

BF 177

BF 178

TRANZISTOR Si-PLANAR-npn

Si-PLANAR-npn TRANSISTOR

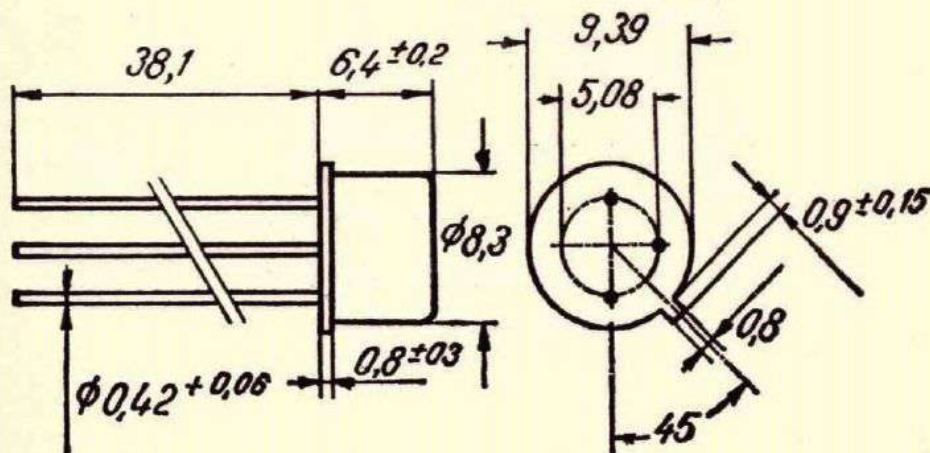
Tranzistoarele BF 177 și BF 178 sînt destinate etajelor video de putere din receptoarele TV. Tranzistorul BF 177 este utilizat de asemenea pentru oscilatoarele de referință din receptoarele TV în culori.

The transistors BF 177 and BF 178 are intended for video power stages of TV sets. The BF 177 is also used for reference oscillator stage of color TV-sets.

CARACTERISTICI PRINCIPALE

QUICK REFERENCE DATA

	BF 177	BF 178
$V_{CBO \text{ max}}$	100	1160 V
$V_{CEO \text{ max}}$	60	115 V
$I_C \text{ max}$		50 mA
$F_{\text{tot max}}$	$T_A = 25^\circ\text{C} / T_C = 25^\circ\text{C}$	0,6/1,7 W
f_T	$I_C = 10 \text{ mA}; V_{CE} = 20 \text{ V}$ $f = 100 \text{ MHz}$	120 MHz
C_{12e}	$I_C = 10 \text{ mA}; V_{CE} = 20 \text{ V}$ $f = 1 \text{ MHz}$	3,2 pF



Capsulă metalică J.E.D.E.C. TO-5

Metal case

Dimensiuni
Greutate

(Dimensions)
(Weight)

în mm
1,5 g



BF 177 BF 178

VALORI LIMITĂ ABSOLUTE ABSOLUTE MAXIMUM RATINGS		$T_A = 25^\circ\text{C}$	Cu excepția altor specificații Unless otherwise specified	
			BF 177	BF 178
Tensiunea colector-bază Collector-base voltage	V_{CBO}		100	160 V
Tensiunea emitor-bază Emitter-base voltage	V_{EBO}			5 V
Tensiunea colector-emitor Collector-emitter voltage	V_{CEO}		60	115 V
Curentul de colector Collector current	I_C			50 mA
Curentul de bază Base current	I_B			10 mA
Puterea totală disipată Total power dissipation	P_{tot} P_{tot}	$T_A = 25^\circ\text{C}$ $T_C = 25^\circ\text{C}$		0,6 1,7 W
Temperatura joncțiunii Junction temperature	T_j			200 $^\circ\text{C}$
Temperatura de stocare Storage temperature	T_{stg}			-55...+175 $^\circ\text{C}$
Rezistența termică joncțiune-ambiant Junction-ambient thermal resistance	R_{thj-a}			≤ 240 $^\circ\text{C/W}$
Rezistența termică joncțiune-capsulă Junction-case thermal resistance	R_{thj-c}			≤ 45 $^\circ\text{C/W}$



