

SILICON PLANAR PNP

GENERAL PURPOSE AMPLIFIERS

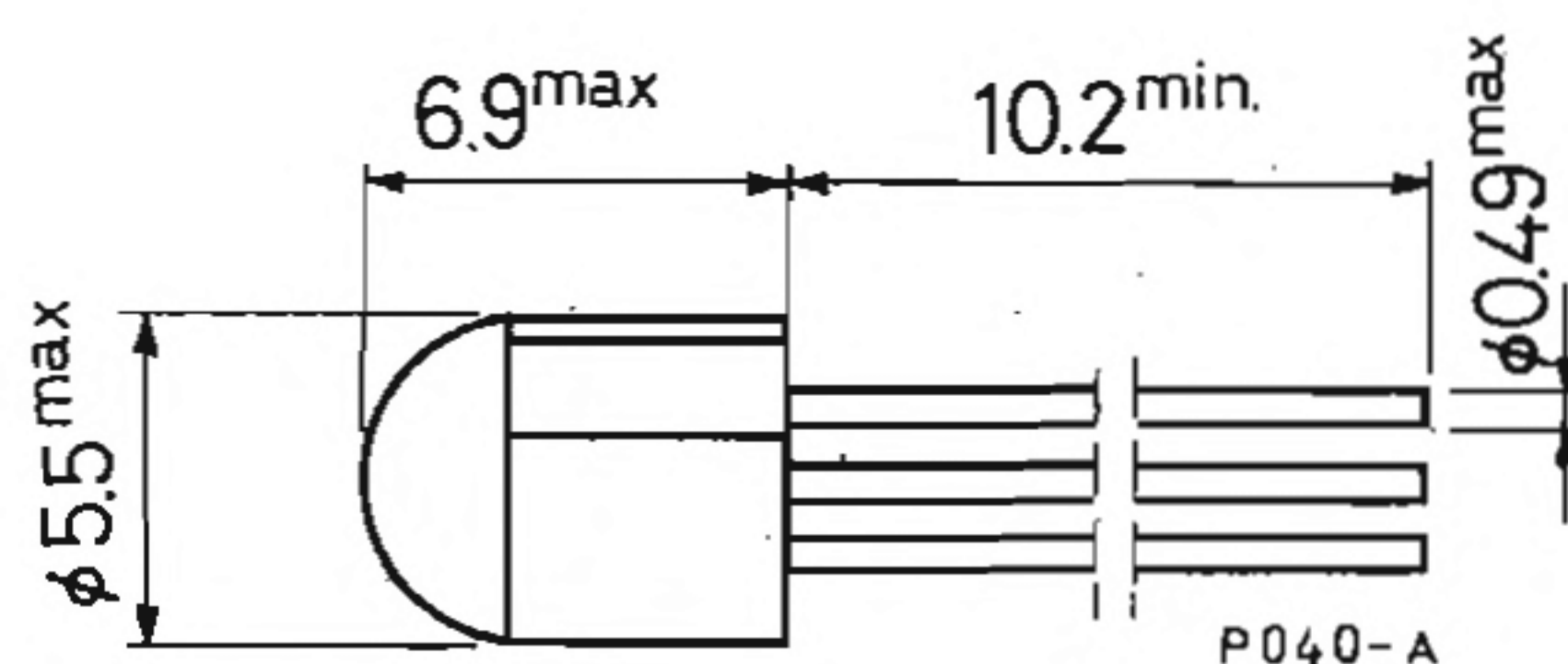
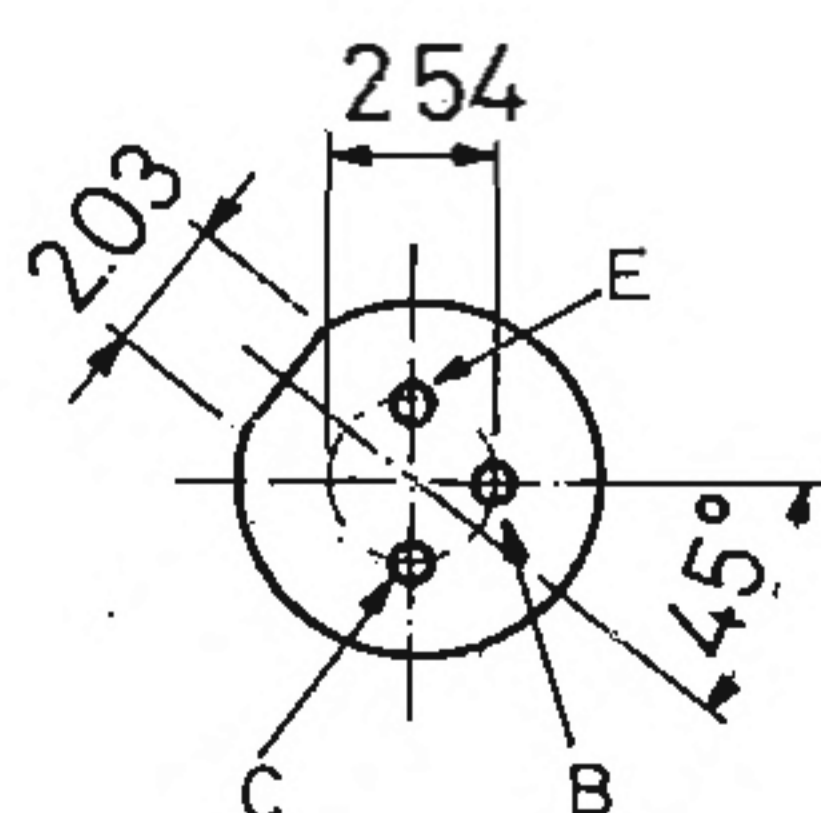
The BC 204, BC 205 and BC 206 are silicon planar epitaxial PNP transistors in TO-18 epoxy package. They are intended for general amplifier applications and TV signal processing.

