

MICRO

ELECTRONICS

BC 143

GENERAL DESCRIPTION :

The BC143 is a PNP silicon planar epitaxial transistor. It features low saturation voltage, low collector cutoff current and high breakdown voltage. It is intended for use in driver stage of high power audio amplifiers. It can be supplied together with BC144 as a matched pair.

MECHANICAL OUTLINE



ABSOLUTE MAXIMUM RATINGS :

Continuous Power Dissipation @ $T_A=25^{\circ}\text{C}$, P_{max}	0.8W
Continuous Power Dissipation @ $T_A=45^{\circ}\text{C}$, P_{max}	0.708W
Continuous Power Dissipation @ $T_C=25^{\circ}\text{C}$, P_{max}	4W
Continuous Power Dissipation @ $T_C=75^{\circ}\text{C}$, P_{max}	2.86W
Maximum Collector Junction Temperature, T_j	200 $^{\circ}\text{C}$
Storage Temperature Range, T_{stg}	-55 $^{\circ}\text{C}$ to +200 $^{\circ}\text{C}$
Soldering Temperature (10 sec. time limit)	260 $^{\circ}\text{C}$
Continuous Collector Current, $I_{\text{C max}}$	-1A
Collector-Base Voltage, V_{CBO}	-60V
Collector-Emitter Voltage, V_{CEO}	-60V
Emitter-Base Voltage, V_{EBO}	-5V

ELECTRICAL CHARACTERISTICS @ $T_A=25^{\circ}\text{C}$ (unless otherwise stated) :

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage	V_{CBO}	-60			V	$I_{\text{C}}=-10\mu\text{A}$ $I_{\text{E}}=0$
Collector-Emitter Breakdown Voltage	V_{CEO}	-60			V	$I_{\text{C}}=-10\text{mA}$ $I_{\text{B}}=0$
Emitter-Base Breakdown Voltage	V_{EBO}	-5			V	$I_{\text{E}}=-10\mu\text{A}$ $I_{\text{C}}=0$
Collector Cutoff Current	I_{CBO}		-0.1	-50	nA	$V_{\text{CB}}=-30\text{V}$ $I_{\text{E}}=0$
Collector Cutoff Current	I_{CBO}		-0.002	-50	uA	$V_{\text{CB}}=-30\text{V}$ $I_{\text{E}}=0$ $T_A=75^{\circ}\text{C}$
Collector-Emitter Saturation Voltage	$V_{\text{CE}}(\text{sat})$		-0.3		V	$I_{\text{C}}=-500\text{mA}$ $I_{\text{B}}=-25\text{mA}$
Collector-Emitter Saturation Voltage	$V_{\text{CE}}(\text{sat})$		-0.25	-0.5	V	$I_{\text{C}}=-500\text{mA}$ $I_{\text{B}}=-50\text{mA}$
Collector-Emitter Saturation Voltage	$V_{\text{CE}}(\text{sat})$		-1.2		V	$I_{\text{C}}=-1000\text{mA}$ $I_{\text{B}}=-50\text{mA}$
Collector-Emitter Saturation Voltage	$V_{\text{CE}}(\text{sat})$		-0.7	-1	V	$I_{\text{C}}=-1000\text{mA}$ $I_{\text{B}}=-100\text{mA}$
Base-Emitter On Voltage	$V_{\text{BE}}(\text{on})$		-0.7		V	$V_{\text{CE}}=-10\text{V}$ $I_{\text{C}}=-10\text{mA}$
Base-Emitter On Voltage	$V_{\text{BE}}(\text{on})$		-0.75		V	$V_{\text{CE}}=-10\text{V}$ $I_{\text{C}}=-100\text{mA}$
Base-Emitter On Voltage	$V_{\text{BE}}(\text{on})$		-0.85		V	$V_{\text{CE}}=-1\text{V}$ $I_{\text{C}}=-300\text{mA}$
Base-Emitter On Voltage	$V_{\text{BE}}(\text{on})$		-0.93		V	$V_{\text{CE}}=-1\text{V}$ $I_{\text{C}}=-500\text{mA}$

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ELECTRICAL CHARACTERISTICS @ $T_A=25^{\circ}\text{C}$ (unless otherwise stated) :

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
D.C. Current Gain	h_{FE}		88			$V_{CE}=-10\text{V}$ $I_C=-10\text{mA}$
D.C. Current Gain	h_{FE}		85			$V_{CE}=-10\text{V}$ $I_C=-10\text{mA}$
D.C. Current Gain	h_{FE}	20	40			$V_{CE}=-1\text{V}$ $I_C=-300\text{mA}$
D.C. Current Gain	h_{FE}	15	30			$V_{CE}=-1\text{V}$ $I_C=-500\text{mA}$
High Frequency Current Gain	h_{fe}		1.5			$V_{CE}=-10\text{V}$ $I_C=-50\text{mA}$ $f=100\text{MHz}$
Collector-Base Capacitance	C_{ob}		13		pF	$V_{CB}=-10\text{V}$ $I_E=0$
BC143-BC144 match pair	h_{FE} ratio	0.8	1.25			$V_{CE}=-1\text{V}$ $I_C=-500\text{mA}$