

# FJN4301R

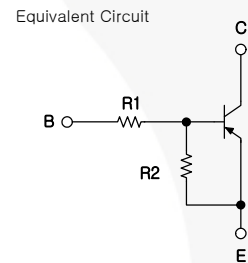
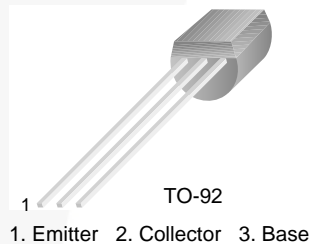
## PNP Epitaxial Silicon Transistor

### Features

- Switching Circuit, Inverter, Interface Circuit, Driver Circuit
- Built-in Bias Resistor ( $R_1 = 4.7 \text{ k}\Omega$ ,  $R_2 = 4.7 \text{ k}\Omega$ )
- Complement to FJN3301R

### Application

- Switching Application (Integrated Bias Resistor)



### Ordering Information

Part Number	Top Mark	Package	Packing Method
FJN4301RTA	R4301	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<sup>(1)</sup>**

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	$^\circ\text{C/W}$

**Note:**

1. PCB Board Size: FR-4 76 x 114 x 0.6T mm<sup>3</sup> (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

**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	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{CE} = -5\ \text{V}$ , $I_C = -10\ \text{mA}$	20			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -10\ \text{mA}$ , $I_B = -0.5\ \text{mA}$			-0.3	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -10\ \text{V}$ , $I_C = -5\ \text{mA}$		200		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -10\ \text{V}$ , $I_E = 0$ , $f = 1.0\ \text{MHz}$		5.5		pF
$V_{I(off)}$	Input Off Voltage	$V_{CE} = -5\ \text{V}$ , $I_C = -100\ \mu\text{A}$			-0.5	V
$V_{I(on)}$	Input On Voltage	$V_{CE} = -0.3\ \text{V}$ , $I_C = -20\ \text{mA}$	-3			V
$R_1$	Input Resistor		3.2	4.7	6.2	k $\Omega$
$R_1/R_2$	Resistor Ratio		0.9	1.0	1.1	