ABSOLUTE MAXIMUM RATINGS

		BC 204	BC 205 BC 206
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 $T_{amb} \leq 25^\circ C$	0.2 W	
	at $T_{case} \leq 25^\circ C$	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 204
BC 205
BC 206

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THERMAL DATA

$R_{th\ j-case}$	Thermal resistance junction-case	max	200	°C/W
$R_{th\ j-amb}$	Thermal resistance junction-ambient	max	500	°C/W

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

Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CBO} Collector cutoff current ($I_E = 0$)	for BC 204 $V_{CB} = -45\text{ V}$ $V_{CB} = -45\text{ V}$ $T_{amb} = 65\text{ °C}$ for BC 205-BC 206 $V_{CB} = -20\text{ V}$ $V_{CB} = -20\text{ V}$ $T_{amb} = 65\text{ °C}$			-50 -3	nA μA
$V_{(BR)\ CBO}$ Collector-base breakdown voltage ($I_E = 0$)	$I_C = -10\ \mu\text{A}$ for BC 204 for BC 205-BC 206	-50 -25			V V
$V_{(BR)\ CEO}$ Collector-emitter breakdown voltage ($I_B = 0$)	$I_C = -5\text{ mA}$ for BC 204 for BC 205-BC 206	-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	$I_C = -10\text{ mA}$ $I_B = -0.5\text{ mA}$		-0.1	-0.3	V
V_{BE} Base-emitter voltage	$I_C = -2\text{ mA}$ $V_{CE} = -5\text{ V}$	-0.55	-0.65	-0.75	V

