

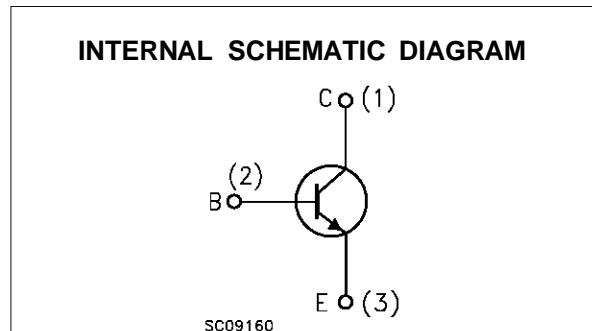
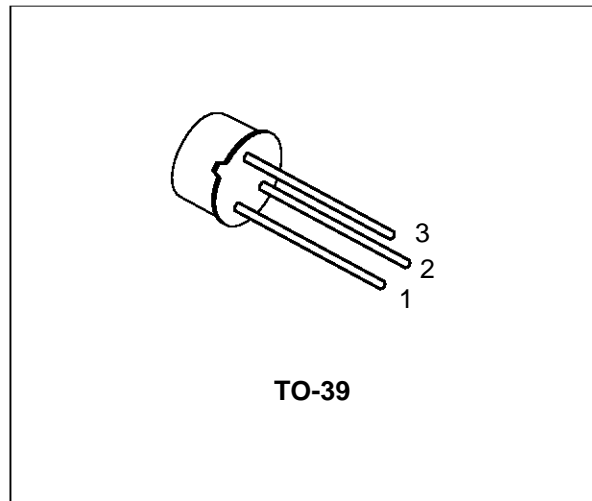
**SILICON NPN TRANSISTOR**

■ SGS-THOMSON PREFERRED SALESTYPE

**DESCRIPTION**

The BFX34 is a silicon epitaxial planar NPN transistor in Jedec TO-39 metal case, intended for high current applications.

Very low saturation voltage and high speed at high current levels make it deal for power drivers, power amplifiers, switching power supplies and relay drivers inverters.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	120	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	60	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	6	V
$I_C$	Collector Current	5	A
$P_{tot}$	Total Dissipation at $T_{case} \leq 25\text{ }^\circ\text{C}$ $T_{amb} \leq 25\text{ }^\circ\text{C}$	0.87	W
		5	W
$T_{stg}$	Storage Temperature	-65 to 200	$^\circ\text{C}$
$T_j$	Max. Operating Junction Temperature	200	$^\circ\text{C}$

## BFX34

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	35	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-amb	Max	200	°C/W

### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

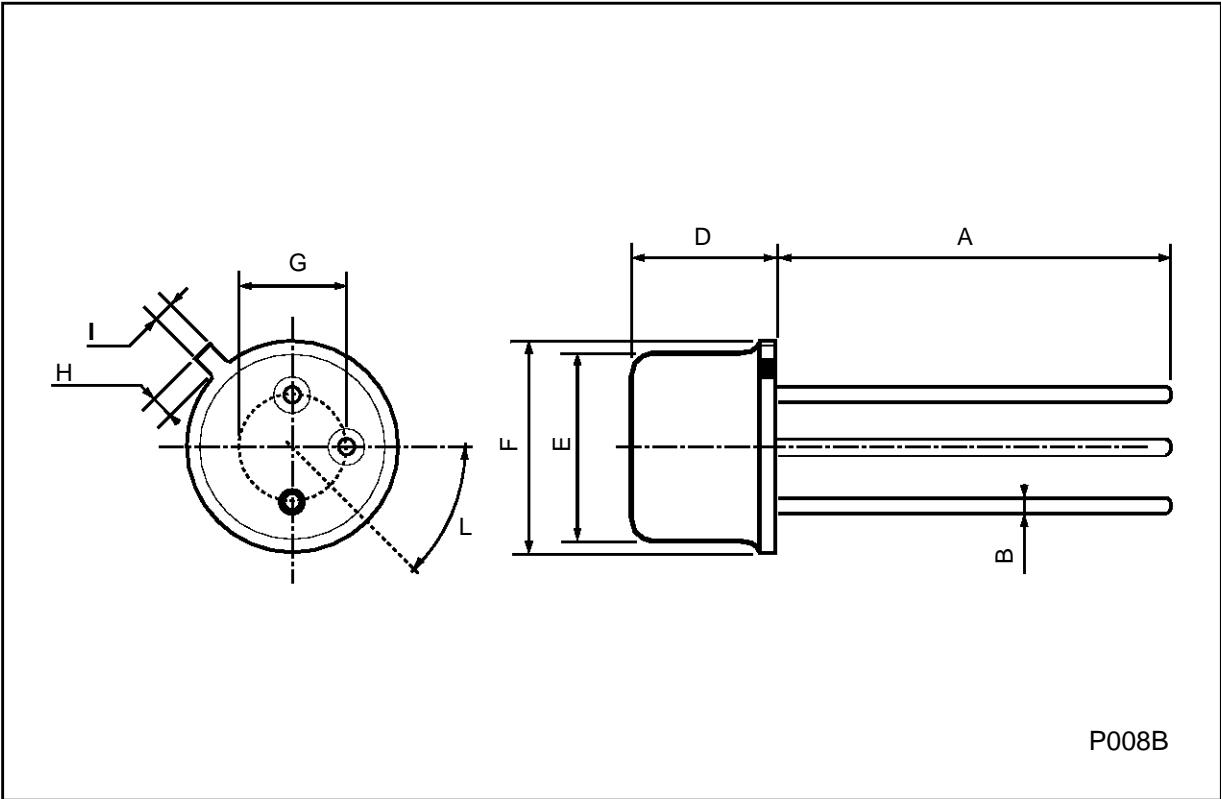
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CEs</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0)	V <sub>CE</sub> = 60 V		0.02	10	μA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 4 V		0.05	10	μA
V <sub>(BR)CBO</sub> *	Collector-base Breakdown Voltage (I <sub>E</sub> = 0)	I <sub>C</sub> = 5 mA	120			V
V <sub>CEO(sus)</sub> *	Collector-Emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 100 mA	60			V
V <sub>EBO</sub> *	Emitter-base Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> = 1 mA	6			V
V <sub>CE(sat)</sub> *	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 5 A      I <sub>B</sub> = 0.5 A		0.4	1	V
V <sub>BE(sat)</sub> *	Base-Emitter Saturation Voltage	I <sub>C</sub> = 5 A      I <sub>B</sub> = -0.5 A		1.3	1.6	V
h <sub>FE</sub> *	DC Current Gain	I <sub>C</sub> = 1 A      V <sub>CE</sub> = 2 V I <sub>C</sub> = 1.5 A      V <sub>CE</sub> = 0.6 V I <sub>C</sub> = 2 A      V <sub>CE</sub> = 2 V	40	100 75 80	150	
f <sub>T</sub> *	Transition Frequency	I <sub>C</sub> = 0.5 A      V <sub>CE</sub> = 5 V f = 20 MHz	70	100		MHz
C <sub>EBO</sub>	Emitter-base Capacitance	I <sub>C</sub> = 0.5 A      V <sub>EB</sub> = 5 V f = 1 MHz		300	500	pF
C <sub>CBO</sub>	Collector-base Capacitance	I <sub>E</sub> = 0      V <sub>CB</sub> = 10 V f = 1 MHz		40	100	pF
t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = -0.5 A      V <sub>CC</sub> = -20 V I <sub>B1</sub> = -I <sub>B2</sub> = -50 mA		0.6	0.25	μs
t <sub>on</sub>	Turn-on Time			0.6	1.2	μs

\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

For PNP types voltage and current values are negative.

**TO39 MECHANICAL DATA**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



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