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CARACTERISTICI STATICE STATIC CHARACTERISTICS		$T_A = 25^\circ\text{C}$	Cu excepția altor specificații Unless otherwise specified	
Raportul static de transfer direct de curent D.C. forward current transfer ratio		$V_{CE} = 20 \text{ V}$	h_{21e}	> 20
Tensiunea colector-emitor Collector-emitter voltage		$R_{BE} \leq 1 \text{ k}\Omega$	BF 177 V_{CER}	BF 178 160 V
Curentul rezidual de colector Collector cutoff current		$V_{CE} = V_{CER \text{ max}}$ $T_j < 200^\circ\text{C}$	I_{CER}	$0,03(<4) \text{ mA}$
$R_B = 1 \text{ k}\Omega$; $R_E = 100 \text{ }\Omega$; $R_C = 3,9 \text{ k}\Omega$		$V_{CE} = V_{CES}$; $V_{EB} = 0$	I_{CES}	200 mA
Tensiunea bază-emitor Emitter-base voltage		BF 177 $I_C = 15 \text{ mA}$; $V_{CE} = 10 \text{ V}$		
		BF 178 $I_C = 30 \text{ mA}$; $V_{CE} = 20 \text{ V}$	V_{BE}	$0,75(<1,2) \text{ V}$



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CARACTERISTICI DINAMICE DYNAMIC CHARACTERISTICS

Cu excepția altor specificații
Unless otherwise specified

$T_A = 25^\circ\text{C}$

Frecvența de tranziție
Transition frequency

MHz

$V_{CE} = 20\text{ V}$
 $I_C = 10\text{ mA}$
 $f = 100\text{ MHz}$

f_T

120

Capacitatea de transfer invers
Feedback capacitance

pF

$V_{CE} = 20\text{ V}$
 $I_C = 10\text{ mA}$
 $f = 1\text{ MHz}$

$-C_{12e}$

3,2(<3,5)

Constanta de timp bază-colector
Base-collector time constant

ps

$V_{CE} = 10\text{ V}$
 $I_C = 10\text{ mA}$
 $f = 25\text{ MHz}$

$r_{bb'} \cdot C_{b'c}$

25(<100)

Tensiunea colector-emitor în
întă frecvență
High frequency collector-emitter
voltage

