

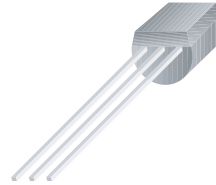
**PNP SILICON PLANAR EPITAXIAL
HIGH VOLTAGE VIDEO TRANSISTORS**
High Voltage Video Amplifier

Darlington Transistor

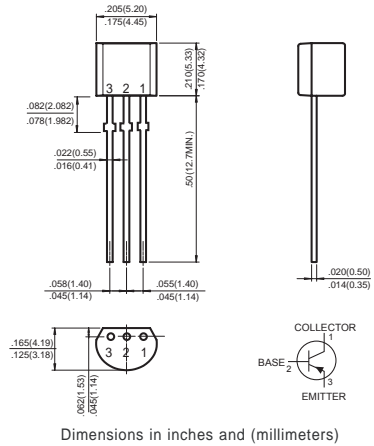
* Power Dissipation: $P_D=625\text{mW}$

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.



TO-92



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	$I_E=100\text{ uA}, I_C=0$	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	uA
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	uA
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 $\leq 2.0\%$.

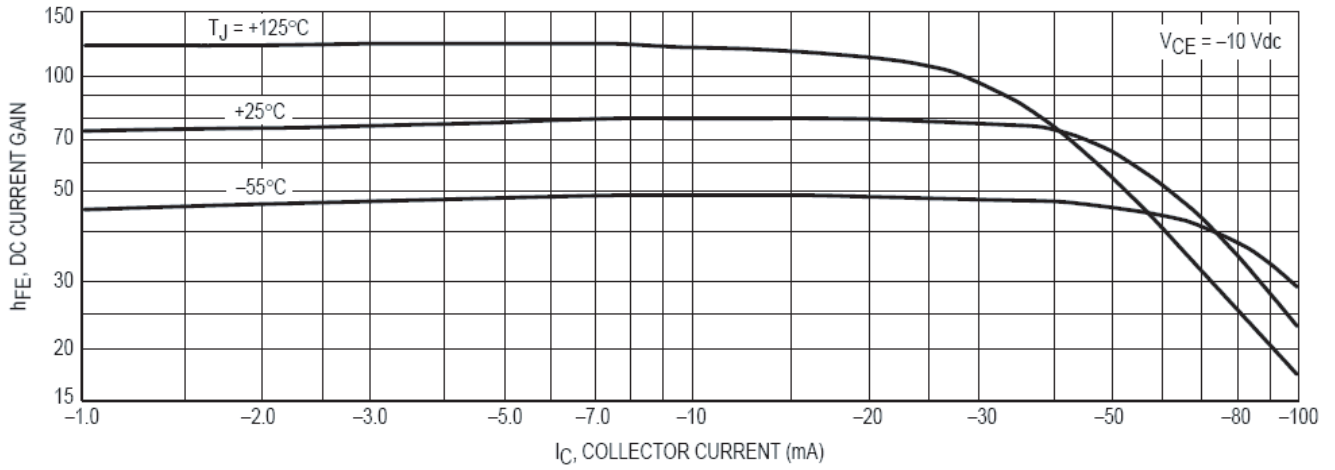


Figure 1. DC Current Gain

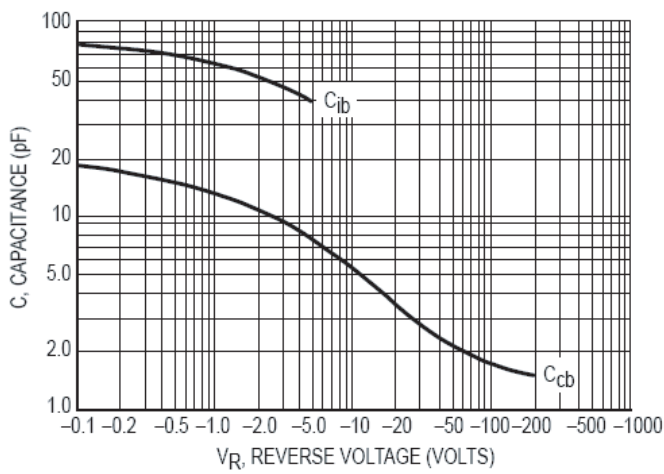


Figure 2. Capacitances

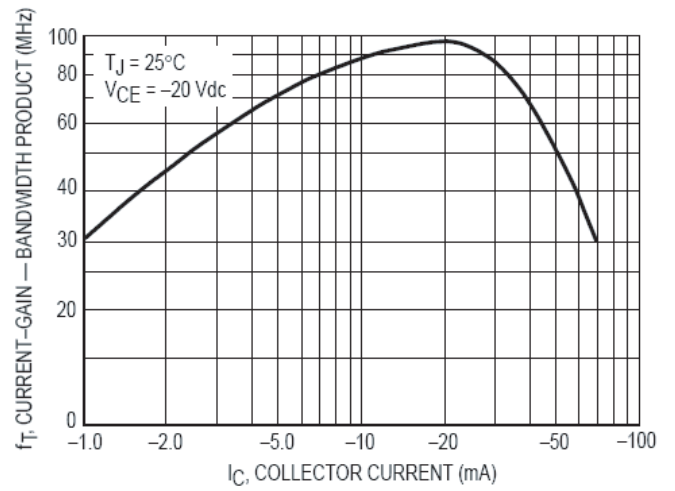


Figure 3. Current-Gain — Bandwidth Product

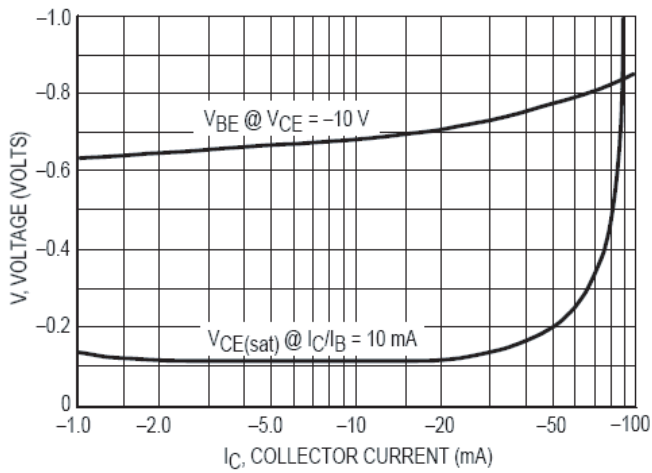


Figure 4. "On" Voltages

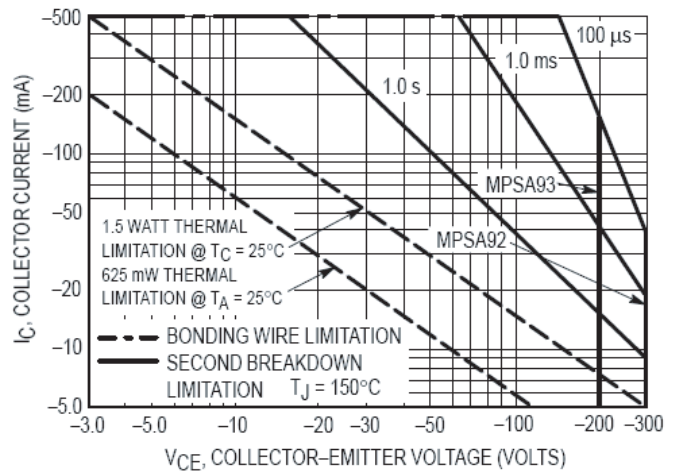


Figure 5. Active Region — Safe Operating Area

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