

# FJV3110R NPN Epitaxial Silicon Transistor with Bias Resistor

### Features

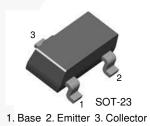
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- 100 mA Output Current Capability
- Built-in Bias Resistor (R = 10 k $\Omega$ )

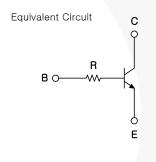
### Application

- Switching, Interface, and Driver Circuits
- Inverters
- · Digital Applications in Industrial Segments





Transistors with built-in resistors can be excellent space- and cost-saving solutions by reducing component count and simplifying circuit design.



## **Ordering Information**

Part Number	Top Mark	Package	Packing Method
FJV3110RMTF	R30	SOT-23 3L	Tape and Reel

## **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  $T_A = 25^{\circ}$ C unless otherwise noted.

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	40	V
V <sub>CEO</sub>	Collector-Emitter Voltage	40	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
۱ <sub>C</sub>	Collector Current	100	mA
ТJ	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	-55 to 150	°C

# Thermal Characteristics<sup>(1)</sup>

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

Symbol	Parameter	Value	Unit
D	Power Dissipation	200	mW
P <sub>D</sub>	Derate Above T <sub>A</sub> = 25°C	1.60	mW/°C
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	625	°C/W

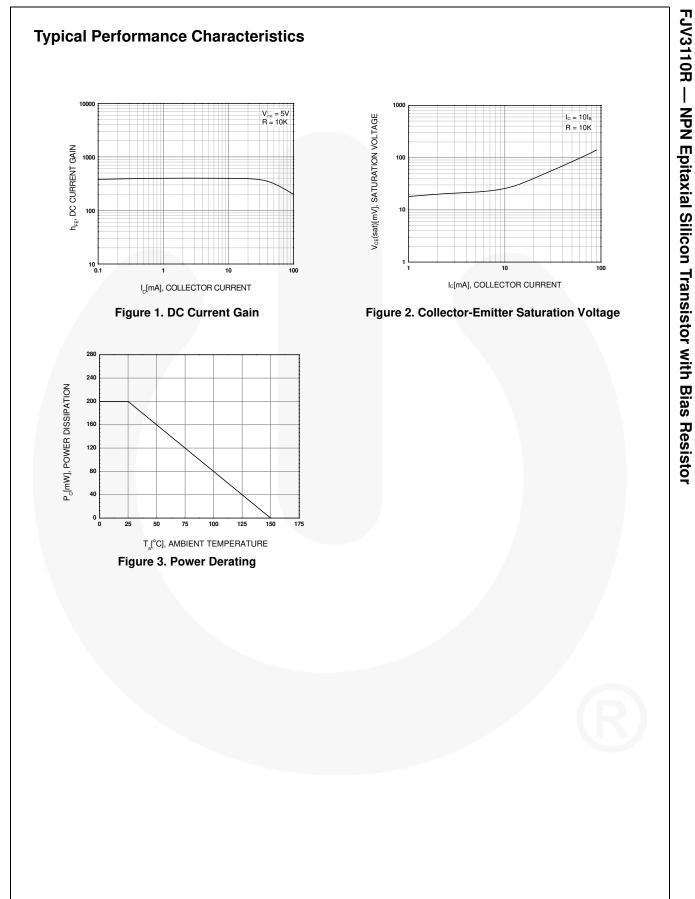
#### Note:

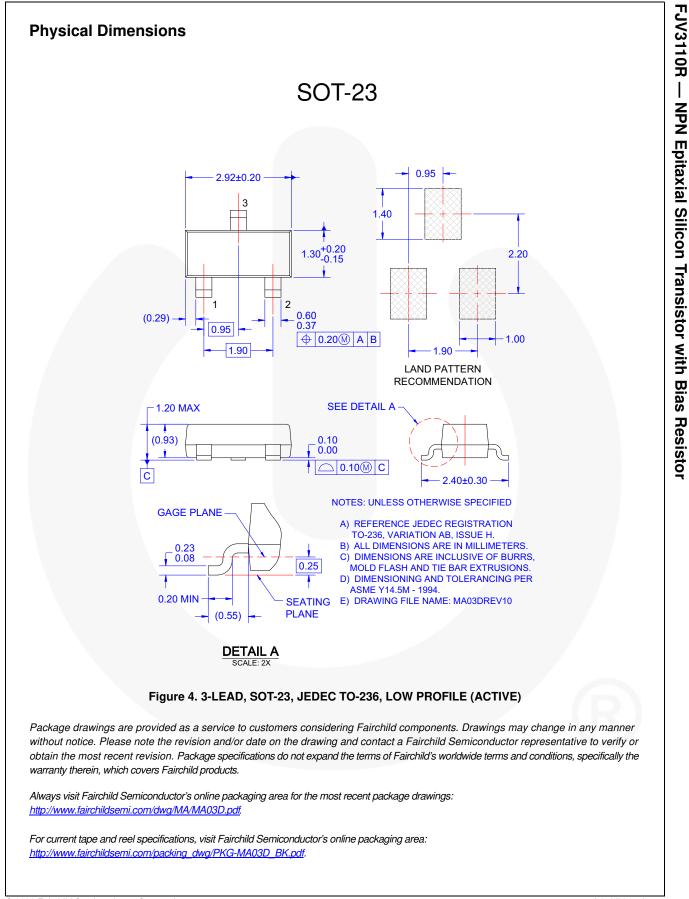
1. FR-4 76 x 114 x 0.6T mm<sup>3</sup> (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

## **Electrical Characteristics**

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

Symbol	Parameter	Conditions	Min.	Тур.	Max.	Unit
BV <sub>CBO</sub>	Collector-Base Breakdown Voltage	$I_{C} = 100 \ \mu A, \ I_{E} = 0$	40			V
BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	$I_{\rm E} = 1  {\rm mA},  I_{\rm B} = 0$	40			V
I <sub>CBO</sub>	Collector Cut-Off Current	$V_{CB} = 30 \text{ V}, \text{ I}_{E} = 0$			0.1	μA
h <sub>FE</sub>	DC Current Gain	$V_{CE} = 5 V, I_{C} = 1 mA$	100		600	
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 1 mA			0.3	V
C <sub>ob</sub>	Output Capacitance	$V_{CB} = 10 \text{ V}, \text{ I}_{E} = 0,$ f = 1 MHz		3.7		pF
f <sub>T</sub>	Current Gain Bandwidth Product	$V_{CE} = 10 \text{ V}, \text{ I}_{C} = 5 \text{ mA}$		250		MHz
R	Input Resistor		7	10	13	kΩ





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