$T_j = 150^\circ\text{C}$

$I_C = 15\text{ mA}$
 $I_C = 30\text{ mA}$
 $T_j = 150^\circ\text{C}$

$V_{CE\text{ sat HF}}$

10

V

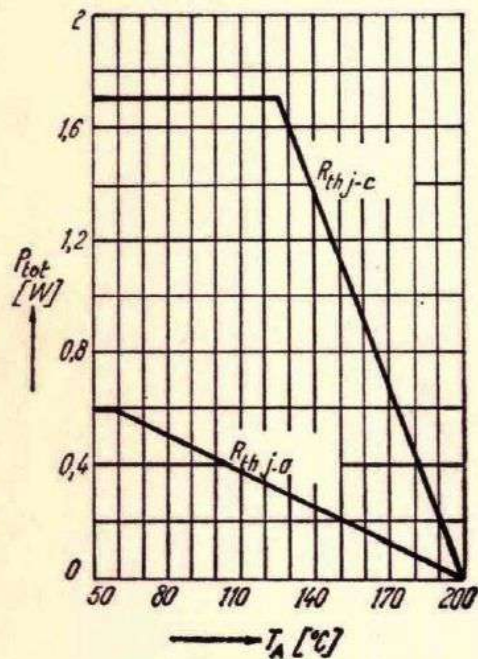
$V_{CE\text{ sat HF}}$

15

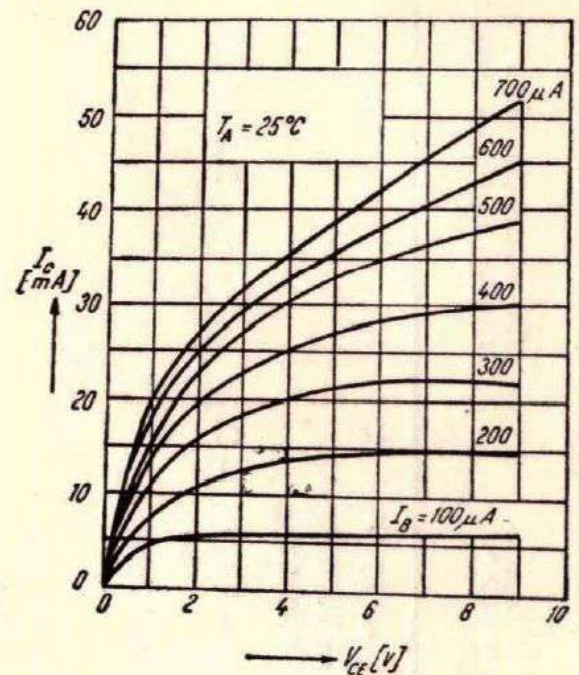
V

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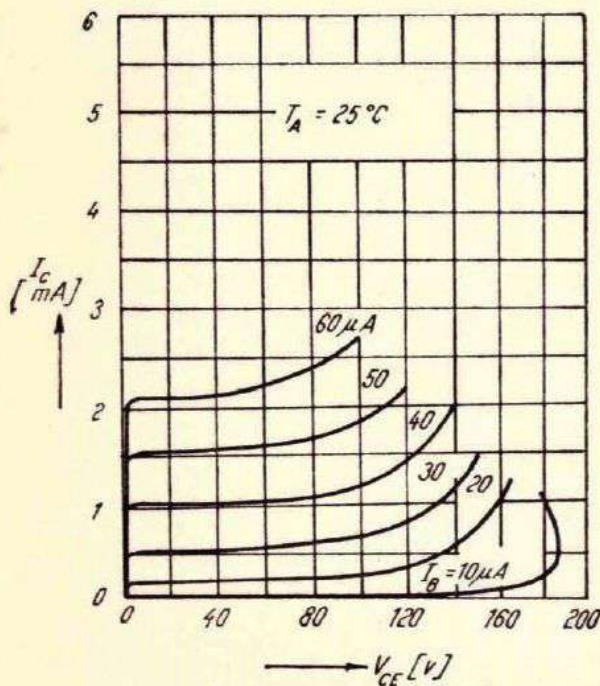
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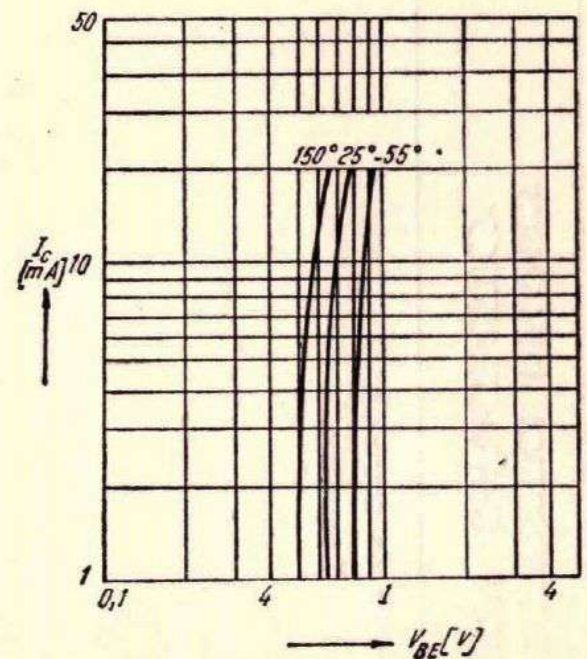
Puterea totală disipată
Total power dissipation