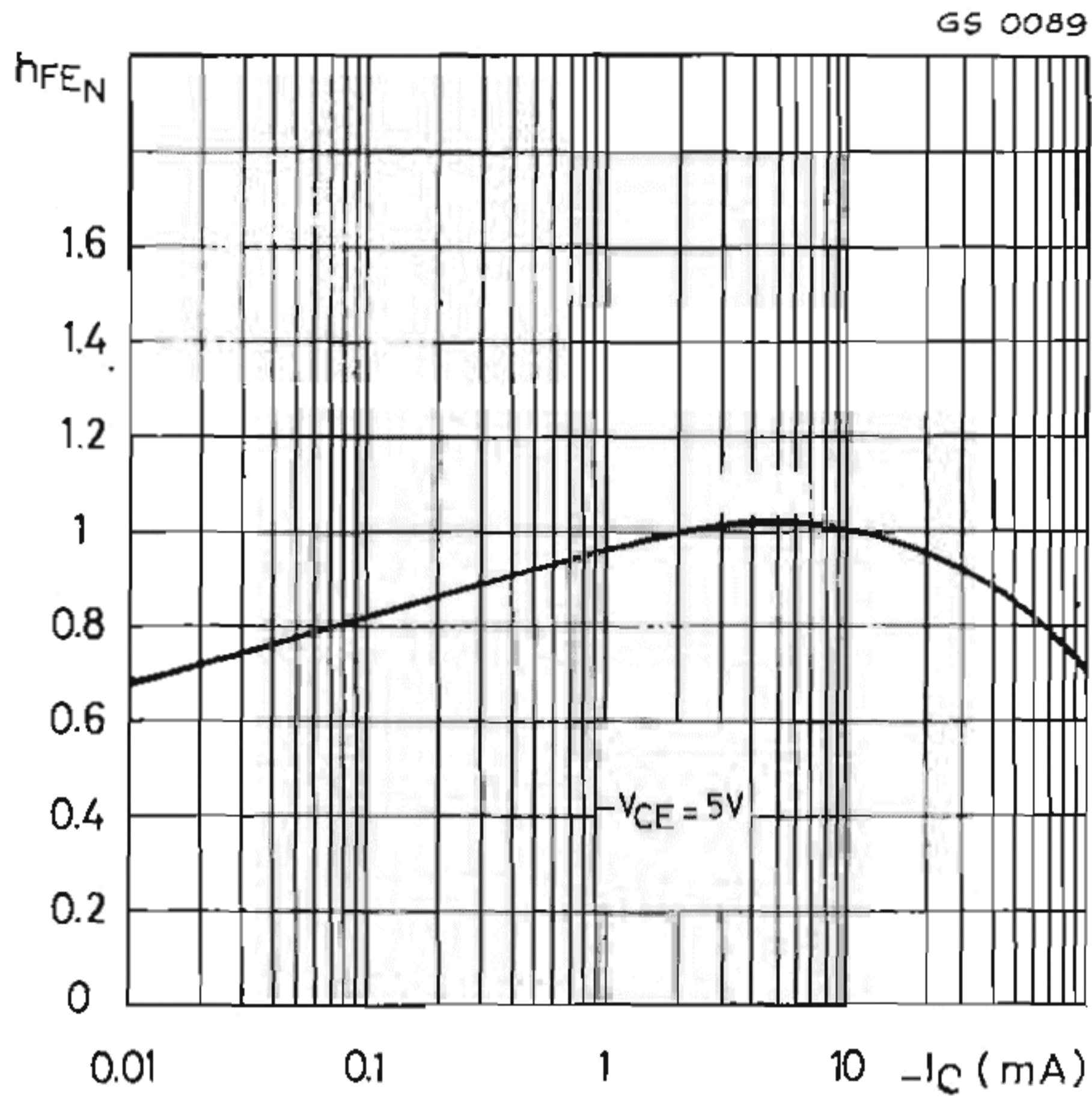
ELECTRICAL CHARACTERISTICS (continued)

Parameter	Test conditions	Min.	Typ.	Max.	Unit
h_{FE} DC current gain	$I_C = -2 \text{ mA}$ $V_{CE} = -5 \text{ V}$ for BC 204 for BC 204 Gr. VI for BC 204 Gr. A for BC 204 Gr. B for BC 205 for BC 205 Gr. A for BC 205 Gr. B for BC 206 for BC 206 Gr. B	50	160	450	—
		50	90	120	—
		110	180	220	—
		200	300	450	—
		110	270	450	—
		110	180	220	—
		200	350	450	—
		200	400	—	—
		200	350	450	—
		$I_C = -10 \mu\text{A}$ $V_{CE} = -5 \text{ V}$ for BC 204 for BC 204 Gr. VI for BC 204 Gr. A for BC 204 Gr. B for BC 205 for BC 205 Gr. A for BC 205 Gr. B for BC 206 for BC 206 Gr. B	110	—	—
			80	—	—
			130	—	—
			200	—	—
			200	—	—
130	—		—		
270	—		—		
f_T Transition frequency	$I_C = -10 \text{ mA}$ $V_{CE} = -5 \text{ V}$	160			MHz
C_{CBO} Collector-base capacitance	$I_E = 0$ $V_{CB} = -10 \text{ V}$ $f = 1 \text{ MHz}$		4		pF
NF Noise figure	$I_C = -200 \mu\text{A}$ $V_{CE} = -5 \text{ V}$ $f = 1 \text{ kHz}$ $B = 200 \text{ Hz}$ for BC 204/205 for BC 206		2	10	dB
			1	4	dB

