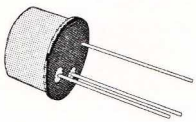
SGS-THOMSON
MICROELECTRONICS

BC143

AUDIO AMPLIFIER

DESCRIPTION

The BC143 is a silicon planar epitaxial PNP transistor specially designed for use in the driver of high power audio amplifiers.



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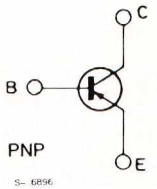
INTERNAL SCHEMATIC DIAGRAM



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ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage (I_E = 0)	– 60	V
V_{CEO}	Collector-emitter Voltage (I_B = 0)	– 60	V
V_{EBO}	Emitter-base Voltage (I_C = 0)	– 5	V
I_C	Collector Current	– 1	A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25$ °C at $T_{case} \leq 25$ °C	0.75 4	W W
T_{stg}, T_j	Storage and Junction Temperature	– 55 to 175	°C

THERMAL DATA

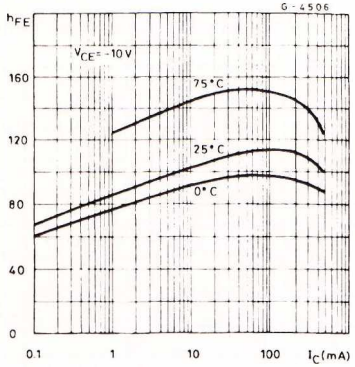
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	37	°C/W
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient	Max	200	°C/W

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

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current (I_E = 0)	V_{CB} = – 30 V V_{CB} = – 30 V	(T_{amb} = 150 °C)			– 50 – 50	nA µA
$V_{(BR)CBO}$	Collector-base Breakdown Voltage (I_E = 0)	I_C = 100 µA		– 60			V
$V_{(BR)CEO}$*	Collector-emitter Breakdown Voltage (I_B = 0)	I_C = 10 mA		– 60			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage (I_C = 0)	I_E = 10 µA		– 5			V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 500 mA I_C = 1A	I_B = 50 mA I_B = 100 mA		– 0.25 – 0.7	– 0.5 – 1	V V
V_{BE}*	Base-emitter Voltage	I_C = – 500 mA	V_{CE} = – 10 V		– 1.1		V
h_{FE}*	DC Current Gain	I_C = 10 mA I_C = 100 mA I_C = – 300 mA I_C = 500 mA	V_{CE} = – 10 V V_{CE} = – 10 V V_{CE} = – 1 V V_{CE} = – 1 V	20	110 110 40 25		
h_{fe}	High Frequency Current Gain	I_C = 50 mA f = 100 MHz	V_{CE} = – 10 V		1.5		
C_{CBO}	Collector-base Capacitance	I_E = 0 f = 1 MHz	V_{CB} = – 10 V		13		pF

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

DC Current Gain vs. Collector Current.



Base-emitter on Voltage vs. Collector Current.