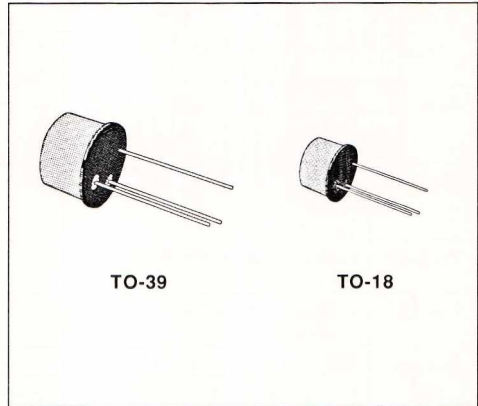


HIGH VOLTAGE AMPLIFIERS

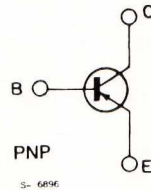
DESCRIPTION

The BFW43 and BFW44 are silicon planar epitaxial PNP transistors in Jedec TO-18 (BFW43) and Jedec TO-39 (BFW44) metal cases.

Both devices are designed for use in amplifiers where high voltage and high gain are necessary. In particular, they feature a V_{CE0} of 150 V and are specified over a wide range of currents.



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	- 100	mA
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ\text{C}$ for BFW 43	0.4	W
	for BFW 44	0.7	W
	at $T_{case} \leq 25^\circ\text{C}$ for BFW 43	1.4	W
	for BFW 44	2.5	W
T_{stg}, T_j	Storage and Junction Temperature	- 55 to 200	$^\circ\text{C}$

THERMAL DATA

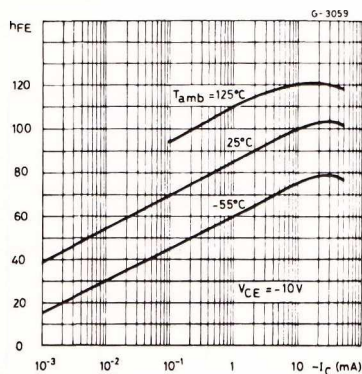
			BFW43	BFW44
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	125 °C/W	70 °C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	438 °C/W	250 °C/W

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$ unless otherwise specified)

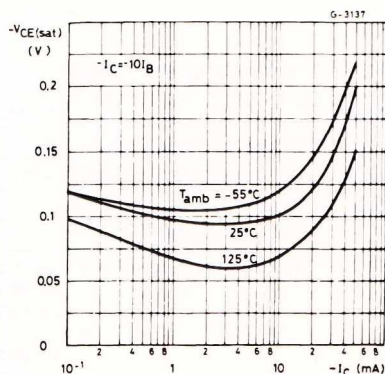
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = -100\text{ V}$ $V_{CB} = -100\text{ V}$ $T_{amb} = 125\text{ °C}$		- 0.2 - 0.03	- 10 - 10	nA μA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ($I_E = 0$)	$I_C = -10\text{ μA}$	- 150			V
$V_{(BR)CEO}^*$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

* Pulsed : pulse duration = 300 μs, duty cycle = 1 %.

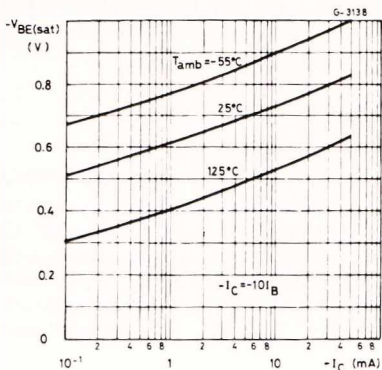
DC Current Gain.



Collector-emitter Saturation Voltage.



Base-emitter Saturation Voltage.



Transition Frequency.