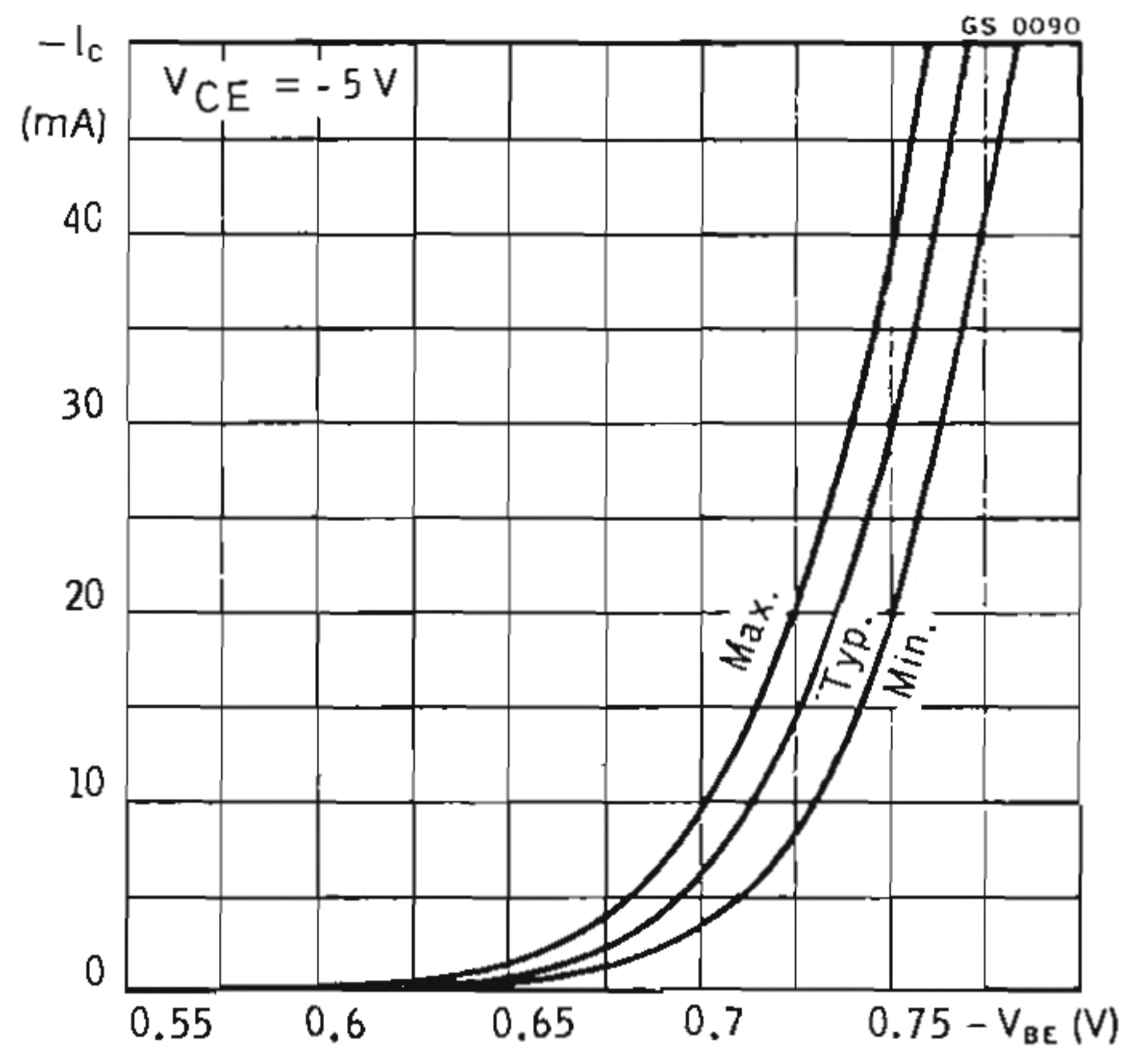
BC 204
BC 205
BC 206

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