Caracteristici de ieșire
Output characteristics



Caracteristici de ieșire
Output characteristics



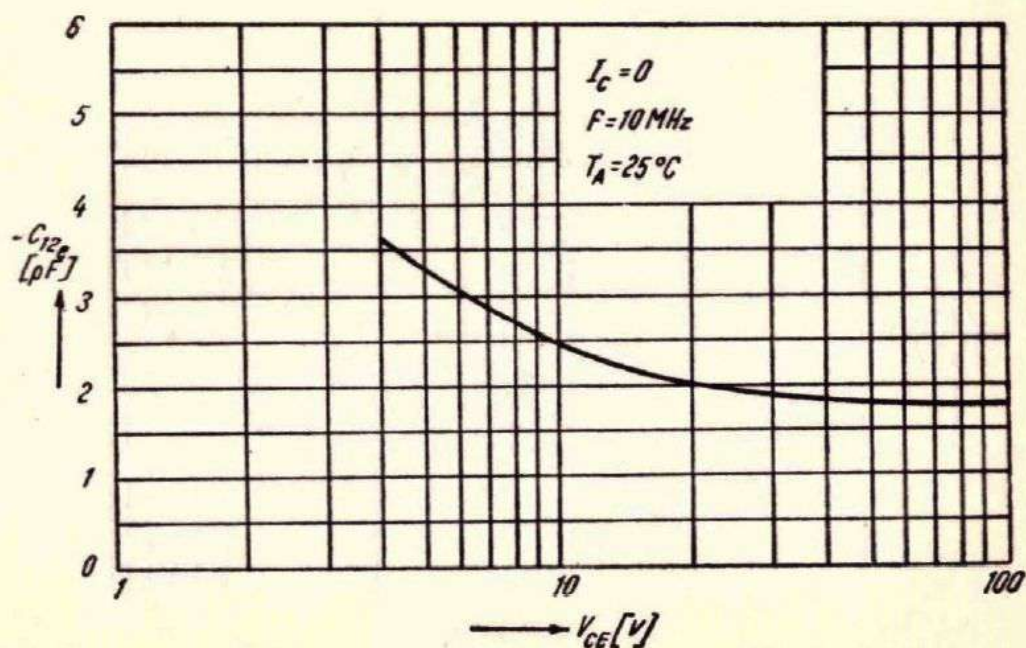
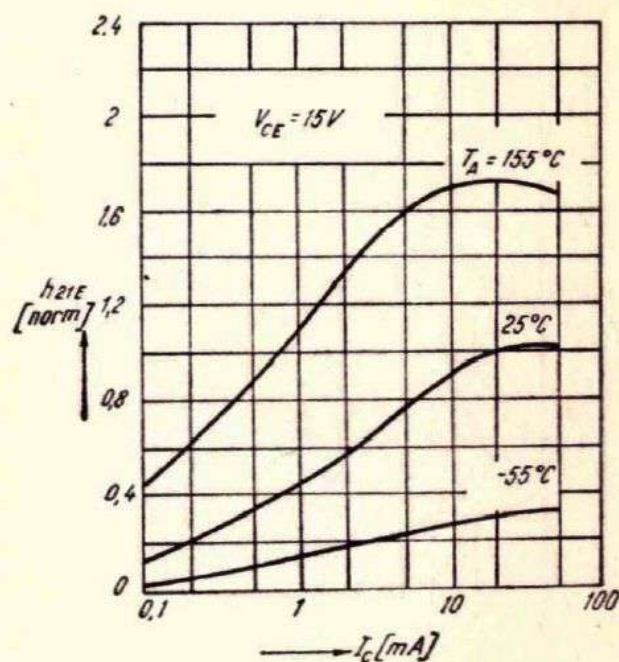
Transconductanța
Transconductance



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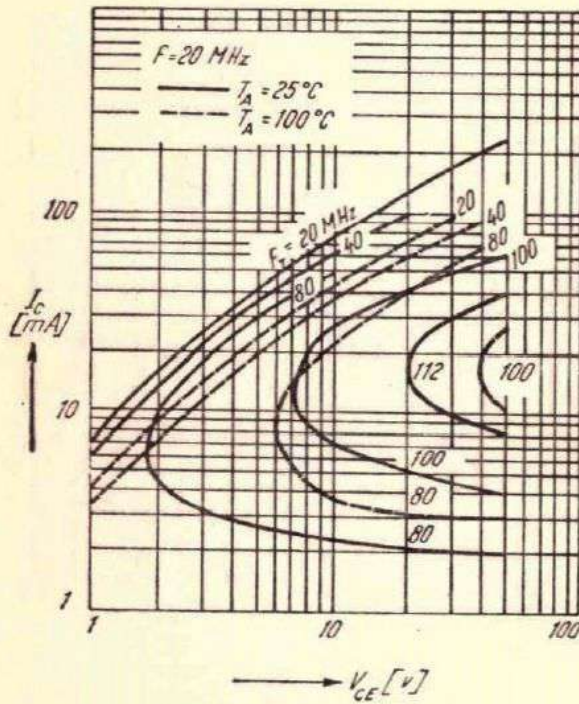
Raportul static de transfer direct de
curent
D.C. forward current transfer ratio



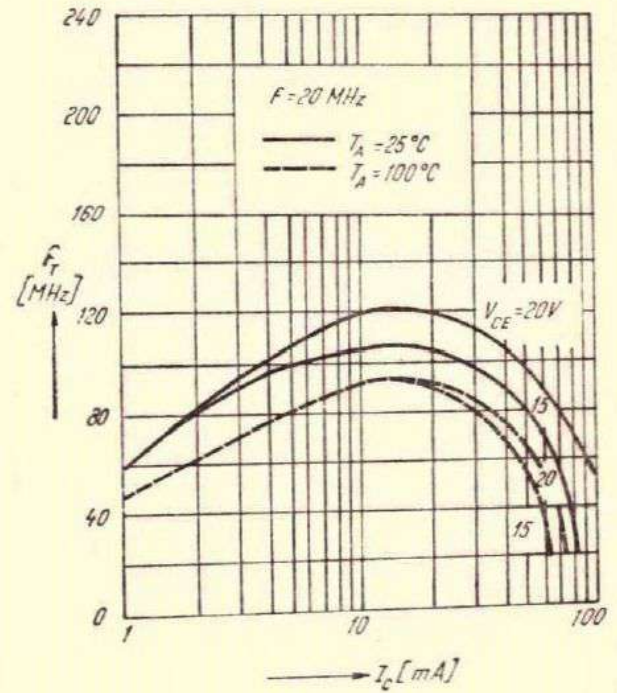
Capacitatea de transfer invers
Feedback capacitance

