

FJN3303R

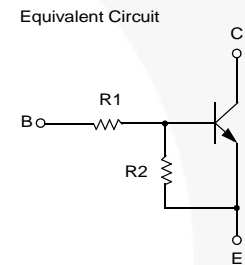
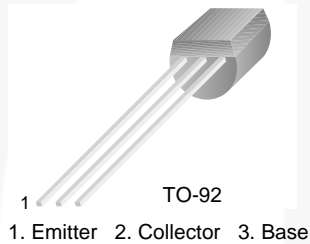
NPN Epitaxial Silicon Transistor

Features

- Switching Circuit, Inverter, Interface Circuit, Driver Circuit
- Built-in Bias Resistor ($R_1 = 22\text{ k}\Omega$, $R_2 = 22\text{ k}\Omega$)
- Complement to FJN4303R

Application

- Switching Application (Integrated Bias Resistor)



Ordering Information

Part Number	Top Mark	Package	Packing Method
FJN3303RTA	R3303	TO-92 3L	Ammo

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector Current	100	mA
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 to 150	$^\circ\text{C}$

Thermal Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	300	mW
	Derate Above $T_A = 25^\circ\text{C}$	2.4	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	416	$^\circ\text{C}/\text{W}$

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 10\ \mu\text{A}$, $I_E = 0$	50			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 100\ \mu\text{A}$, $I_B = 0$	50			V
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 40\ \text{V}$, $I_E = 0$			0.1	μA
h_{FE}	DC Current Gain	$V_{CE} = 5\ \text{V}$, $I_C = 5\ \text{mA}$	56			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 10\ \text{mA}$, $I_B = 0.5\ \text{mA}$			0.3	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 10\ \text{V}$, $I_C = 5\ \text{mA}$		250		MHz
C_{ob}	Output Capacitance	$V_{CB} = 10\ \text{V}$, $I_E = 0$, $f = 1.0\ \text{MHz}$		3.7		pF
$V_I(\text{off})$	Input Off Voltage	$V_{CE} = 5\ \text{V}$, $I_C = 100\ \mu\text{A}$	0.5			V
$V_I(\text{on})$	Input On Voltage	$V_{CE} = 0.3\ \text{V}$, $I_C = 5\ \text{mA}$			3.0	V
R_1	Input Resistor		15	22	29	$\text{k}\Omega$
R_1/R_2	Resistor Ratio		0.9	1.0	1.1	

