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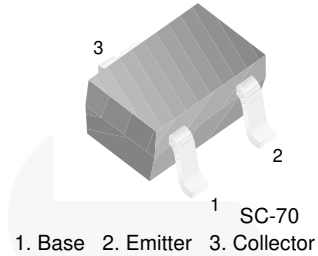
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# FJX3906

## PNP Epitaxial Silicon Transistor

### Feature

- General-Purpose Transistor



### Ordering Information

Part Number	Top Mark	Package	Packing Method
FJX3906TF	S2A	SC70 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  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	-40	V
$V_{CES}$	Collector-Emitter Voltage	40	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-200	mA
$P_C$	Collector Power Dissipation	350	mW
$T_{STG}$	Storage Temperature	-55 to +150	$^\circ\text{C}$

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

Symbol	Parameter	Value	Unit
$P_D$	Derate above $25^\circ\text{C}$	2.8	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Air	357	$^\circ\text{C}/\text{W}$

#### Note:

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

### Electrical Characteristics<sup>(2)</sup>

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

Symbol	Parameter	Test Conditions	Min.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -10 \mu\text{A}, I_E = 0$	-40		V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -1.0 \text{ mA}, I_B = 0$	-40		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10 \mu\text{A}, I_C = 0$	-5		V
$I_{CEX}$	Collector Cut-Off Current	$V_{CE} = -30 \text{ V}, V_{EB} = -3 \text{ V}$		-50	nA
$h_{FE}$	DC Current Gain	$V_{CE} = -1 \text{ V}, I_C = -0.1 \text{ mA}$	60		
		$V_{CE} = -1 \text{ V}, I_C = -1 \text{ mA}$	80		
		$V_{CE} = -1 \text{ V}, I_C = -10 \text{ mA}$	100	300	
		$V_{CE} = -1 \text{ V}, I_C = -50 \text{ mA}$	60		
		$V_{CE} = -1 \text{ V}, I_C = -100 \text{ mA}$	30		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$		-0.25	V
		$I_C = -50 \text{ mA}, I_B = -5 \text{ mA}$		-0.40	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$	-0.65	-0.85	V
		$I_C = -50 \text{ mA}, I_B = -5 \text{ mA}$		-0.95	V
$C_{ob}$	Output Capacitance	$V_{CB} = -5 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		4.5	pF
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -20 \text{ V}, I_C = -10 \text{ mA}$	250		MHz
NF	Noise Figure	$I_C = -10 \mu\text{A}, V_{CE} = -5 \text{ V},$ $R_S = 1 \text{ k}\Omega,$ $f = 10 \text{ Hz to } 15.7 \text{ kHz}$		4	dB
$t_{ON}$	Turn-On Time	$V_{CC} = -3 \text{ V}, V_{BE} = -0.5 \text{ V},$ $I_C = -10 \text{ mA}, I_{B1} = -1 \text{ mA}$		70	ns
$t_{OFF}$	Turn-Off Time	$V_{CC} = -3 \text{ V}, I_C = -10 \text{ mA},$ $I_{B1} = I_{B2} = 1 \text{ mA}$		300	ns