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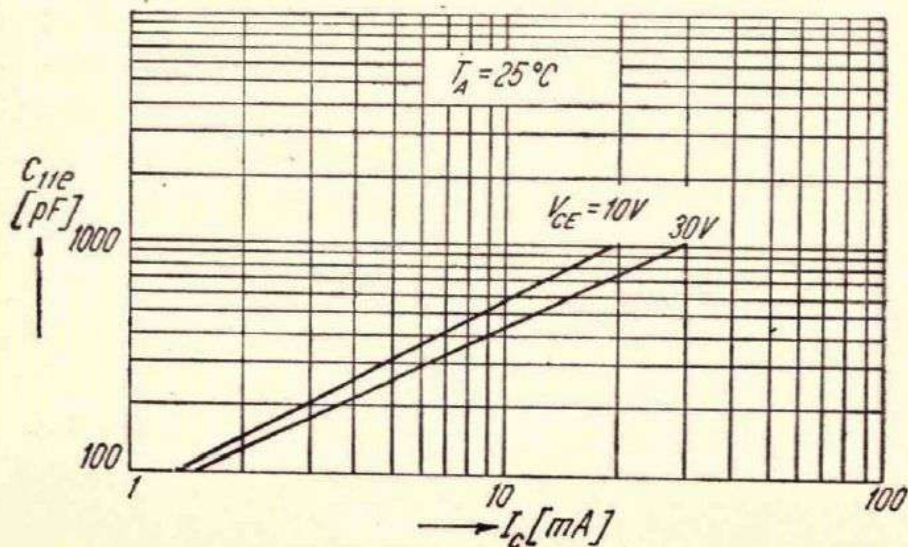
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Curbe iso- f_T
Iso- f_T curves



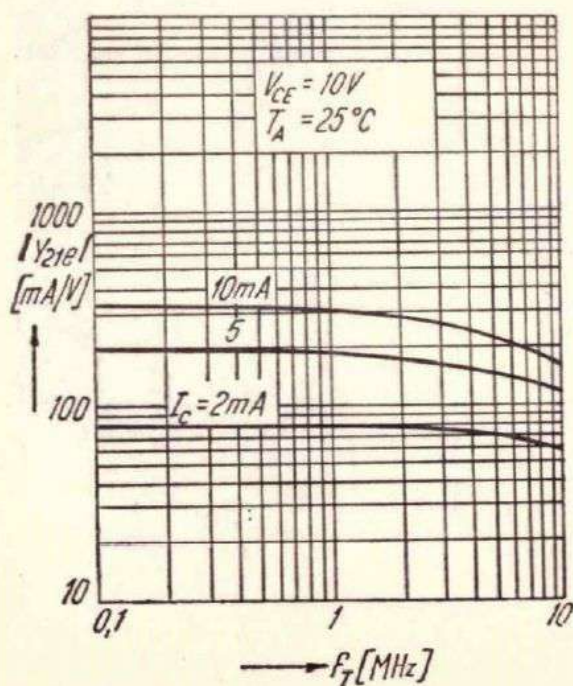
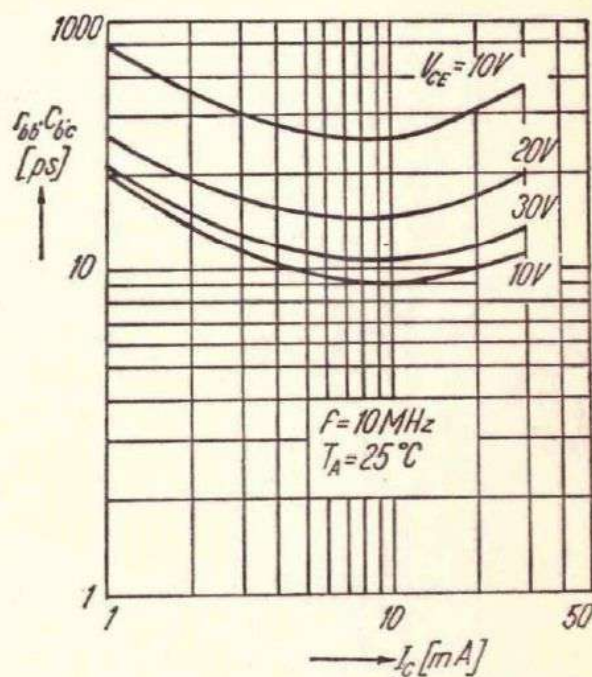
Frecvența de tranziție
Transition frequency



