



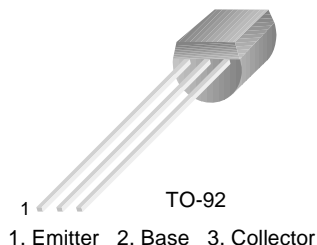
**THE DATASHEET OF  
2N5401TA**



## 2N5401

### Amplifier Transistor

- Collector-Emitter Voltage:  $V_{CEO} = 150V$
- Collector Dissipation:  $P_C (\text{max}) = 625mW$
- Suffix "-C" means Center Collector (1. Emitter 2. Collector 3. Base)



### PNP Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	-160	V
$V_{CEO}$	Collector-Emitter Voltage	-150	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-600	mA
$P_C$	Collector Dissipation	625	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	$I_C = -100\mu\text{A}, I_E = 0$	-160			V
$BV_{CEO}$	* Collector-Emitter Breakdown Voltage	$I_C = -1\text{mA}, I_B = 0$	-150			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -10\mu\text{A}, I_C = 0$	-5			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -120V, I_E = 0$			-50	nA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = -3V, I_C = 0$			-50	nA
$h_{FE}$	* DC Current Gain	$I_C = -1\text{mA}, V_{CE} = -5V$ $I_C = -10\text{mA}, V_{CE} = -5V$ $I_C = -50\text{mA}, V_{CE} = -5V$	30 60 50		240	
$V_{CE} (\text{sat})$	* Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -1\text{mA}$ $I_C = -50\text{mA}, I_B = -5\text{mA}$			-0.2 -0.5	V
$V_{BE} (\text{sat})$	* Base-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -1\text{mA}$ $I_C = -50\text{mA}, I_B = -5\text{mA}$			-1 -1	V
$f_T$	Current Gain Bandwidth Product	$I_C = -10\text{mA}, V_{CE} = -10V,$ $f = 100\text{MHz}$	100		400	MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -10V, I_E = 0, f = 1\text{MHz}$			6	pF
$N_F$	Noise Figure	$I_C = -250\mu\text{A}, V_{CE} = -5V$ $R_S = 1K\Omega$ $f = 10\text{Hz to } 15.7\text{KHz}$			8	dB

