

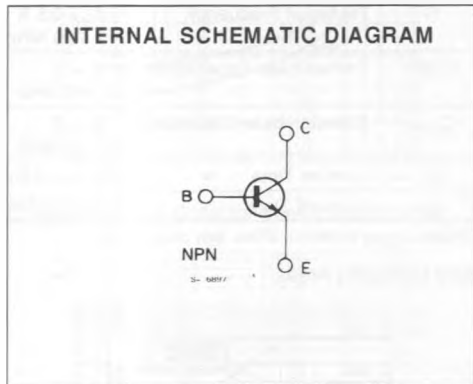
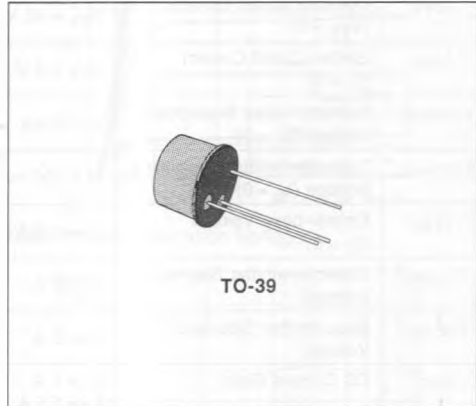


HIGH CURRENT, GENERAL PURPOSE TRANSISTOR

DESCRIPTION

The BFX 34 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 ideal 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_{EB0}	Emitter-base Voltage ($I_C = 0$)	6	V
I_C	Collector Current	5	A
P_{Tot}	Total Power Dissipation at $T_{case} \leq 25^\circ C$ $T_{case} \leq 25^\circ C$	0.87 5	W W
T_{stg}	Storage Temperature	- 65 to 200	$^\circ C$
T_j	Junction Temperature	200	$^\circ C$

THERMAL DATA

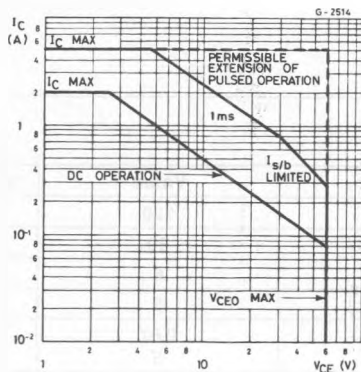
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	35	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	200	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($T_{case} = 25\ ^{\circ}C$ unless otherwise specified)

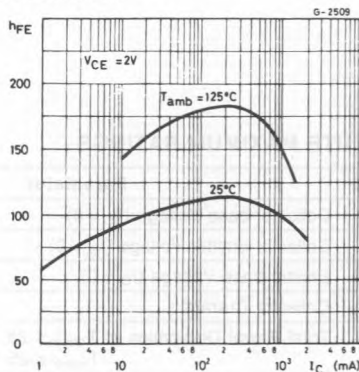
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CES}	Collector Cutoff Current ($V_{BE} = 0$)	$V_{CE} = 60\ V$			0.02	10	μA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 4\ V$			0.05	10	μA
$V_{(BR)CBO}^*$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = 5\ mA$		120			V
$V_{CE0(sus)}^*$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 100\ mA$		60			V
V_{EBO}^*	Emitter-base Voltage ($I_C = 0$)	$I_E = 1\ mA$		6			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 5\ A$	$I_B = 0.5\ A$		0.4	1	V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 5\ A$	$I_B = -0.5\ mA$		1.3	1.6	V
h_{FE}^*	DC Current Gain	$I_C = 1\ A$ $I_C = 1.5\ A$ $I_C = 2\ A$	$V_{CE} = 2\ V$ $V_{CE} = 0.6\ V$ $V_{CE} = 2\ V$	40	100 75 80	150	
f_T	Transition Frequency	$I_C = 0.5\ A$ $f = 20\ MHz$	$V_{CE} = 5\ V$	70	100		MHz
CEBO	Emitter-base Capacitance	$I_C = 0$ $f = 1\ MHz$	$V_{EB} = 0.5\ V$		300	500	pF
CCBO	Collector-base Capacitance	$I_E = 0$ $f = 1\ MHz$	$V_{CB} = 10\ V$		40	100	pF
t_{on}	Turn-on Time	$I_C = -0.5\ A$	$V_{CC} = -20\ V$		0.6	0.25	μs
t_{off}	Turn-off Time	$I_{B1} = -I_{B2} = -50\ mA$			0.6		1.2

* Pulsed : pulse duration = 300 μs , duty cycle = 1.5%.

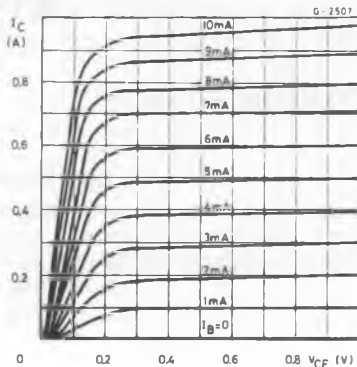
Safe Operating Areas.



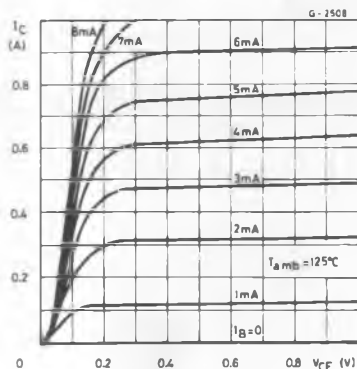
DC Current Gain.



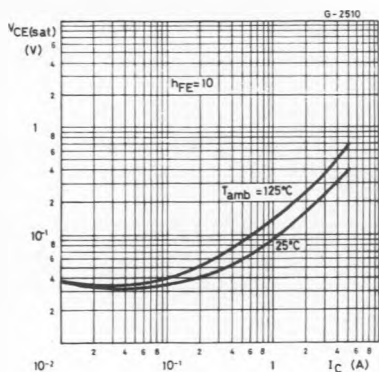
Output Characteristics.



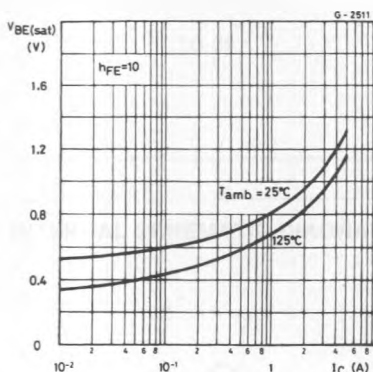
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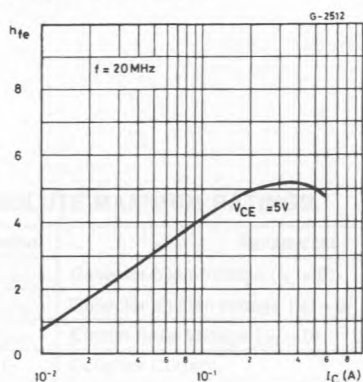
Collector-emitter Saturation Voltage.



Base-emitter Saturation Voltage.



Small Signal Current Gain.



Emitter-base and Collector-base Capacitances.

