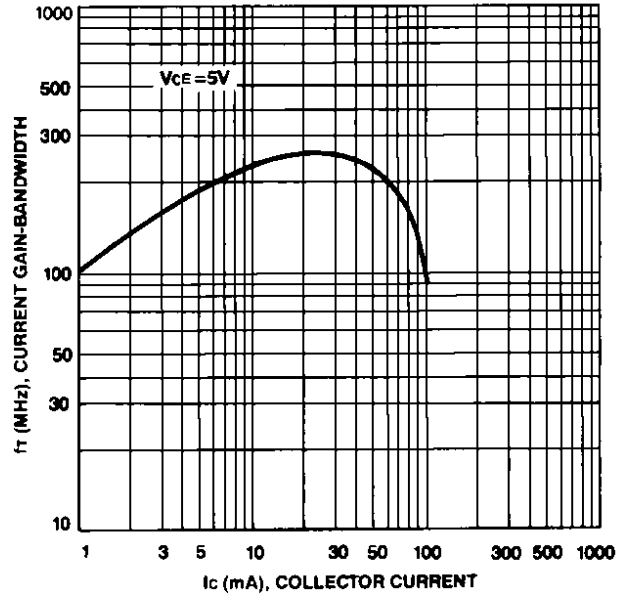
*Pulse Test: $PW=300\mu\text{s}$, Duty Cycle=2%



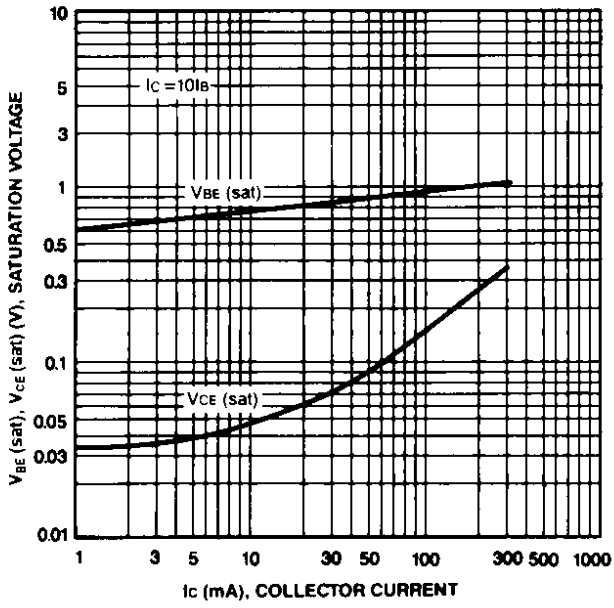
DC CURRENT GAIN



CURRENT GAIN-BANDWIDTH PRODUCT



**COLLECTOR-EMITTER SATURATION VOLTAGE
BASE-EMITTER SATURATION VOLTAGE**



OUTPUT CAPACITANCE