**Note:**

2. Pulse test: pulse width  $\leq 300 \mu\text{s}$ , duty cycle  $\leq 2.0\%$ .

## Typical Performance Characteristics

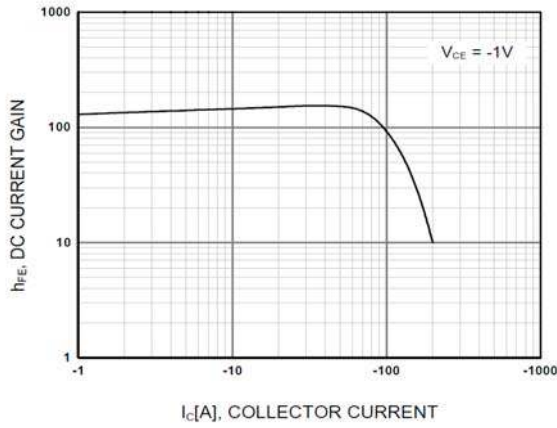


Figure 1. DC Current Gain

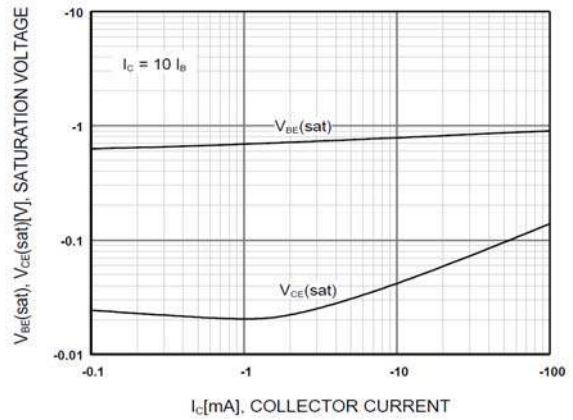


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

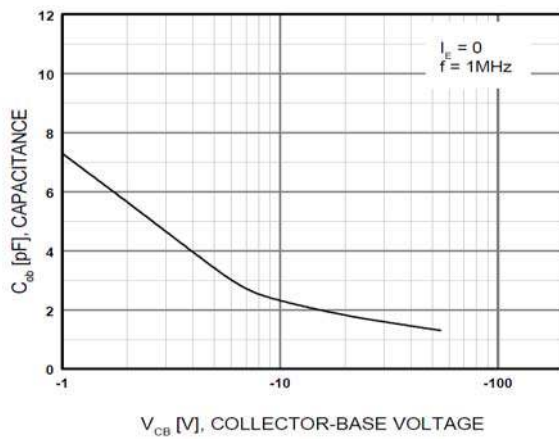


Figure 3. Output Capacitance

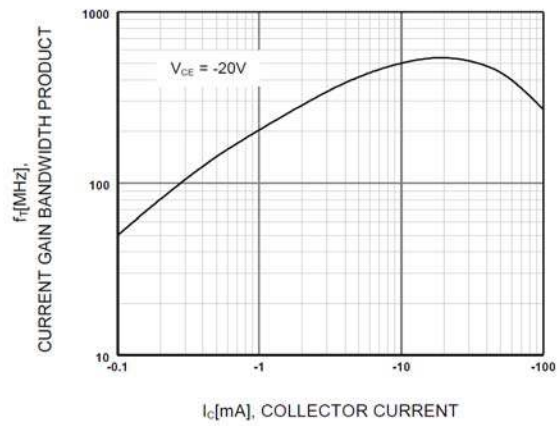
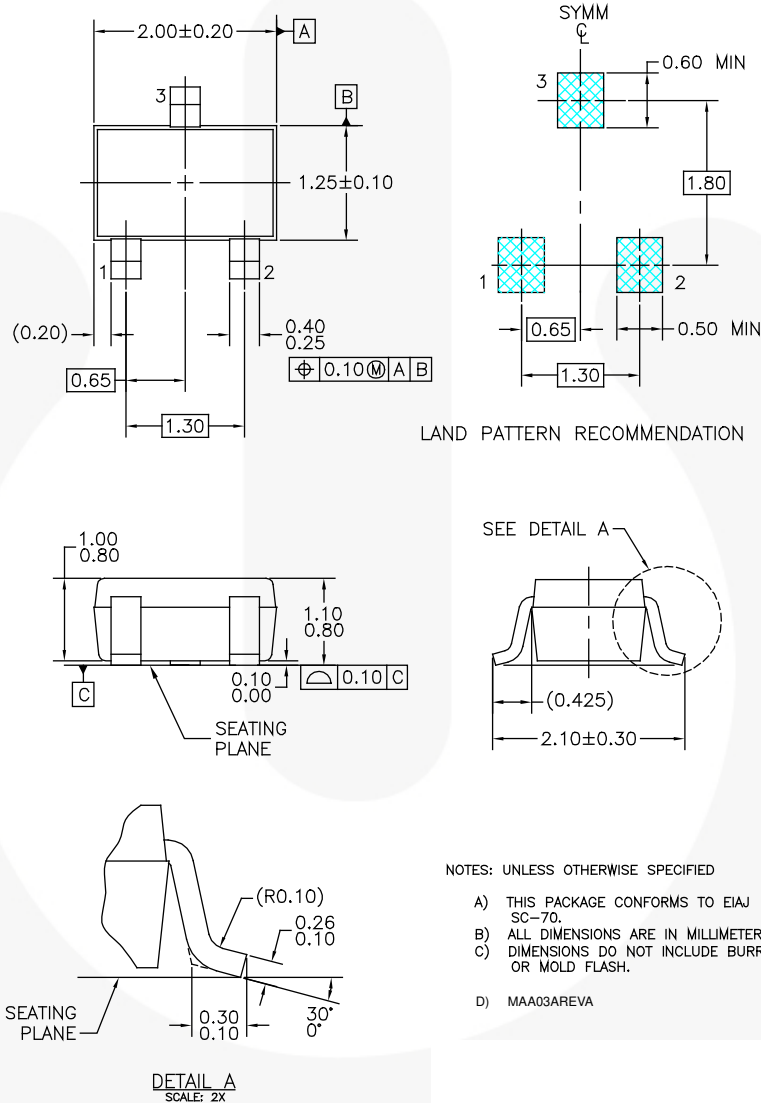


Figure 4. Current Gain Bandwidth Product

## Physical Dimensions

### SC-70 (SOT-323)



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