Capacitatea de intrare
Input capacitance

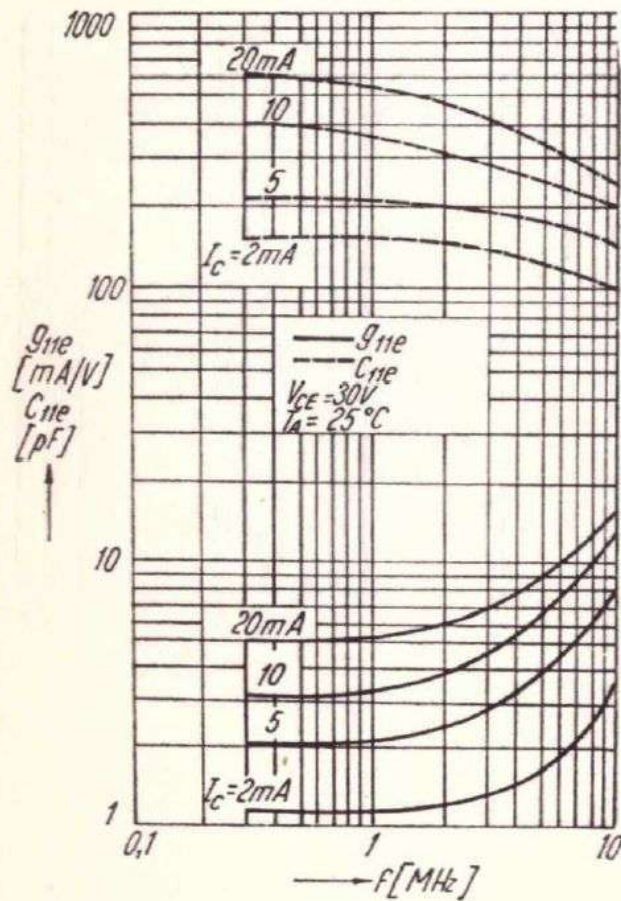
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Constanta de timp colector-bază
Collector-base time constant



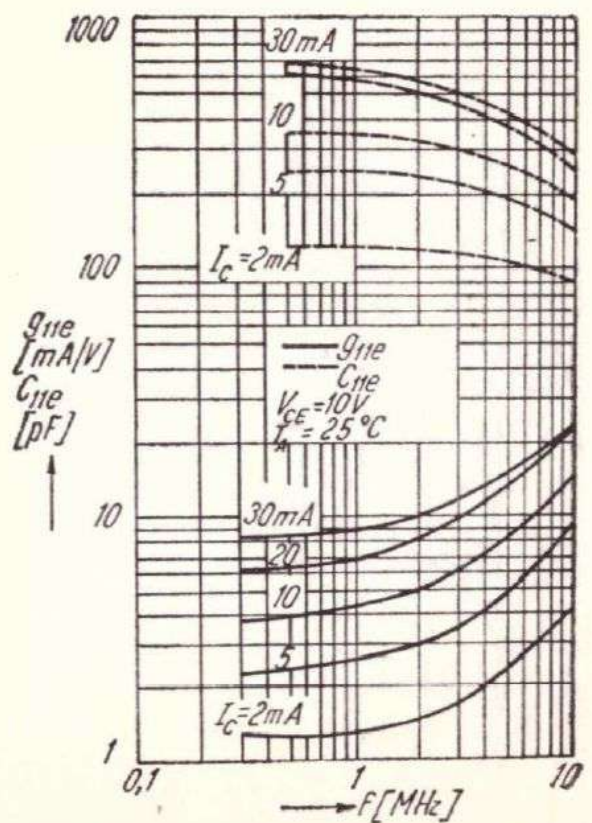
Admitanța de transfer direct
Forward transfer admittance

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Admitanța de intrare
Input admittance

