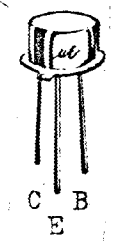
MICRO ELECTRONICS

BC142

GENERAL DESCRIPTION :

The BC142 is a NPN silicon planar epitaxial transistor. It features low saturation voltage, low collector cut-off current and high breakdown voltage. It is intended for use in driver stages of high power audio amplifiers. It can be supplied together with BC143 as a match pair.

MECHANICAL OUTLINE



ABSOLUTE MAXIMUM RATINGS :

Continuous Power Dissipation @ T_A=25°C, P max	0.8W
Continuous Power Dissipation @ T_A=45°C, P max	0.7W
Continuous Power Dissipation @ T_C=25°C, P max	5W
Continuous Power Dissipation @ T_C=75°C, P max	3.6W
Maximum Collector Junction Temperature, Tj	200°C
Storage Temperature Range, Tstg	-55°C to +200°C
Soldering Temperature (10 sec. time limit)	260°C
Continuous Collector Current, I_C max	1A
Collector-Base Voltage, V_{CBO}	80V
Collector-Emitter Voltage, V_{CEO}	60V
Emitter-Base Voltage, V_{EBO}	5V

ELECTRICAL CHARACTERISTICS @ T_A=25°C (unless otherwise stated) :

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS	
Collector-Base Breakdown Voltage	BV_{CBO}	80			V	I_C=100uA	I_E=0
Collector-Emitter Breakdown Voltage	LV_{CEO}	60			V	I_C=30mA	I_B=0
Emitter-Base Breakdown Voltage	BV_{EBO}	5			V	I_E=100uA	I_C=0
Collector Cutoff Current	I_{CBO}			50	nA	V_{CB}=40V	I_E=0
Collector Cutoff Current	I_{CBO}			50	uA	V_{CB}=40V, T_A=150°C	I_E=0
Collector-Emitter Saturation Voltage	V_{CE}(sat)		0.15	0.4	V	I_C=200mA	I_B=20mA
Collector-Emitter Saturation Voltage	V_{CE}(sat)		0.3		V	I_C=500mA	I_B=50mA
Base-Emitter Saturation Voltage	V_{BE}(sat)			1.5	V	I_C=200mA	I_B=20mA
Base-Emitter Voltage	V_{BE}		0.83		V	V_{CE}=2V	I_C=200mA
D.C. Current Gain	h_{FE}		100			V_{CE}=10V	I_C=10mA
D.C. Current Gain	h_{FE}		100			V_{CE}=10V	I_C=100mA
D.C. Current Gain	h_{FE}	20	80			V_{CE}=2V	I_C=200mA
D.C. Current Gain	h_{FE}		50			V_{CE}=2V	I_C=500mA
High Frequency Current Gain	h_{fe}		5			V_{CE}=10V, f=20MHz	I_C=50mA
Output Capacitance	Cob		12		pF	V_{CE}=10V	I_E=0
BC142-BC143 match-pair	h_{FE} ratio	0.8		1.25		V_{CE}=10V	I_C=50mA

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