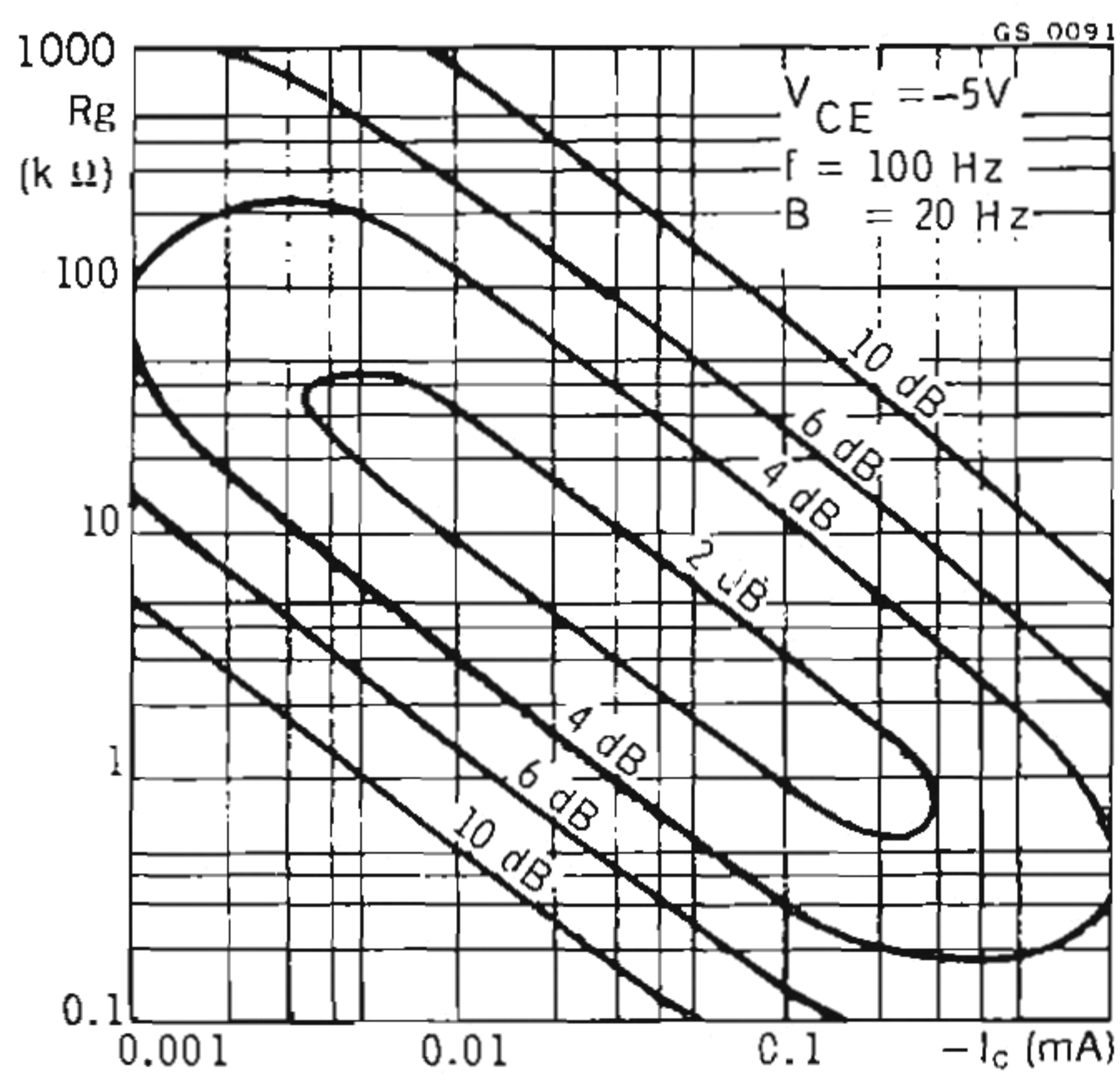
DC normalized current gain



