

TO-92 Plastic-Encapsulate Transistors

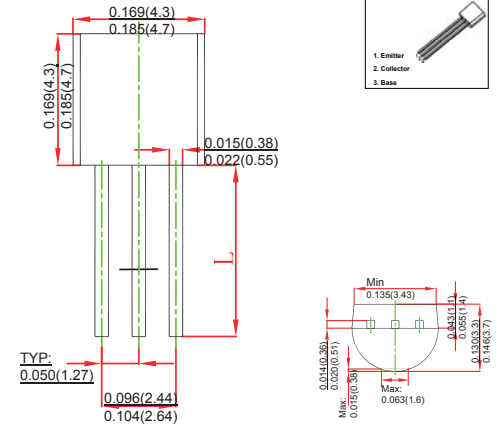
FEATURES

- TRANSISTOR (NPN)
- Excellent hFE linearity

MECHANICAL DATA

- Case style:TO-92 molded plastic
- Mounting position:any

TO-92



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CB0}	Collector Base Voltage	60	V
V_{CE0}	Collector Emitter Voltage	50	V
V_{EB0}	Emitter Base Voltage	5	V
I_C	Collector Current-Continuous	150	mA
P_C	Collector Power Dissipation	400	mW
T_j	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55 ~ +150	°C
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	312	°C/W

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

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$V_{(BR)CB0}$	Collector-base breakdown voltage	$I_C = 100\mu\text{A}$, $I_E = 0$	60			V
$V_{(BR)CE0}$	Collector-emitter breakdown voltage	$I_C = 0.1\text{mA}$, $I_B = 0$	50			V
$V_{(BR)EB0}$	Emitter-base breakdown voltage	$I_E = 100\mu\text{A}$, $I_C = 0$	5			V
I_{CBO}	Collector cut-off current	$V_{CB} = 60\text{V}$, $I_E = 0$			100	nA
I_{CEO}	Collector cut-off current	$V_{CE} = 30\text{V}$, $I_B = 0$			100	nA
I_{EBO}	Emitter cut-off current	$V_{EB} = 5\text{V}$, $I_C = 0$			100	nA
$h_{FE(1)}$	DC current gain	$V_{CE} = 5\text{V}$, $I_C = 1\text{mA}$	70		700	
$h_{FE(2)}$		$V_{CE} = 6\text{V}$, $I_C = 2\text{mA}$	70			
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C = 100\text{mA}$, $I_B = 10\text{mA}$			0.25	V
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C = 100\text{mA}$, $I_B = 10\text{mA}$			1	V
f_T	Transition frequency	$V_{CE} = 10\text{V}$, $I_C = 1\text{mA}$, $f = 30\text{MHz}$	80			MHz
C_{ob}	Collector Output Capacitance	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$			3.5	pF
NF	Noise Figure	$V_{CE} = 6\text{V}$, $I_C = 0.1\text{mA}$, $f = 1\text{KHz}$, $R_G = 10\text{K}$			10	dB

Classification OF $h_{FE(1)}$

Rank	O	Y	GR	BL
Range	70-140	120-240	200-400	350-700



RATINGS AND CHARACTERISTIC CURVES

Typical Characteristics

