

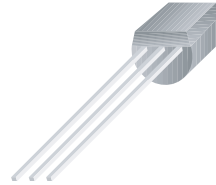
**PNP SILICON PLANAR EPITAXIAL
HIGH VOLTAGE VIDEO TRANSISTORS**
High Voltage Video Amplifier

Darlington Transistor

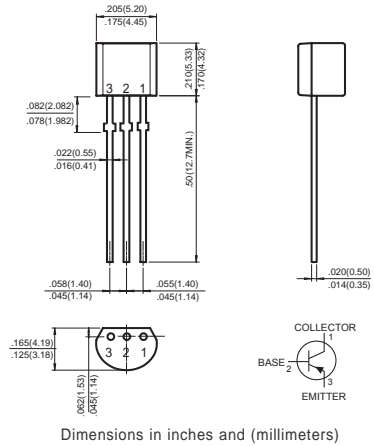
* Power Dissipation: $P_D=625\text{mW}$

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.



TO-18



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

| DESCRIPTION | SYMBOL | BF491 | BF492 | BF493 | UNITS |
|--|----------------|-------|--------------|-------|-------------|
| Collector-Emitter Voltage | V_{CE0} | 200 | 250 | 300 | Volts |
| Collector Base Voltage | V_{CB0} | 200 | 250 | 300 | Volts |
| Emitter Base Voltage | V_{EB0} | 6 | 8 | 8 | Volts |
| Collector Current Continuous | I_C | | 500 | | mAmps |
| Total Device Dissipation @ $T_A=25\text{ }^\circ\text{C}$ Derate Above 25°C | P_D | | 625 1.2 | | mW mW/°C |
| Total Device Dissipation @ $T_C=25\text{ }^\circ\text{C}$ Derate Above 25°C | P_D | | 1500 12 | | mW mW/°C |
| Operating And Storage Junction Temperature Range | T_J, T_{STG} | | -55 to + 150 | | °C |

ELECTRICAL CHARACTERISTICS $T_A=25\text{ }^\circ\text{C}$ unless otherwise noted

| DESCRIPTION | Test Condition | SYMBOL | BF491 | BF492 | BF493 | UNITS |
|--------------------------------------|---|---------------|------------|------------|------------|---------------|
| Collector-Base Breakdown Voltage | $I_C=0.1\text{ mA}, I_E=0$ | BV_{CB0} | >200 | >250 | >300 | Volts |
| Collector-Emitter Breakdown Voltage | $I_C=1\text{ mA}, I_B=0$ | BV_{CE0}^* | >200 | >250 | >300 | Volts |
| Emitter-Base Breakdown Voltage | $I_E=100\text{ }\mu\text{A}, I_C=0$ | BV_{EB0} | >6.0 | >8.0 | >8.0 | Volts |
| Collector Cutoff Current | $V_{CB}=160\text{ V}, I_E=0$ $V_{CB}=200\text{ V}, I_E=0$ | I_{CB0} | <0.1 | <0.1 | <0.1 | μA |
| Emitter Cutoff Current | $V_{EB}=4.0\text{ V}, I_C=0$ $V_{EB}=6.0\text{ V}, I_C=0$ | I_{EB0} | <0.1 | <0.1 | <0.1 | μA |
| DC Current Gain | $I_C=1\text{ mA}, V_{CE}=10\text{ V}$ $I_C=10\text{ mA}, V_{CE}=10\text{ V}$ | h_{FE} | >25 >40 | >25 >40 | >25 >40 | |
| Collector-Emitter Saturation Voltage | $I_C=20\text{ mA}, I_B=2\text{ mA}$ | $V_{CE(sat)}$ | <2 | <2 | <2 | Volts |
| Base-Emitter Saturation Voltage | $I_C=20\text{ mA}, I_B=2\text{ mA}$ | $V_{BE(sat)}$ | <2 | <2 | <2 | Volts |

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

| DESCRIPTION | SYMBOL | TEST CONDITION | BF491 | BF492 | BF493 | UNITS |
|--------------------------------|----------|--|-------|-------|-------|-------|
| Current Gain-Bandwidth Product | f_T | $I_C=10\text{mA}$, $V_{CE}=20\text{V}$, $f=20\text{MHz}$ | >50 | >50 | >50 | MHz |
| Feedback Capacitance | C_{re} | $V_{CB}=100\text{V}$, $f=1\text{MHz}$, $I_E=0$ | <2 | <2 | <2 | pF |