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

# Typical Characteristics

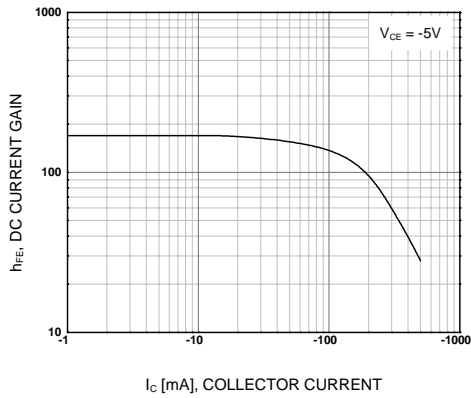


Figure 1. DC current Gain

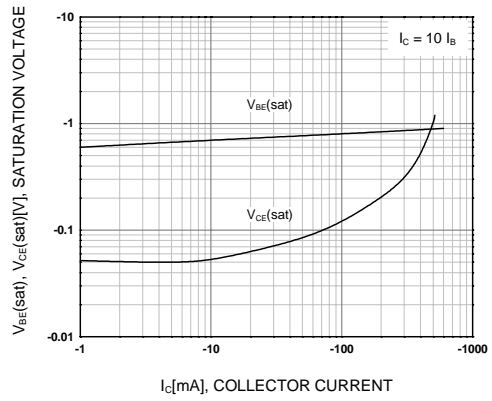


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

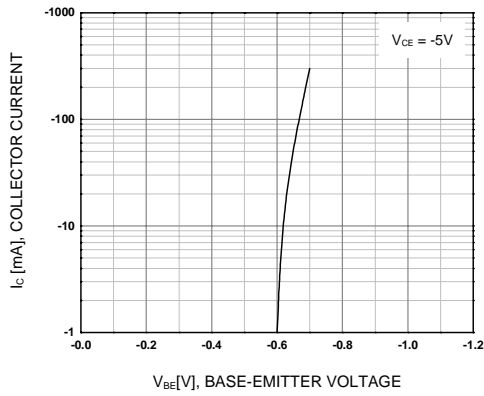


Figure 3. Base-Emitter On Voltage

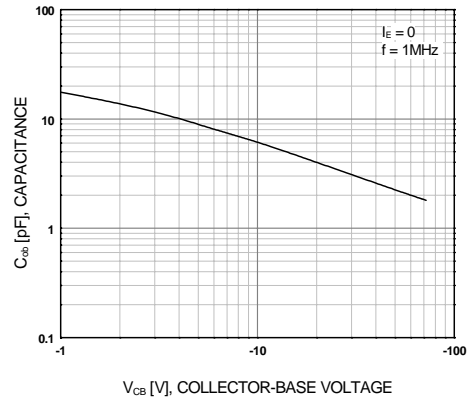


Figure 4. Output Capacitance

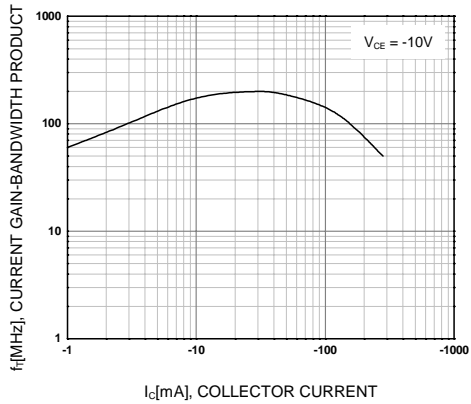
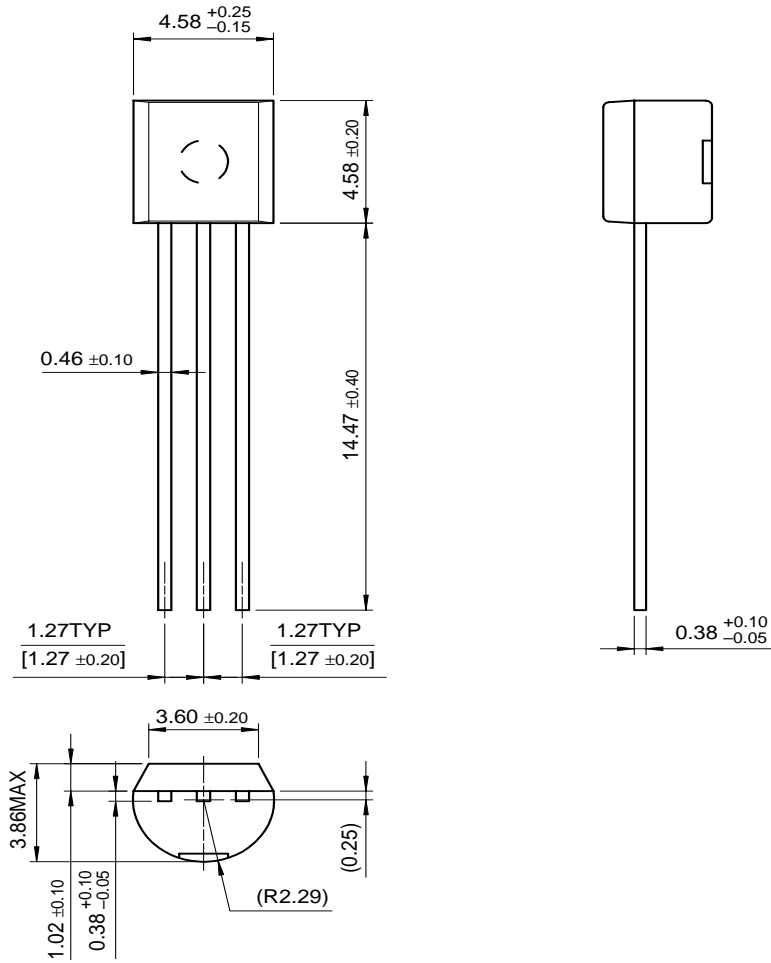


Figure 5. Current Gain Bandwidth Product

# Package Dimensions

## TO-92



Dimensions in Millimeters

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