## Typical Performance Characteristics

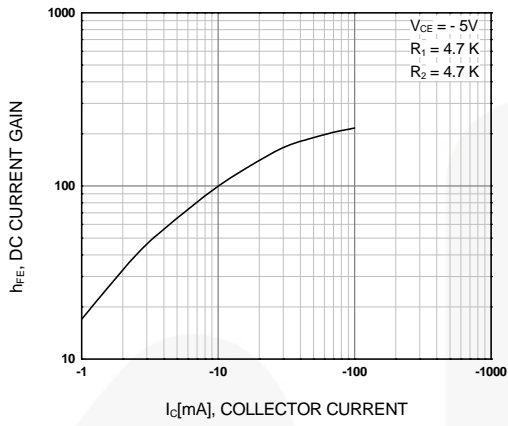


Figure 1. DC Current Gain

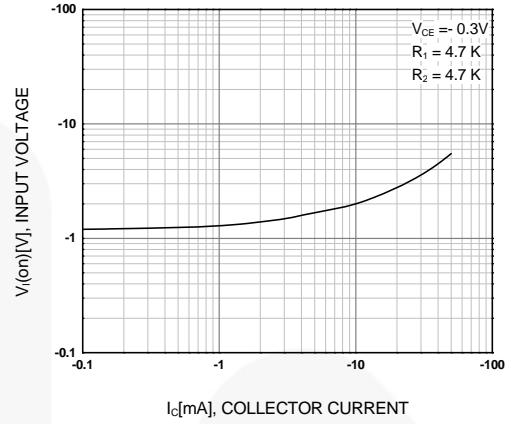


Figure 2. Input On Voltage

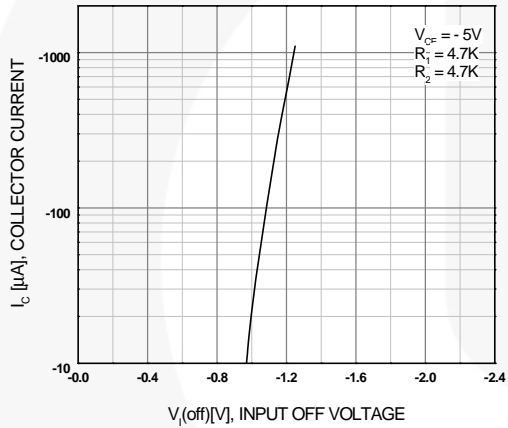


Figure 3. Input Off Voltage

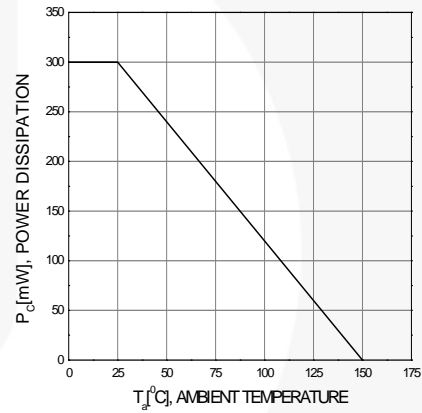


Figure 4. Power Derating

## Physical Dimensions

## TO-92

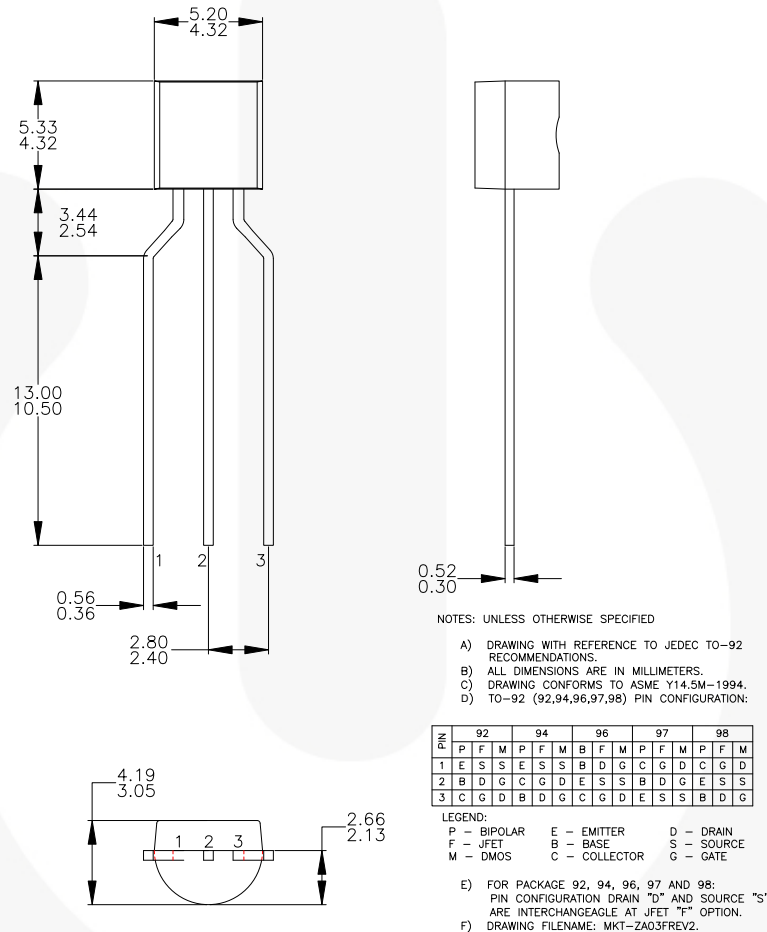


Figure 5. 3-LEAD, TO-92, MOLDED 0.200 IN LINE SPACING LD FORM (J61Z OPTION) (ACTIVE)

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