*Pulse Condition: = Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

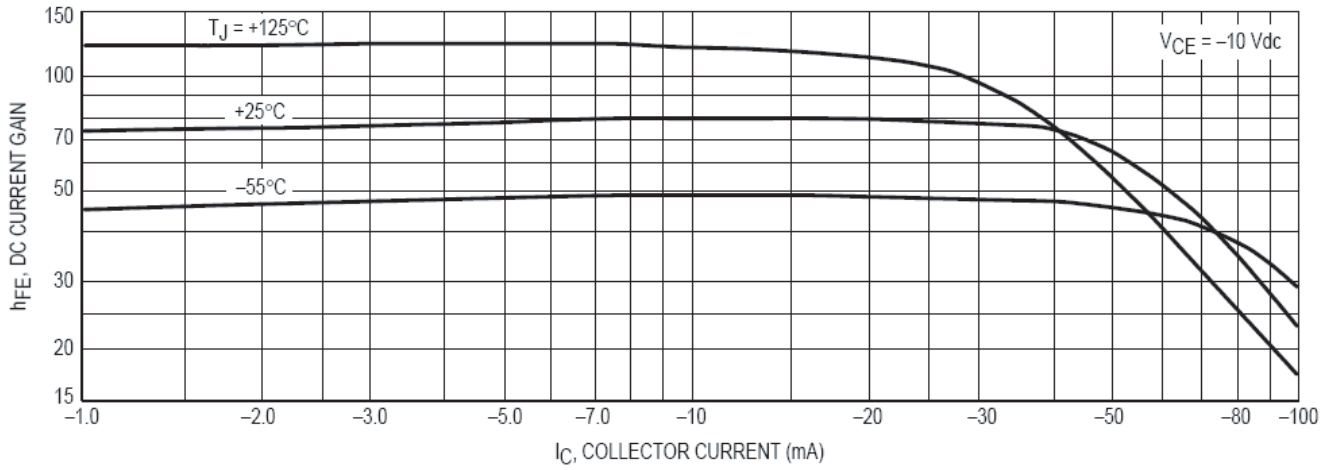


Figure 1. DC Current Gain

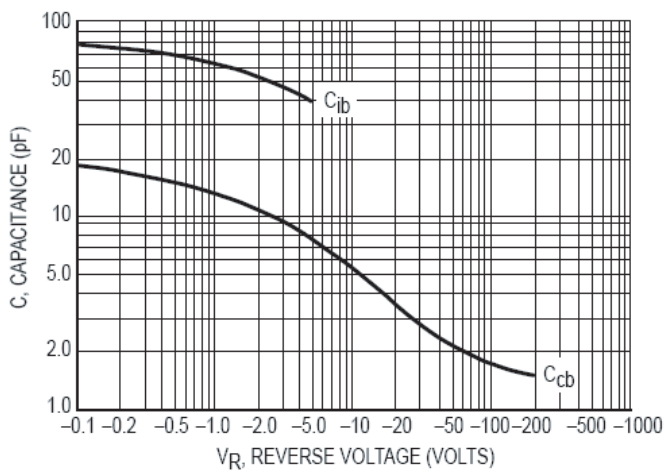


Figure 2. Capacitances

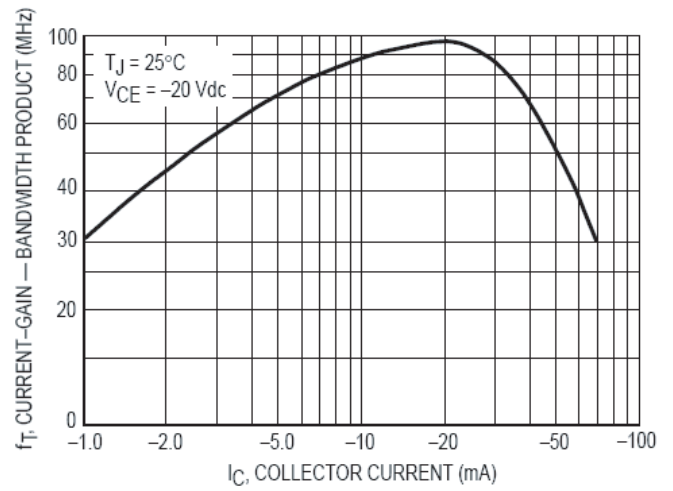


Figure 3. Current-Gain — Bandwidth Product

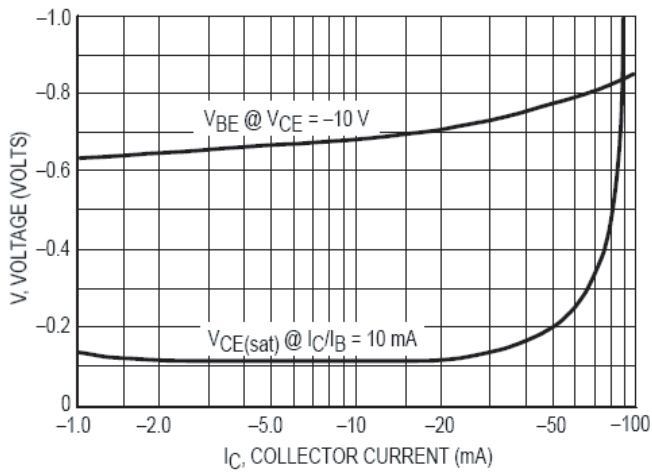


Figure 4. "On" Voltages

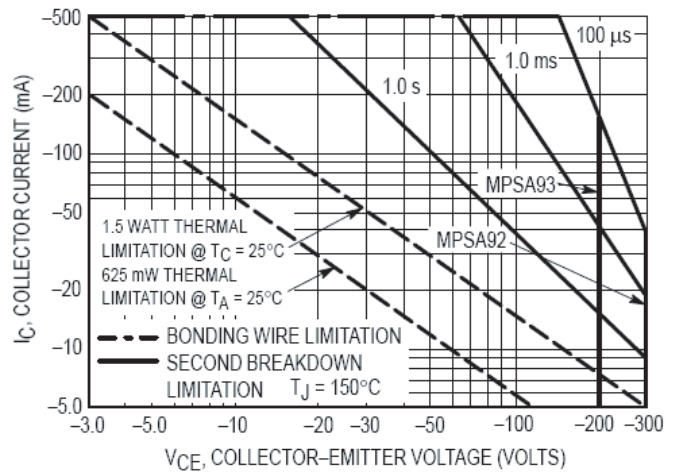


Figure 5. Active Region — Safe Operating Area

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