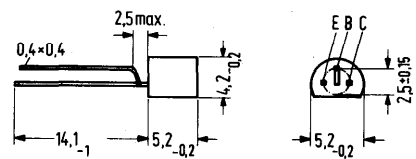


PNP Silicon Transistors

BC 212
BC 213

BC 212 and BC 213 are epitaxial PNP silicon planar transistors in TO 92 plastic package (10 A 3 DIN 41 868). They are intended for use in AF input and driver stages as well as in DC voltage amplifiers. The transistors are provided for low-noise input stages and as complementary transistors to BC 182 and BC 183.

Type	Ordering code
BC 212 ¹⁾	Q62702-C242
BC 212 A	Q62702-C374-V1
BC 212 B	Q62702-C374-V2
BC 213 ¹⁾	Q62702-C564
BC 213 A	Q62702-C1159
BC 213 B	Q62702-C1160
BC 213 C	Q62702-C1158



Mounting instruction: Fixing hole dia 0.6

Approx. weight 0.25 g

Dimensions in mm

Maximum ratings		BC 212	BC 213	
Collector-emitter voltage	$-V_{CE0}$	50	30	V
Collector-base voltage	$-V_{CBO}$	60	45	V
Emitter-base voltage	$-V_{EBO}$	5	6	V
Collector current	$-I_C$	200	200	mA
Base current	$-I_B$	50	50	mA
Junction temperature	T_j	150	150	°C
Storage temperature range	T_{stg}	-65 to +150	-65 to +150	°C
Total power dissipation	P_{tot}	300	300	mW
Thermal resistance				
Junction to ambient air	R_{thJA}	≤ 420	≤ 420	K/W

¹⁾ If the order does not include any exact indication of the current amplification group desired, a transistor of a current amplification group just available from stock will be delivered.

BC 212
BC 213

Static characteristics ($T_{amb} = 25^{\circ}\text{C}$)

The transistors are grouped in accordance with the DC current gain h_{FE} , and are marked by A, B, and C. At $-V_{CE} = 5\text{ V}$ and the collector currents indicated below the following static characteristics apply:

Type	BC 212, BC 213	BC 212, BC 213	BC 213
h_{FE} group	A	B	C
$-I_C$ (mA)	$h_{FE} (I_C/I_B)$	$h_{FE} (I_C/I_B)$	$h_{FE} (I_C/I_B)$
0.01	> 90	150	270
2	170 (120 to 220)	290 (180 to 460)	500 (380 to 800)
100	120	200	400

Static characteristics ($T_{amb} = 25^{\circ}\text{C}$)

Type	BC 212, BC 213			
$-I_C$ (mA)	$-I_B$ (mA)	$-V_{BE}$ (V)	$-V_{CEsat}$ (V)	$-V_{BEsat}$ (V)
0.01	—	0.57	—	—
2	—	0.62 (0.55 to 0.7)	—	—
100	5	—	< 0.6 ¹⁾	< 1.1
100	—	0.82	—	—

	BC 212	BC 213	
Collector cutoff current ($-V_{CB} = 30\text{ V}$)	< 15	< 15	nA
Emitter cutoff current ($-V_{EB} = 4\text{ V}$)	< 15	< 15	nA
Collector-emitter breakdown voltage ($-I_C = 2\text{ mA}$)	> 50	> 30	V
Collector-base breakdown voltage ($-I_C = 10\text{ }\mu\text{A}$)	> 60	> 45	V
Emitter-base breakdown voltage ($-I_C = 10\text{ }\mu\text{A}$)	> 5	> 5	V

1) The transistors is overloaded to such an extent that the DC current gain decreases to $h_{FE} = 20$.

BC 212
BC 213

Dynamic characteristics ($T_{amb} = 25^{\circ}\text{C}$)

$-I_C = 2\text{ mA}; -V_{CE} = 5\text{ V}; f = 1\text{ kHz}$

Type	BC 212, BC 213	BC 212, BC 213	BC 213	
h_{FE} group	A	B	C	
h_{11e}	2.7 (1.6 to 4.5)	4.5 (3.2 to 8.5)	8.7 (6 to 15)	$\text{k}\Omega$
h_{12e}	1.5	2	3	10^{-4}
h_{21e}	220	330	600	-
h_{22e}	18 (<30)	30 (<60)	60 (<110)	μS

Dynamic characteristics ($T_{amb} = 25^{\circ}\text{C}$)

Transition frequency ($-I_C = 10\text{ mA};$

$-V_{CE} = 5\text{ V}; f = 100\text{ MHz}$)

Collector-base capacitance

($-V_{CB} = 10\text{ V}; I_E = 0; f = 1\text{ MHz}$)

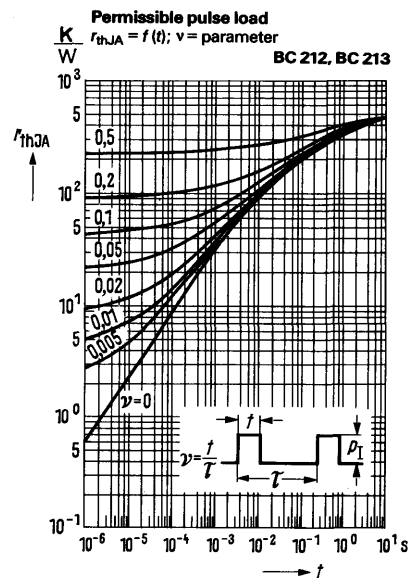
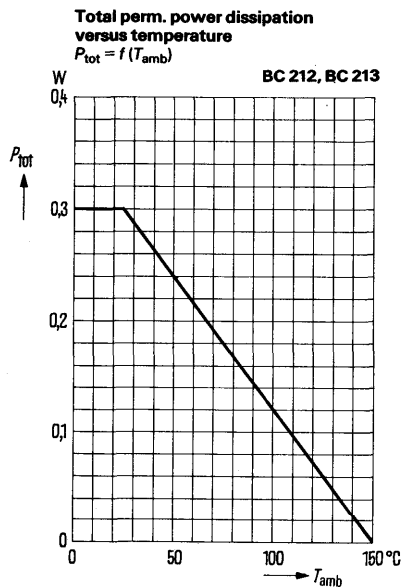
Emitter-base capacitance

($-V_{EB} = 0.5\text{ V}; I_E = 0; f = 1\text{ MHz}$)

Noise figure ($-I_C = 0.2\text{ mA};$

$-V_{CE} = 5\text{ V}; f = 1\text{ kHz}; R_g = 2\text{ k}\Omega$)

	BC 212	BC 213	
f_T	> 200	> 200	MHz
C_{CBO}	4 (<6)	4 (<6)	pF
C_{EBO}	8	8	pF
NF	2 (<10)	2 (<10)	dB



The further characteristic curves for these transistors comply with those of the types BC 307 and BC 308.