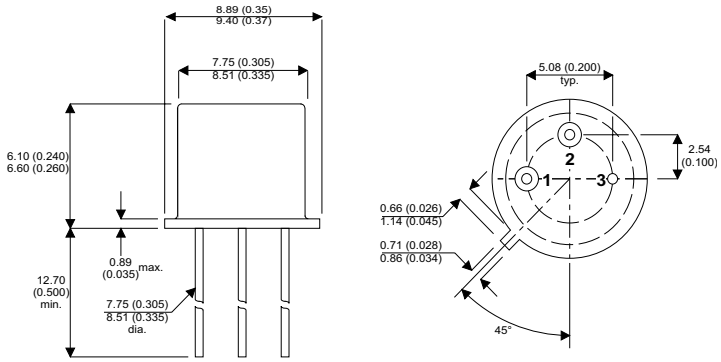
BFT33A

MECHANICAL DATA
Dimensions in mm(inches)

NPN SILICON TRANSISTOR



FEATURES

- **FAST SWITCHING**
- **HIGH PULSE POWER**

APPLICATIONS

- **POWER SWITCHING CIRCUITS**
- **MOTOR CONTROL**

TO39

Pin 1 = Emitter Pin 2 = Base Pin 3 = Collector

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage	100V
V_{CEO}	Collector – Emitter Voltage	80V
V_{EBO}	Emitter – Base Voltage	5V
I_C	Collector Current	3A
I_B	Base Current	2A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25°C$	1W
T_{amb}	Ambient Operating Temperature	-55°C to +200°C
T_{stg},	Storage Temperature	-55°C to +200°C

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ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
h_{21E}	Static Value of Common Emitter Forward Current Transfer Ratio	V_{CE} = 10V	I_C = 0.15	50		250	—
		V_{CE} = 10V	I_C = 2A	15			
		V_{CE} = 10V	I_C = 1mA	20			
f_T	Transistion Frequency	V_{CE} = 5V f = 20MHz	I_C = 100mA	50			MHz
I_{CBO}	Collector Base Cut- Off Current.	V_{CB} = 80V	I_E = 0			100	nA
			t = 150°C			100	µA
I_{EBO}	Emitter–Base Cut-off Current	V_{EB} = 4V				100	nA
h_{21e}	Small Signal Common Emitter Forward Current Transfer Ratio	V_{CE} = 5V f = 1KHz	I_C = 10mA	25			—
$V_{CE(sat)}$*	Collector – Emitter Saturation Voltage*	I_C = 150mA	I_B = 15mA			0.3	V
		I_C = 1A	I_B = 0.1A			0.6	
$V_{BE(sat)}$*	Base – Emitter Saturation Voltage*	I_C = 150mA	I_B = 15mA			0.95	V
		I_C = 1A	I_B = 0.1A			1.3	
C_{22b}	Common – Base Output Capacitance	V_{CB} = 10V f = 1MHz	I_E = 0			80	pF

*Pulse Conditions: Pulse Length = 300µs duty cycle = 1.5%