

BC 207
BC 208
BC 209

SILICON PLANAR NPN

GENERAL PURPOSE AUDIO AMPLIFIERS

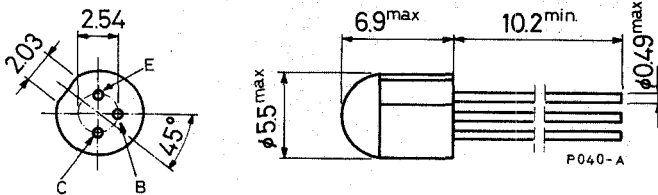
The BC 207, BC 208 and BC 209 are silicon planar epitaxial NPN transistors in TO-18 epoxy package. They are intended for use in driver or input stages of audio amplifier and in signal processing circuits of TV receivers.

ABSOLUTE MAXIMUM RATINGS

ABSOLUTE MAXIMUM RATINGS		BC 207	BC 208 BC 209
V_{CBO}	Collector-base voltage ($I_E = 0$)	50 V	25 V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)	45 V	20 V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	5 V	
I_C	Collector current	100 mA	
→ P_{tot}	Total power dissipation at $T_{amb} \leq 25^\circ\text{C}$	0.3 W	
	at $T_{case} \leq 25^\circ\text{C}$	0.5 W	
T_{stg}	Storage temperature	-55 to 125 °C	
T_j	Junction temperature	125 °C	

MECHANICAL DATA

Dimensions in mm



TO-18 epoxy

BC 207
BC 208
BC 209

THERMAL DATA

$R_{th\ j-case}$	Thermal resistance junction-case	max	200	°C/W
→ $R_{th\ j-amb}$	Thermal resistance junction-ambient	max	330	°C/W

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

Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CBO} Collector cutoff current ($I_E = 0$)	$V_{CB} = 40\text{ V}$ $V_{CB} = 40\text{ V}$ $T_{amb} = 65\text{ °C}$			50 50	nA μA
$V_{(BR)\ CBO}$ Collector-base breakdown voltage ($I_E = 0$)	$I_C = 10\ \mu\text{A}$ for BC 207 for BC 208-BC 209	50 25			V V
$V_{(BR)\ CEO}$ Collector-emitter breakdown voltage ($I_B = 0$)	$I_C = 10\text{ mA}$ for BC 207 for BC 208-BC 209	45 20			V V
$V_{(BR)\ EBO}$ Emitter-base breakdown voltage ($I_C = 0$)	$I_E = 10\ \mu\text{A}$	5			V
$V_{CE(sat)}$ * Collector-emitter saturation voltage	$I_C = 10\text{ mA}$ $I_B = 0.5\text{ mA}$ $I_C = 100\text{ mA}$ $I_B = 5\text{ mA}$			0.25 0.6	V V
h_{FE} DC current gain	$I_C = 2\text{ mA}$ $V_{CE} = 5\text{ V}$ for BC 207 for BC 207 Gr. A for BC 207 Gr. B for BC 208 for BC 208 Gr. A for BC 208 Gr. B for BC 208 Gr. C for BC 209 for BC 209 Gr. B for BC 209 Gr. C	110 110 200 110 110 200 420 200 200 420	230 180 290 350 180 290 520 350 290 520	450 220 450 800 220 450 800 800 450 800	— — — — — — — — — — —

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

ELECTRICAL CHARACTERISTICS (continued)

Parameter	Test conditions	Min.	Typ.	Max.	Unit
h_{FE} DC current gain	$I_C = 10 \mu A$ $V_{CE} = 5 V$ for BC 207 for BC 207 Gr. A for BC 207 Gr. B for BC 208 for BC 208 Gr. A for BC 208 Gr. B for BC 208 Gr. C for BC 209 for BC 209 Gr. B for BC 209 Gr. C	40	120	150	— — — — — — — — —
f_T Transition frequency	$V_{CE} = 5 V$ $I_C = 10 mA$		200		MHz
NF Noise figure	$I_C = 0.2 mA$ $V_{CE} = 5 V$ $R_g = 2 k\Omega$ $f = 1 kHz$ $B = 200 Hz$ for BC 207 for BC 208 for BC 209		2	10	dB dB dB
C_{CBO} Collector-base capacitance	$I_E = 0$ $V_{CB} = 10 V$ $f = 1 MHz$		3.1	6	pF
h_{ie} Input impedance	$I_C = 2 mA$ $V_{CE} = 5 V$ $f = 1 kHz$ for BC 207 for BC 207 Gr. A for BC 207 Gr. B for BC 208 for BC 208 Gr. A for BC 208 Gr. B for BC 208 Gr. C for BC 209 for BC 209 Gr. B for BC 209 Gr. C		4	7	k Ω k Ω k Ω k Ω k Ω k Ω k Ω k Ω k Ω k Ω