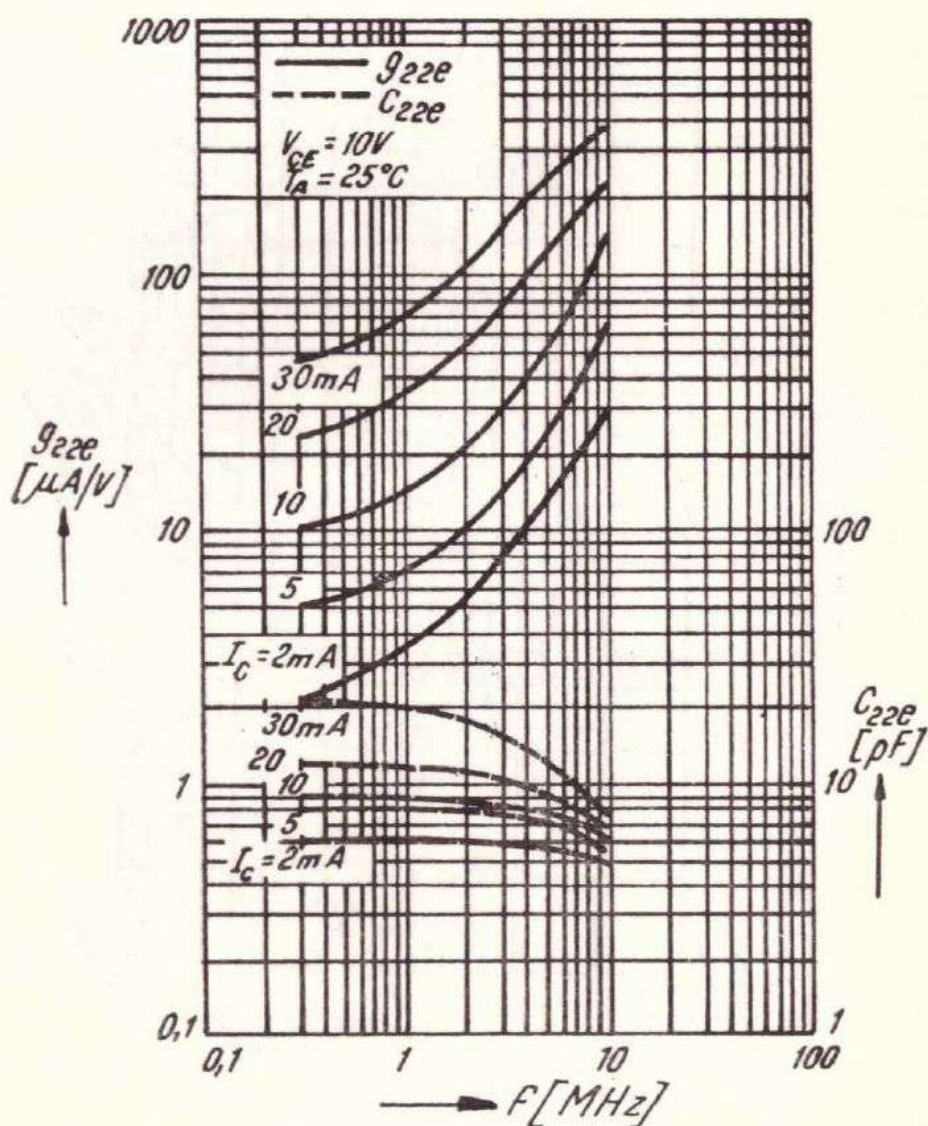
Admitanța de intrare
Input admittance





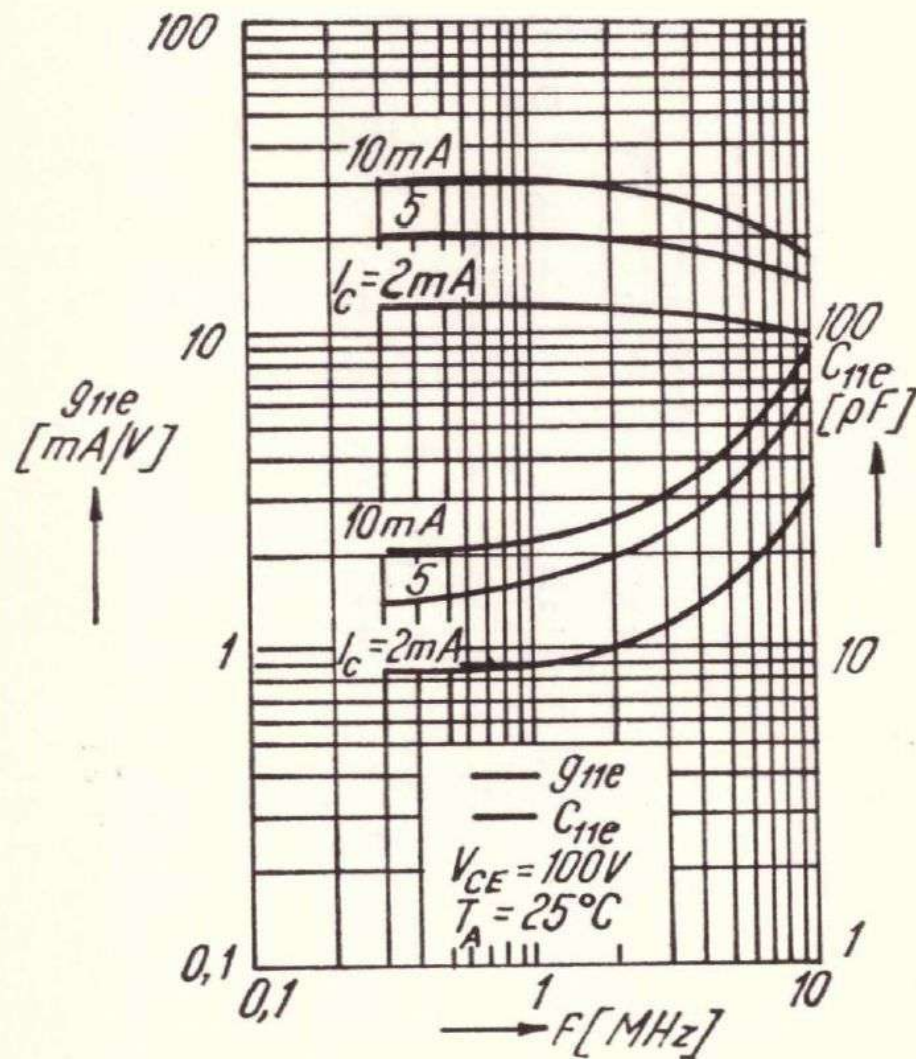
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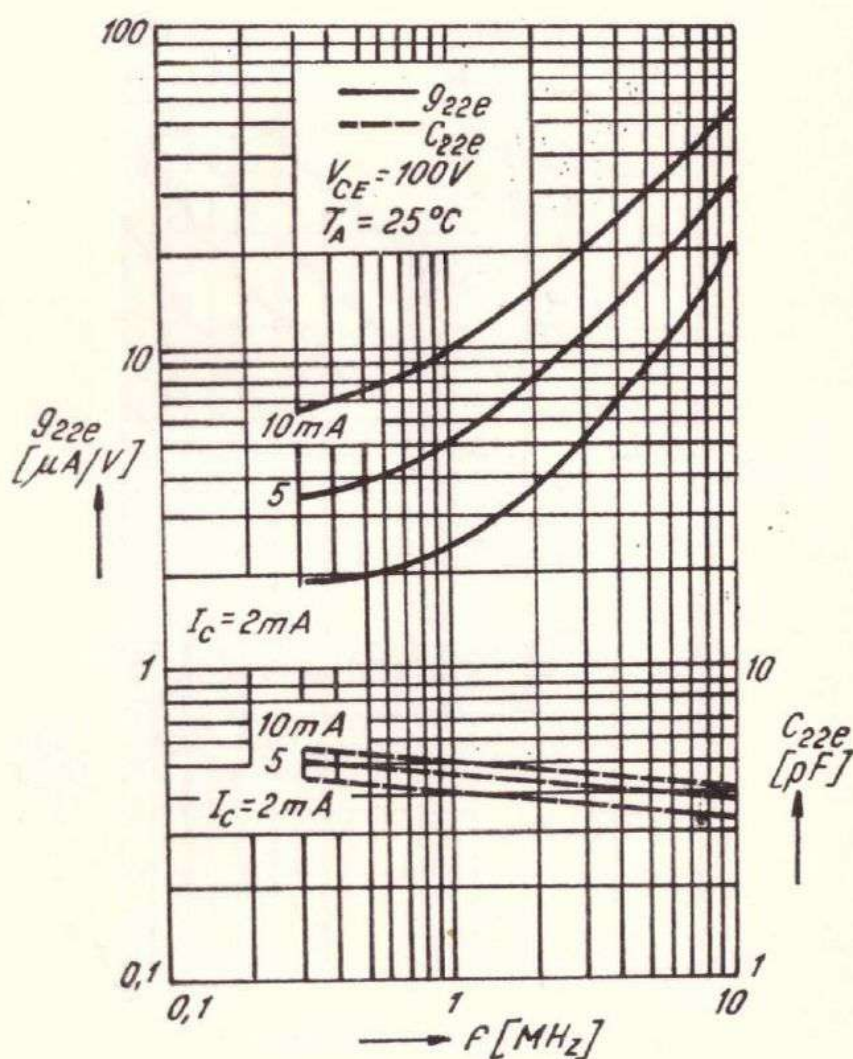


Admitanța de ieșire
Output admittance

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Admitanța de intrare
Input admittance



Admitanța de ieșire
Output admittance