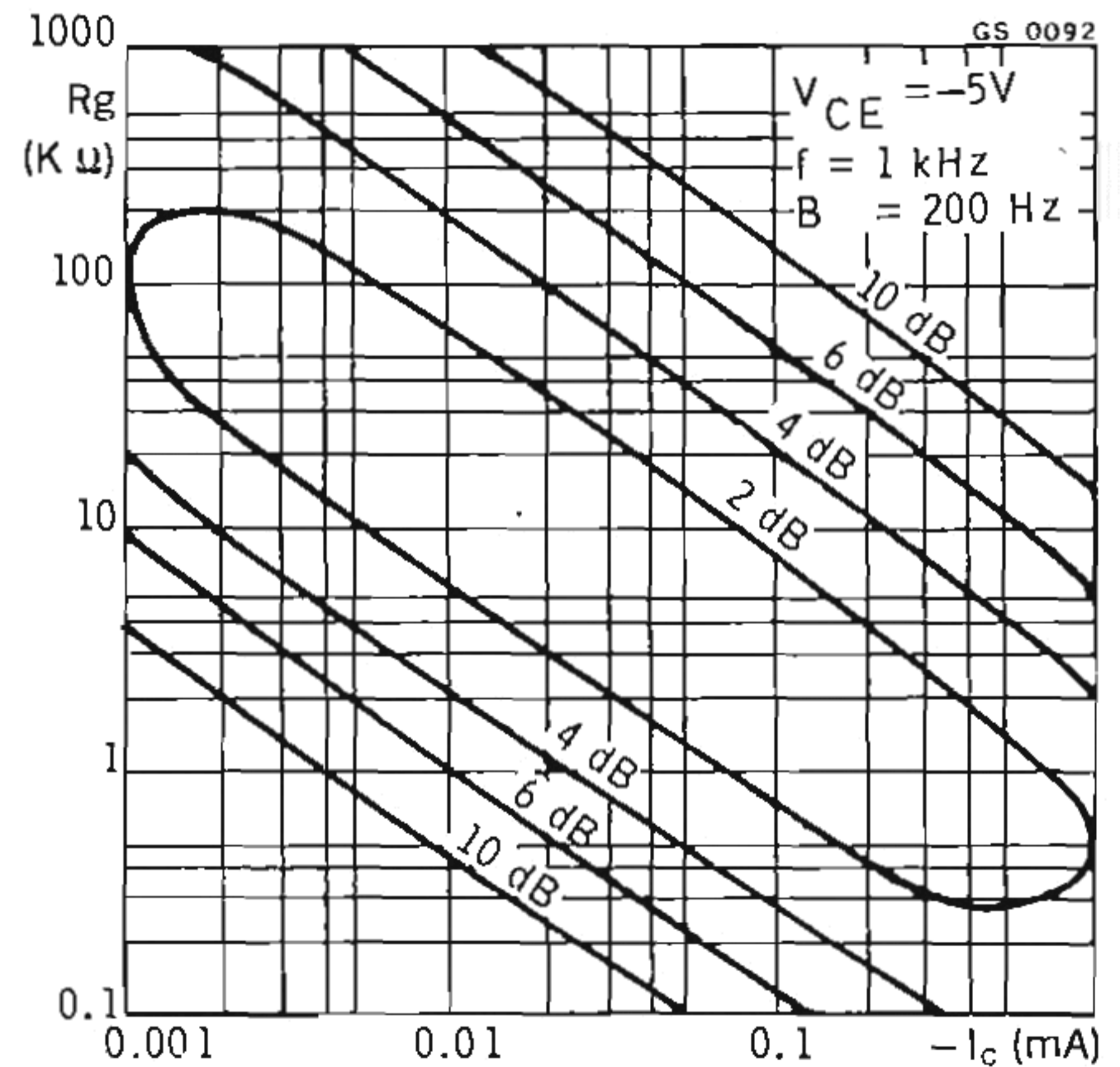
DC transconductance



