BFX34

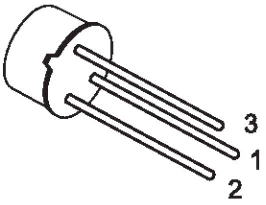
SILICON NPN TRANSISTOR

- STMicroelectronics PREFERRED SALESTYPE
- NPN TRANSISTOR

DESCRIPTION

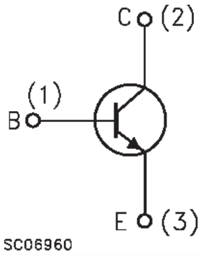
The BFX34 is a silicon epitaxial planar NPN transistor in Jedec TO-39 metal case, intented for high current applications.

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.



TO-39

INTERNAL SCHEMATIC DIAGRAM



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 $T_{case} \leq 25\ ^oC$ $T_{amb} \leq 25\ ^oC$	0.87 5	W W
T_{stg}	Storage Temperature	-65 to 200	^oC
T_j	Max. Operating Junction Temperature	200	^oC

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	35	$^oC/W$
$R_{thj\text{-}amb}$	Thermal Resistance Junction-amb	Max	200	$^oC/W$

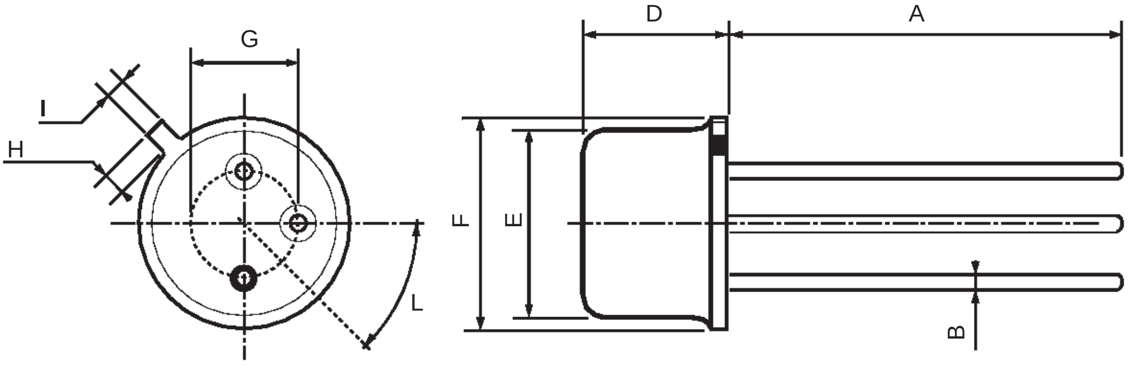
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current (V_{BE} = 0)	V_{CE} = 60 V		0.02	10	µA
I_{EBO}	Emitter Cut-off 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
$V_{CEO(sus)}^*$	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 A		1.3	1.6	V
h_{FE}^*	DC Current Gain	I_C = 1 A V_{CE} = 2 V I_C = 1.5 A V_{CE} = 0.6 V I_C = 2 A V_{CE} = 2 V	 40	100 75 80	 150	
f_T^*	Transition Frequency	I_C = 0.5 A V_{CE} = 5 V f = 20 MHz	70	100		MHz
C_{EBO}	Emitter-base Capacitance	I_C = 0.5 A V_{EB} = 5 V f = 1 MHz		300	500	pF
C_{CBO}	Collector-base Capacitance	I_E = 0 V_{CB} = 10 V f = 1 MHz		40	100	pF
t_{on}	Turn-on Time	I_C = -0.5 A V_{CC} = -20 V I_{B1} = -I_{B2} = -50 mA		0.6	0.25	µs
t_{off}	Turn-off Time			0.6	1.2	µs

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

TO-39 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^{o} (typ.)					



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