Typical Performance Characteristics

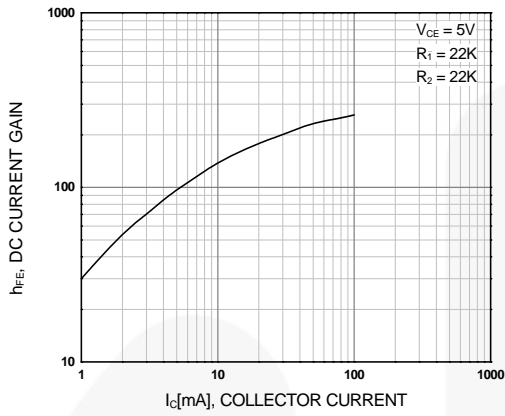


Figure 1. DS Current Gain

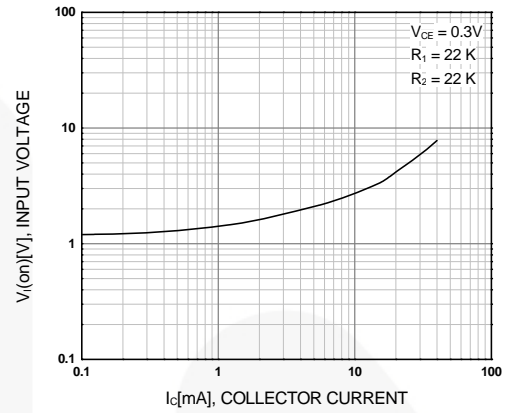


Figure 2. Input On Voltage

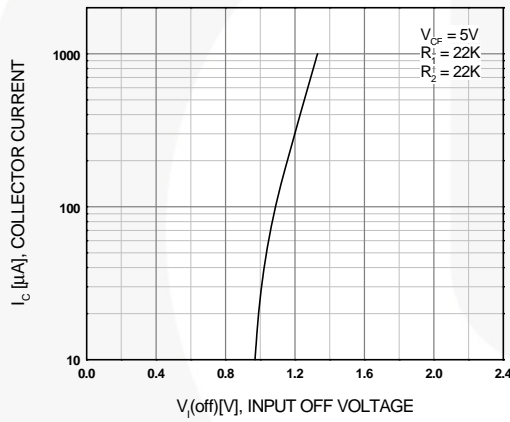


Figure 3. Input Off Voltage

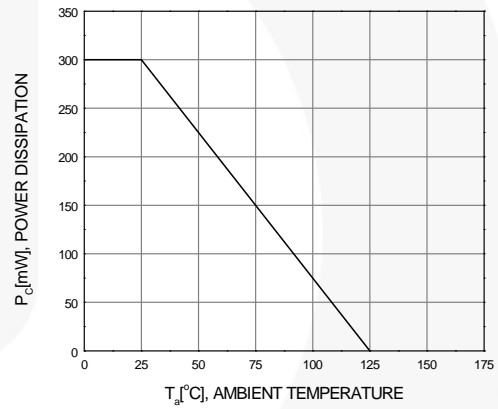


Figure 4. Power Derating

Physical Dimensions

TO-92

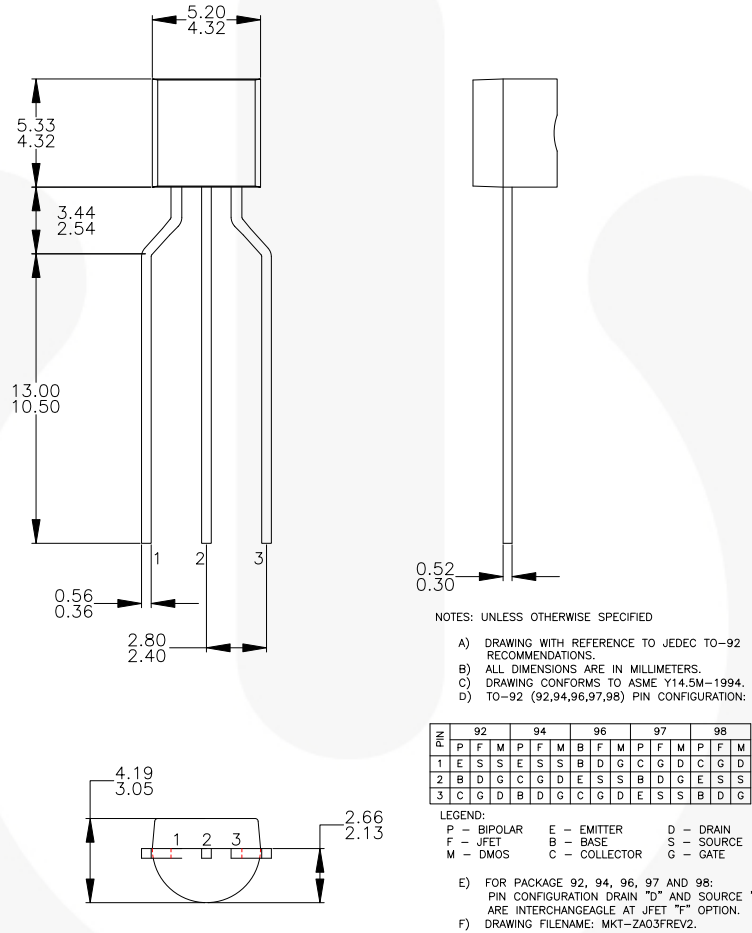


Figure 5. 3-LEAD, TO-92, MOLDED 0.200 IN LINE SPACING LD FORM (J61Z OPTION) (ACTIVE)

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