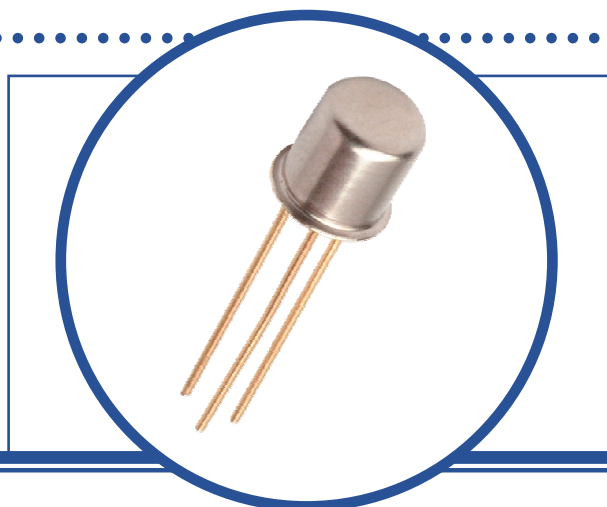


# SILICON EPITAXIAL NPN TRANSISTOR

## BFT29 / BFT30 / BFT31

- Hermetic TO-18 Metal Package
- Designed For General Purpose Amplifiers, and Audio Driver Applications
- Screening Options Available



### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

		BFT29	BFT30	BFT31
$V_{CBO}$	Collector – Base Voltage	90V	70	60
$V_{CEO}$	Collector – Emitter Voltage	80V	60	50
$V_{EBO}$	Emitter – Base Voltage		5V	
$I_C$	Continuous Collector Current		1.0A	
$P_D$	Total Power Dissipation at $T_A = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$		360mW 2mW/ $^\circ\text{C}$	
$T_J$	Junction Temperature Range		-65 to +200 $^\circ\text{C}$	
$T_{stg}$	Storage Temperature Range		-65 to +200 $^\circ\text{C}$	

### THERMAL PROPERTIES

Symbols	Parameters	Max	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	486	$^\circ\text{C/W}$

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.



# SILICON EPITAXIAL NPN TRANSISTOR BFT29 / BFT30 / BFT31

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units	
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10\mu\text{A}$ $I_E = 0$	BFT29	90			V
			BFT30	70			
			BFT31	60			
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	BFT29	80			V
			BFT30	60			
			BFT31	50			
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}$ $I_C = 0$	5			V	
$I_{CBO}$	Collector-Cut-Off Current	$V_{CB} = \text{Rated } V_{CEO}, I_E = 0$			100	nA	
$h_{FE}^{(1)}$	Forward-Current Transfer Ratio	$I_C = 1.0\text{mA}$ $V_{CE} = 10\text{V}$	BFT29	25			
			BFT30	45			
			BFT31	45			
		$I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$	BFT29	30			
			BFT30	50			
			BFT31	50			
		$I_C = 100\text{mA}$ $V_{CE} = 10\text{V}$	BFT29	50		250	
			BFT30	75		250	
			BFT31	100		300	
		$I_C = 500\text{mA}$ $V_{CE} = 10\text{V}$	BFT29	30			
			BFT30	50			
			BFT31	50			
$I_C = 1.0\text{A}$ $V_{CE} = 10\text{V}$	BFT29	20					
	BFT30	25					
	BFT31	25					
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 500\text{mA}$ $I_B = 50\text{mA}$	BFT29		0.95	V	
			BFT30		0.75		
			BFT31		0.75		
		$I_C = 1.0\text{A}$ $I_B = 100\text{mA}$	BFT29		1.6		
			BFT30		1.0		
			BFT31		1.0		
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 500\text{mA}$ $I_B = 50\text{mA}$			1.1		
		$I_C = 1.0\text{A}$ $I_B = 100\text{mA}$			2.0		

# SILICON EPITAXIAL NPN TRANSISTOR BFT29 / BFT30 / BFT31

## DYNAMIC CHARACTERISTICS

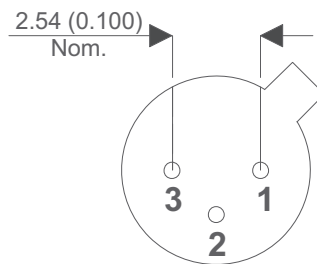
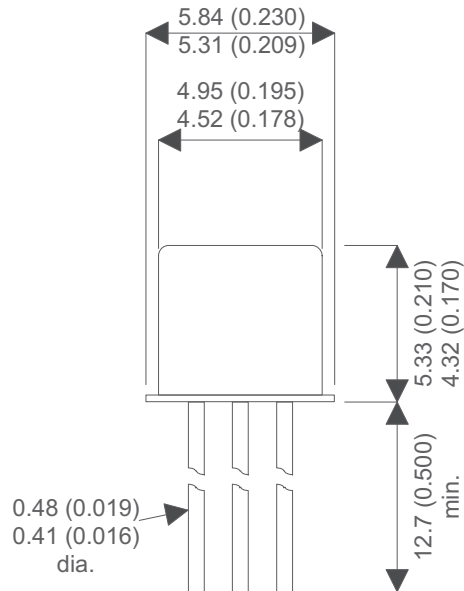
$f_T$	Transition Frequency	$I_C = 40\text{mA}$ $f = 20\text{MHz}$	$V_{CE} = 10\text{V}$	80	95		MHz
$C_{obo}$	Output Capacitance	$V_{CB} = 10\text{V}$ $f = 1.0\text{MHz}$	$I_E = 0$		8.5	10	pF

### Notes

(1) Pulse Width  $\leq 300\mu\text{s}$ ,  $\delta \leq 2\%$

## MECHANICAL DATA

Dimensions in mm (inches)



### TO-18 (TO-206AA)

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector