

DODATEK. DANE KATALOGOWE WYBRANYCH TRANZYSTORÓW

BC107, BC108, BC109, BC190

Wzmocnienie stałoprądowe b dla $U_{CE} = 5\text{ V}$

Grupa	A	B	C
$I_C = 10\ \mu\text{A}$	90	150 (> 40)	270 (> 100)
$I_C = 2\ \text{mA}$	180	290	520
$I_C = 20\ \text{mA}$	220	320	620

Napięcie baza-emiter U_{BE} dla $U_{CE} = 5\text{ V}$

Grupa	A	B	C
$I_C = 10\ \mu\text{A}$	0,5		
$I_C = 2\ \text{mA}$	0,62 (0,55 ... 0,7)		
$I_C = 20\ \text{mA}$	0,7		

Parametry macierzy h dla $U_{CE} = 5\text{ V}$, $I_C = 2\ \text{mA}$, $f = 1\ \text{kHz}$

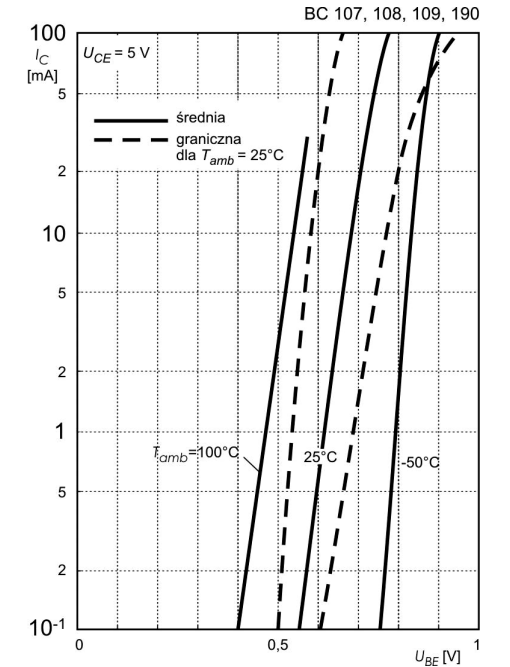
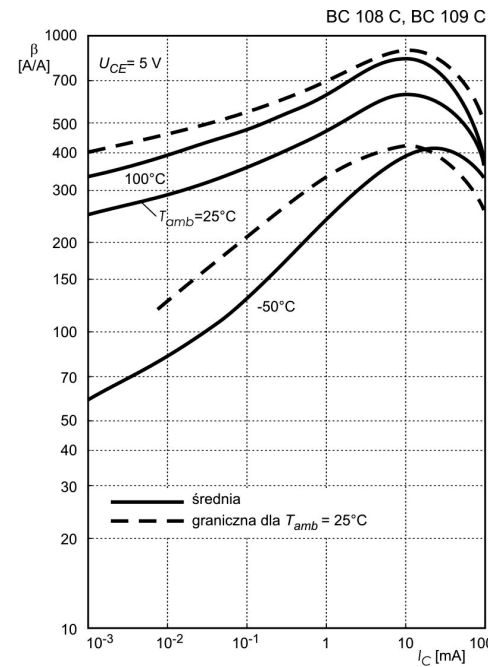
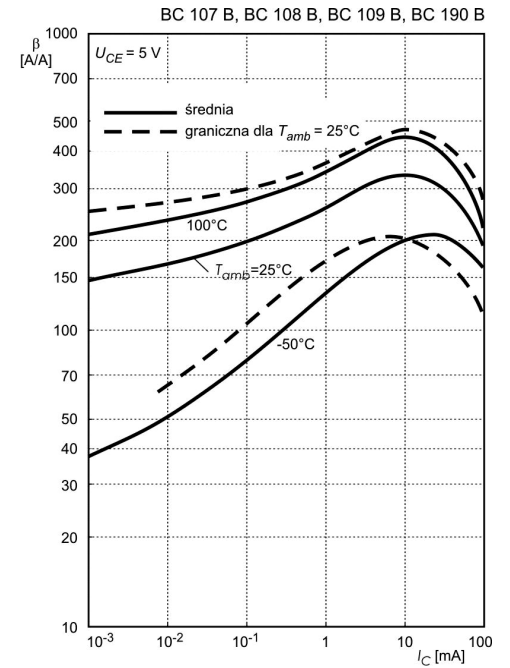
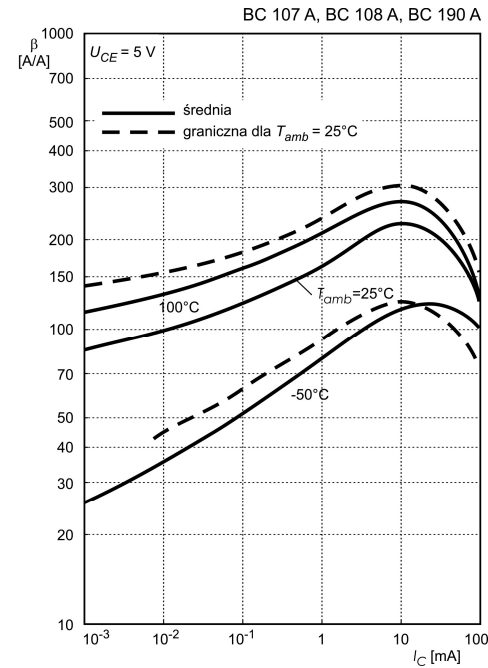
Grupa	A	B	C
h_{11e} [k Ω]	2,7 (1,6 ... 4,5)	4,5 (3,2 ... 8,5)	8,7 (6 ... 15)
h_{21e} [A/A]	222 (125 ... 260)	330 (240 ... 500)	600 (450 ... 900)
h_{12e} [V/V]	$1,5 \cdot 10^{-4}$	$2 \cdot 10^{-4}$	$3 \cdot 10^{-4}$
h_{22e} [μS]	18 (< 30)	60 (< 60)	60 (< 110)

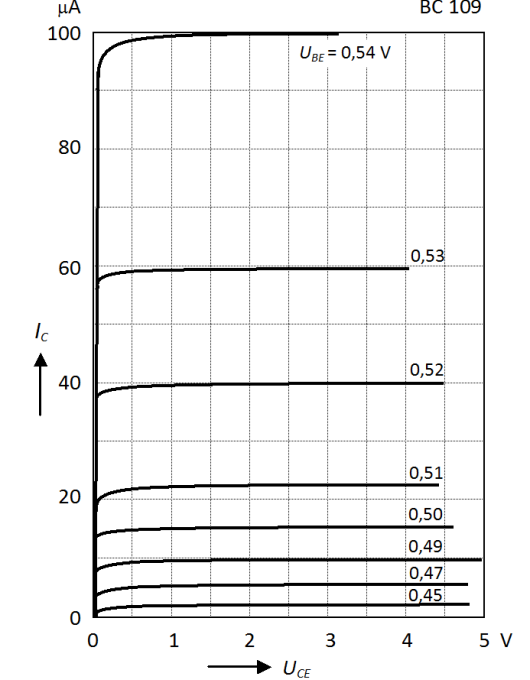
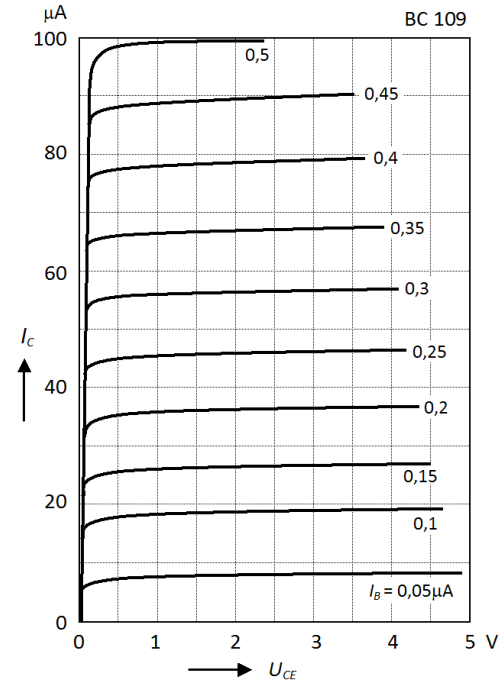
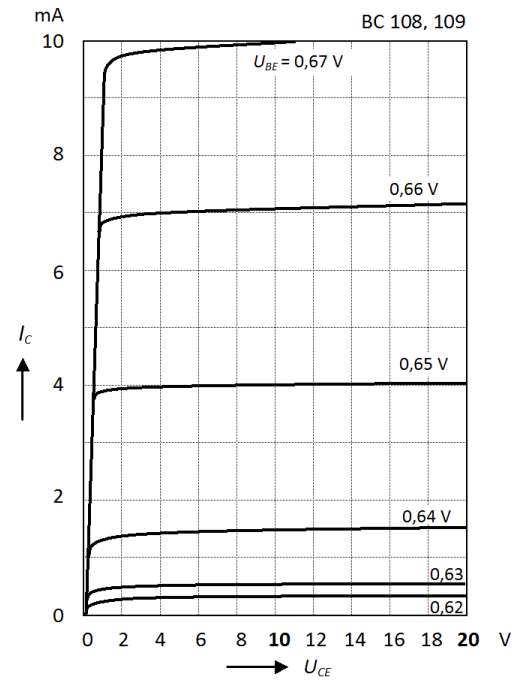
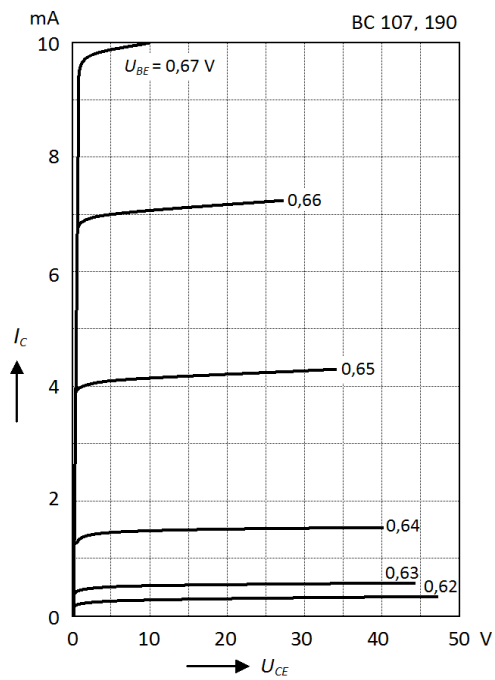
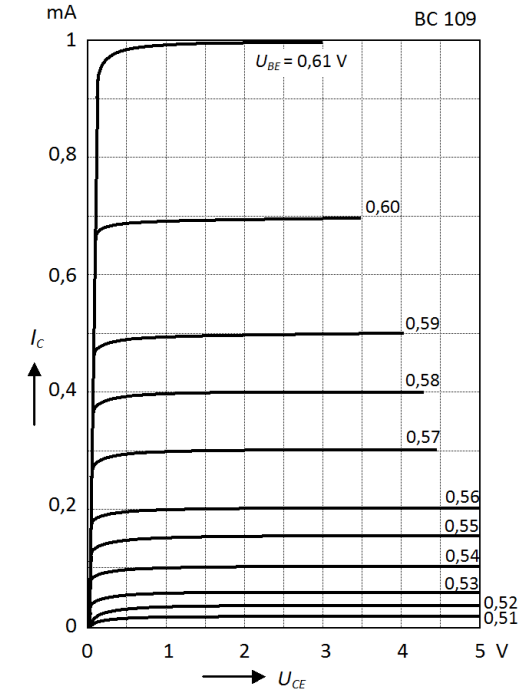
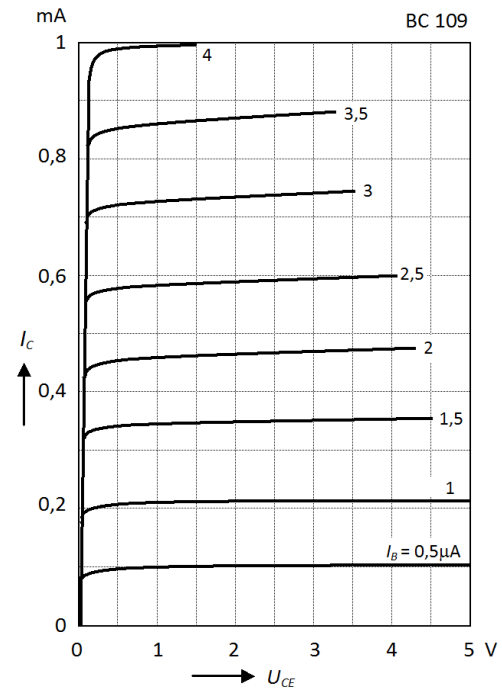
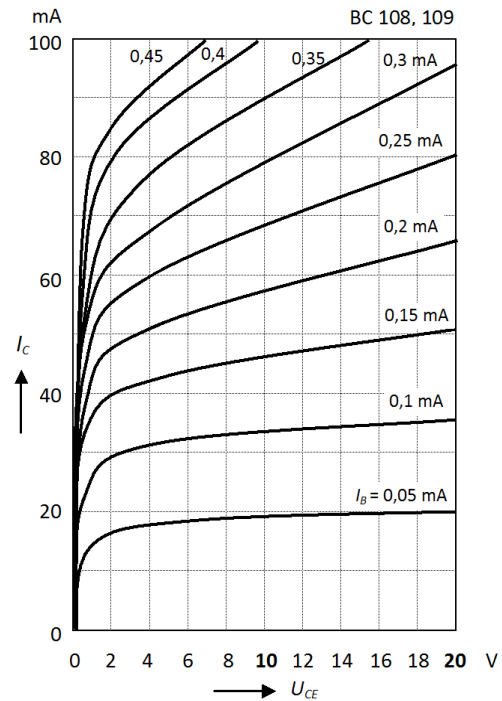
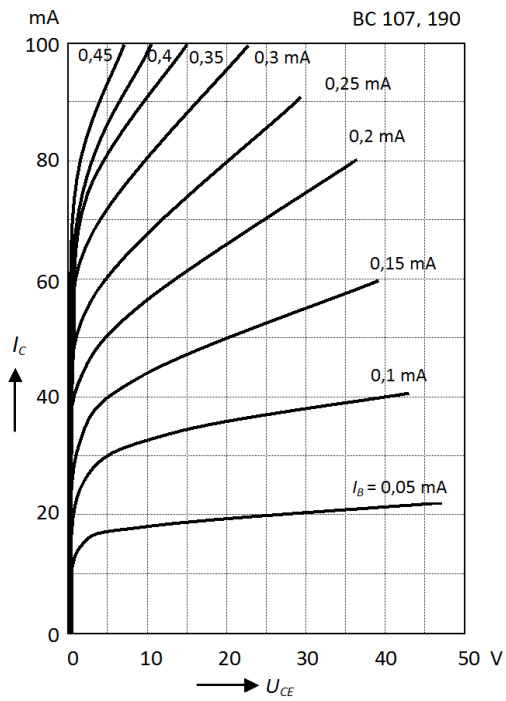
Częstotliwość graniczna f_T

Tranzystor	BC107	BC108	BC109	BC190
$U_{CE} = 3\text{ V}$, $I_C = 0,5\ \text{mA}$	85	85	45	60
$U_{CE} = 5\text{ V}$, $I_C = 10\ \text{mA}$	250 (> 150)	250 (> 150)	300 (> 150)	200 (> 150)

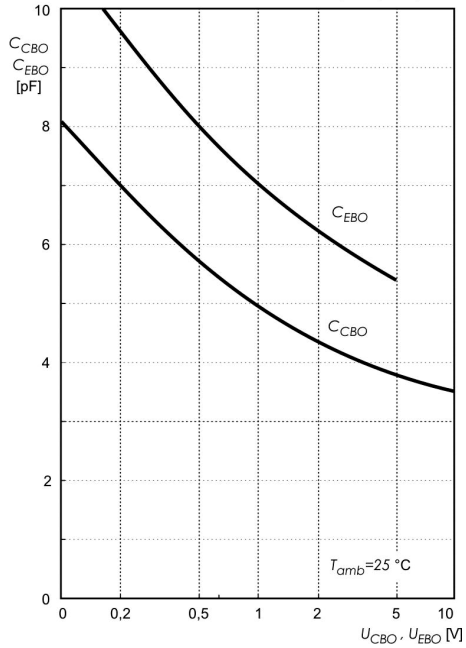
Pojemności złączone: C_{CB0} i C_{EB0}

Tranzystor	BC107	BC108	BC109	BC190
$U_{CB0} = 10\ \text{V}$, $f = 1\ \text{MHz}$	C_{CB0} [pF]	< 4,5	< 4,5	< 4,5
$U_{EB0} = 0,5\ \text{V}$, $f = 1\ \text{MHz}$	C_{EB0} [pF]	8	8	8

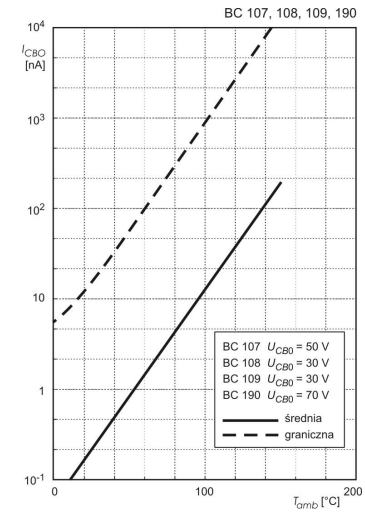
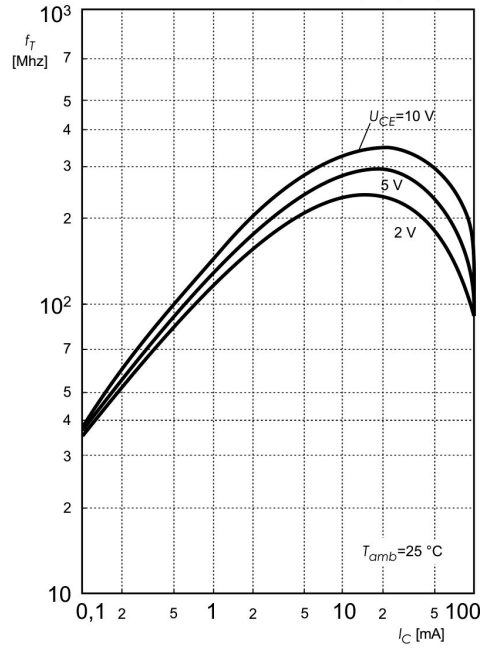




BC 107, 108, 109, 190



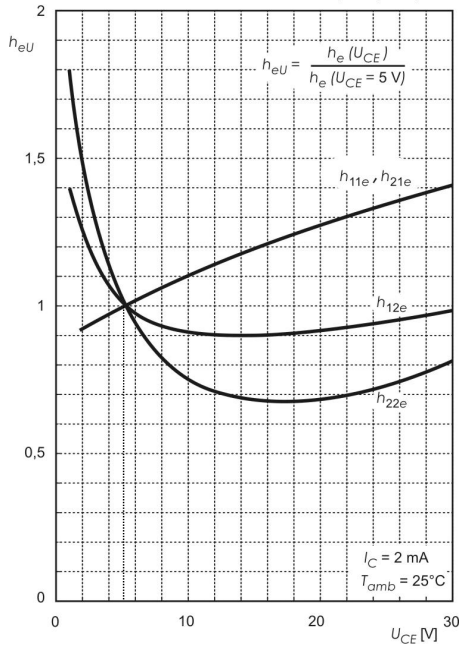
BC 107, 108, 109, 190



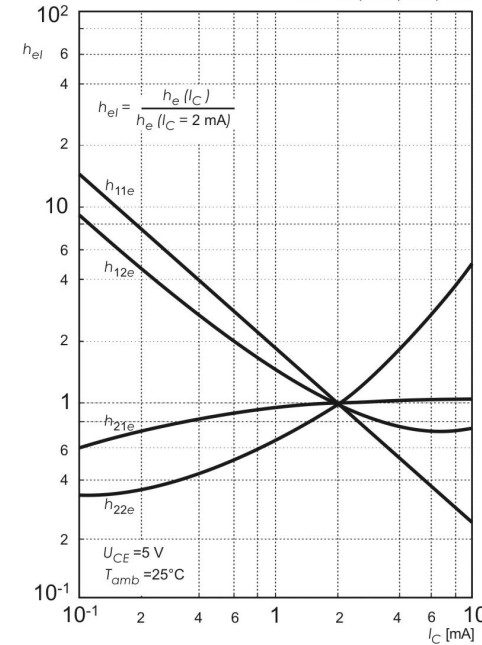
TYPOSZEREGI WARTOŚCI REZYSTORÓW I KONDENSATORÓW

szereg E-6 dla ±20%	szereg E-12 dla ±10%	szereg E-24 dla ±5%
10	10	10
		11
	12	12
15	15	13
		15
	18	16
		18
22	22	20
		22
	27	24
		27
		30
33	33	33
		36
	39	39
		43
47	47	47
		51
	56	56
68	68	62
		68
	82	75
		82
		91
C > 1μF	1nF < C < 1μF	C < 1nF

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$$h_{ij}(I_C, U_{CE}) = h_{ij}(2\text{mA}, 5\text{V}) \cdot h_{eU}(U_{CE}) \cdot h_{eI}(I_C)$$

np. dla BC 108B $h_{11}(4\text{mA}, 10\text{V}) = 4,5\text{k} \cdot 1,1 \cdot 0,5 = 2,5\text{k}$
 $h_{21}(4\text{mA}, 10\text{V}) = 330 \cdot 1,1 \cdot 1,05 = 381$

Przybliżoną wartość elementów szeregu możemy otrzymać ze wzoru

$$R_{i+1} = R_i \sqrt[10]{10} \text{ dla } i = 1 \quad R_i = 1$$

gdzie: i - kolejność (pozycja w szeregu), E - typ szeregu (np. dla E-24, E = 24)