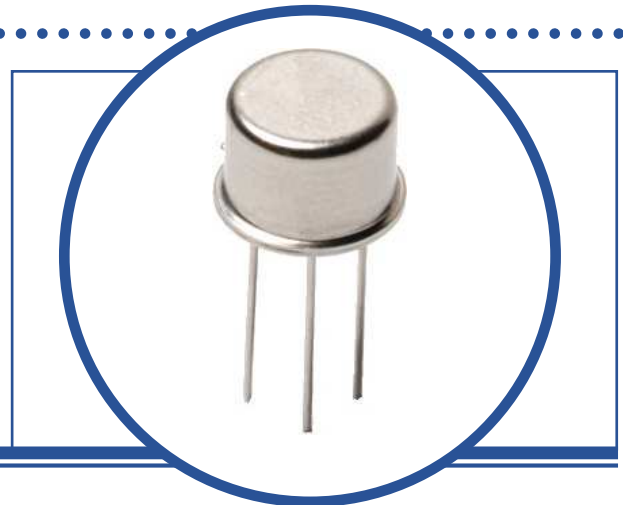


# HIGH CURRENT GENERAL PURPOSE TRANSISTOR

## BFX34

- Silicon Epitaxial NPN Transistor
- High Speed, Low Saturation Switch
- Hermetic TO39 Package
- Screening Options Available



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

$V_{CBO}$	Collector – Base Voltage	120V
$V_{CEO}$	Collector – Emitter Voltage	60V
$V_{EBO}$	Emitter – Base Voltage	6V
$I_B$	Continuous Base Current	1.0A
$I_C$	Continuous Collector Current	2A
$I_{CM}$	Peak Repetitive Collector Current	5A
$P_D$	Total Power Dissipation at $T_A = 25^\circ\text{C}$ $T_C = 25^\circ\text{C}$	870mW 5W
$T_J$	Junction Temperature Range	200°C
$T_{stg}$	Storage Temperature Range	-65 to +200°C

### THERMAL PROPERTIES

Symbols	Parameters	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	200	°C/W
$R_{\theta JC}$	Thermal Resistance, Junction To Case	35	°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.

# HIGH CURRENT GENERAL PURPOSE TRANSISTOR BFX34

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

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)CBO}^{(1)}$	Collector-Base Breakdown Voltage	$I_C = 5\text{mA}$ $V_{BE} = 0$	120			V
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	60			
$V_{EBO}^{(1)}$	Emitter - Base Voltage	$I_E = 1.0\text{mA}$ $I_C = 0$	6			
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 5\text{A}$ $I_B = 0.5\text{A}$		0.4	1.0	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage			1.3	1.6	
$I_{CES}$	Collector Cut-Off Current	$V_{CE} = 60\text{V}$ $V_{BE} = 0$		0.02	10	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-Off Current	$V_{EB} = 4\text{V}$ $I_C = 0$		0.05	10	
$h_{FE}$	DC Current Gain	$I_C = 1.0\text{A}$ $V_{CE} = 2\text{V}$		100		-
		$I_C = 1.5\text{A}$ $V_{CE} = 0.6\text{V}$		75		
		$I_C = 2\text{A}$ $V_{CE} = 2\text{V}$	40	80	150	

## DYNAMIC CHARACTERISTICS

$f_T$	Transition Frequency	$I_C = 0.5\text{A}$ $V_{CE} = 5\text{V}$ $f = 20\text{MHz}$	70	100		MHz
$C_{obo}$	Output Capacitance	$V_{CB} = 10\text{V}$ $f = 1.0\text{MHz}$		40	100	pF
$C_{ibo}$	Input Capacitance	$V_{EB} = 0.5\text{V}$ $f = 1.0\text{MHz}$		300	500	
$t_{on}$	Turn on Time	$V_{CC} = 20\text{V}$ $I_C = 0.5\text{A}$			0.6	$\mu\text{s}$
$t_{off}$	Turn off Time	$I_{B1} = -I_{B2} = 50\text{mA}$			1.2	

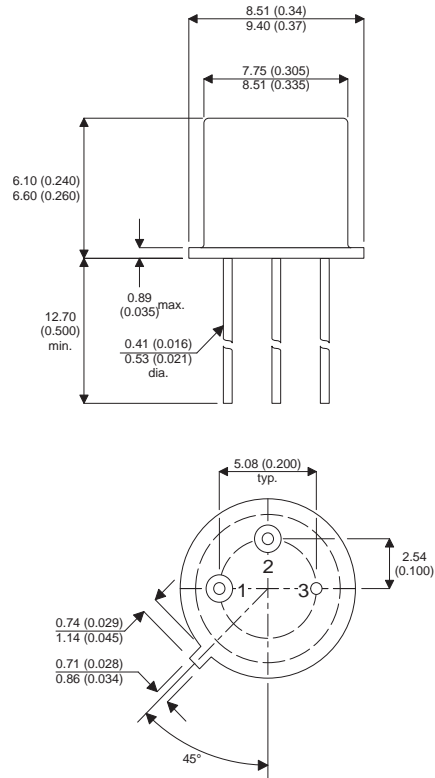
### Notes

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

# HIGH CURRENT GENERAL PURPOSE TRANSISTOR BFX34

## MECHANICAL DATA

Dimensions in mm (inches)



### TO39 (TO-205AD) METAL PACKAGE Underside View

PIN 1 - Emitter

PIN 2 - Base

PIN 3 - Collector