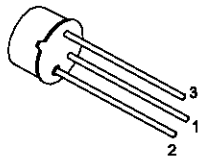
SGS-THOMSON MICROELECTRONICS

BFW43

HIGH VOLTAGE AMPLIFIER

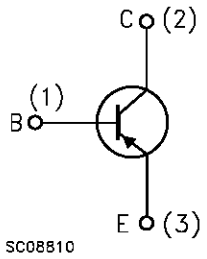
DESCRIPTION

The BFW43 is a silicon planar epitaxial PNP transistors in Jedec TO-18 metal case. It is designed for use in amplifiers where high voltage and high gain are necessary. In particular, its feature a V_{CEO} of 150V are specified over a wide range of curent.



TO-18

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage (I_E = 0)	-150	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)	-150	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)	-6	V
I_C	Collector Current	-0.1	A
P_{tot}	Total Dissipation at $T_{amb} \leq 25\ ^oC$ at $T_{case} \leq 25\ ^oC$	0.4 1.4	W W
T_{stg}	Storage Temperature	-55 to 200	^oC
T_j	Max. Operating Junction Temperature	200	^oC

THERMAL DATA

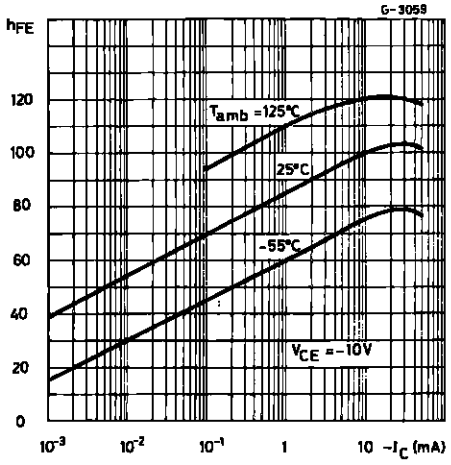
$R_{thj\text{-}case}$	Thermal Resistance Junction-Case Max	125	°C/W
$R_{thj\text{-}amb}$	Thermal Resistance Junction-Ambient Max	438	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

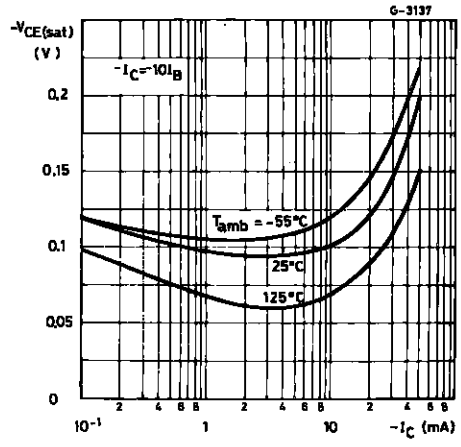
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CE} = -100 V V_{CE} = -100 V T_{amb} = 125 °C		-0.2 -0.03	-10 -10	nA µA
$V_{(BR)CBO}$*	Collector-Base Breakdown Voltage (I_E = 0)	I_C = -10 µA	-150			V
$V_{(BR)CEO}$*	Collector-Emitter Breakdown Voltage (I_B = 0)	I_C = -2 mA	-150			V
$V_{(BR)EBO}$*	Emitter-Base Breakdown Voltage (I_C = 0)	I_E = -10 µA	-6			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = -10 mA I_B = -1 mA		-0.1	-0.5	V
$V_{BE(sat)}$*	Base-Emitter Saturation Voltage	I_C = -10 mA I_B = -1 mA		-0.74	-0.9	V
h_{FE}*	DC Current Gain	I_C = -1 mA V_{CE} = -10 V I_C = -10 mA V_{CE} = -10 V I_C = -10 µA V_{CE} = -10 V T_{amb} = -55 °C	40 40	85 100 30		
f_T	Transition Frequency	V_{CE} = -10 V f = 20 MHz I_C = -1 mA I_C = -10 mA	 60	 50 		 MHz MHz
C_{EBO}	Emitter Base Capacitance	I_E = 0 V_{EB} = -0.5 V f = 1MHz		20	25	pF
C_{CBO}	Collector Base Capacitance	I_E = 0 V_{CB} = -5 V f = 1MHz		5	7	pF

* Pulsed: Pulse duration = 300 µs, duty cycle ≤ 1 %

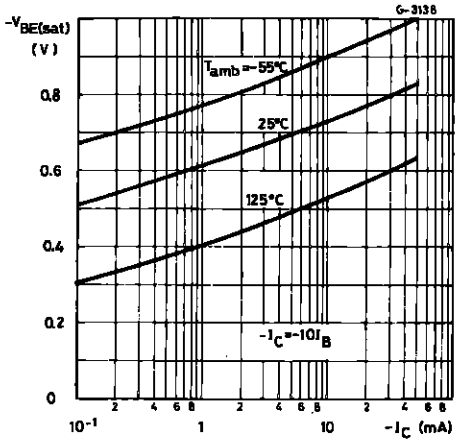
DC Current Gain.



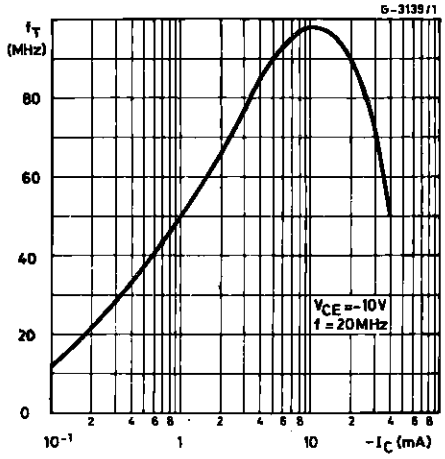
Collector-emitter Saturation Voltage.



Base-emitter Saturation Voltage.

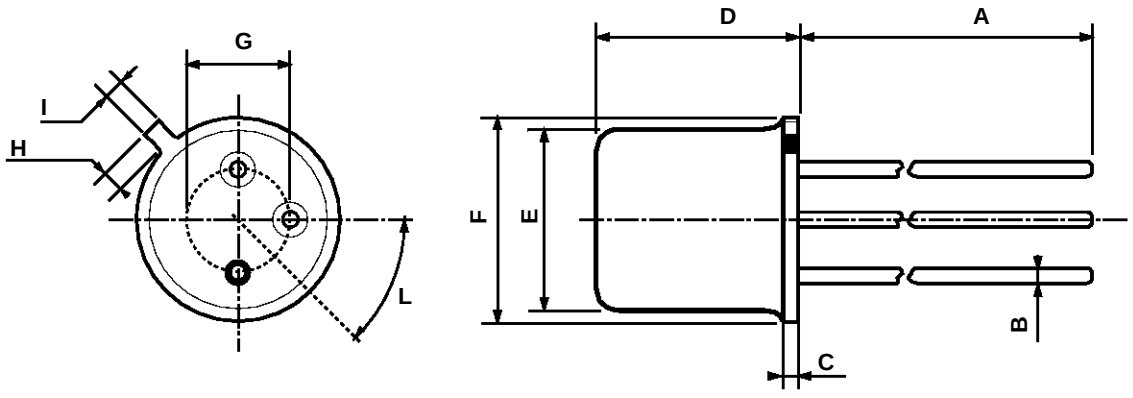


Transition Frequency.



TO-18 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A		12.7			0.500	
B			0.49			0.019
D			5.3			0.208
E			4.9			0.193
F			5.8			0.228
G	2.54			0.100		
H			1.2			0.047
I			1.16			0.045
L	45^{o}			45^{o}		



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