

TV Final Picture IF Amplifier Applications

- $G_{PE} = 33\text{dB}$ (TYP) at $f = 45\text{MHz}$
- Suffix "-C" means Center Collector (1. Emitter 2. Collector 3. Base)



NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Collector Current	50	mA
P_C	Collector Power Dissipation	300	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 10\mu\text{A}, I_E = 0$	30			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 5\text{mA}, I_B = 0$	25			V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 30\text{V}, I_E = 0$			0.1	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 3\text{V}, I_C = 0$			0.1	μA
h_{FE}	DC Current Gain	$V_{CE} = 12.5\text{V}, I_C = 12.5\text{mA}$	20		200	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = 15\text{mA}, I_B = 1.5\text{mA}$			0.2	V
$V_{BE}(\text{sat})$	Base-Emitter Saturation Voltage	$I_C = 15\text{mA}, I_B = 1.5\text{mA}$			1.5	V
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	0.8		2	pF
C_{c-rbb}	Collector-Base Time Constant	$V_{CB} = 10\text{V}, I_C = 1\text{mA}, f = 30\text{MHz}$			25	ps
f_T	Current Gain Bandwidth Product	$V_{CE} = 12.5\text{V}, I_C = 12.5\text{mA}$	300			MHz
G_{PE}	Power Gain	$V_{CC} = 12.5\text{V}, I_C = 12.5\text{mA}, f = 45\text{MHz}$	28	33	36	dB

Typical Characteristics

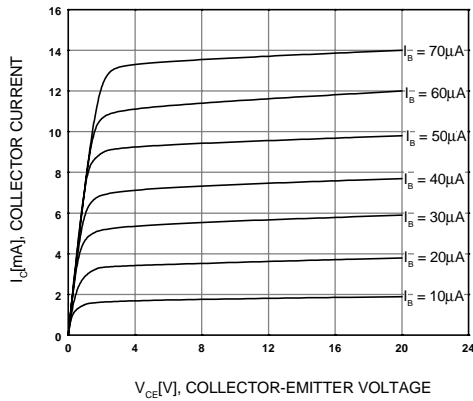


Figure 1. Static Characteristic

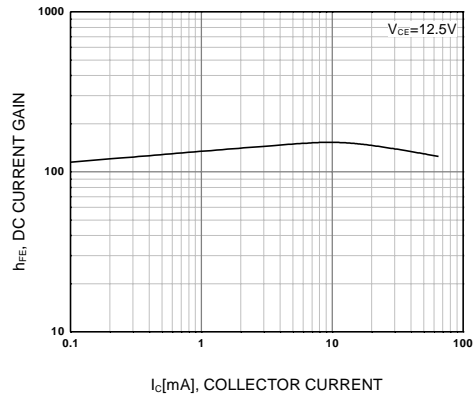


Figure 2. DC current Gain

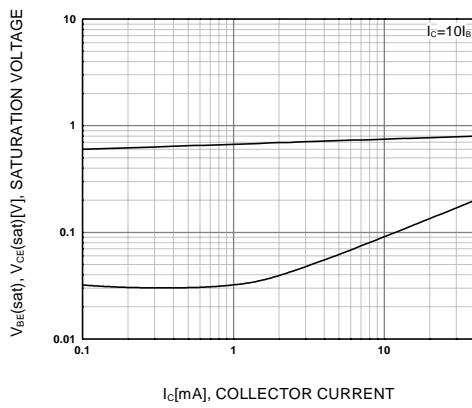


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

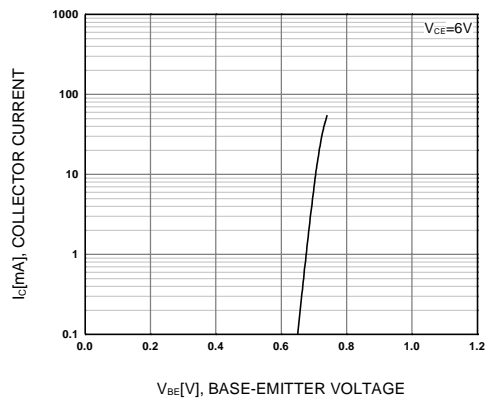


Figure 4. Base-Emitter On Voltage

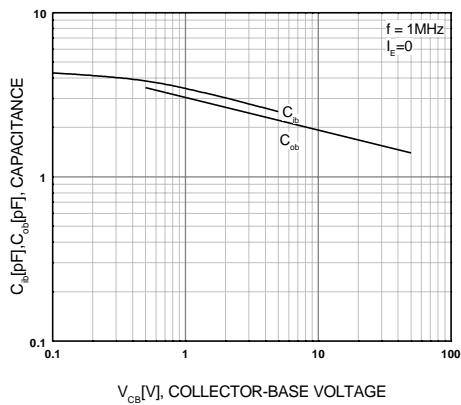


Figure 5. Collector Input Capacitance
Collector Output Capacitance

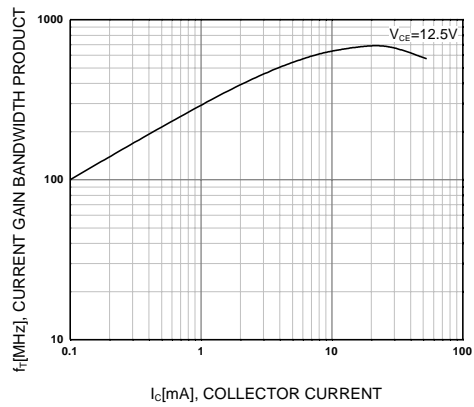


Figure 6. Current Gain Bandwidth Product

Package Dimensions

TO-92



Dimensions in Millimeters

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