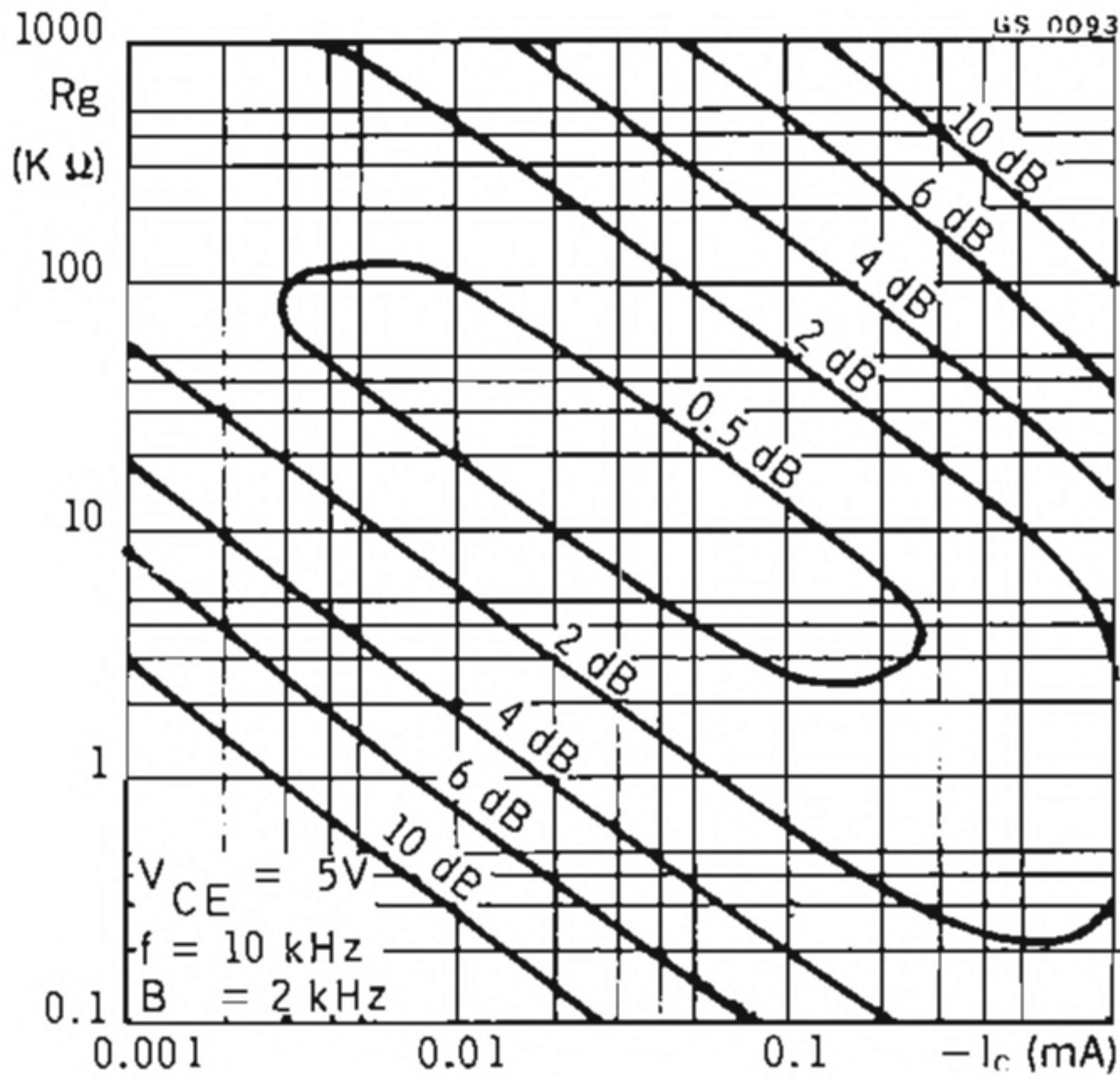
Typical noise figure



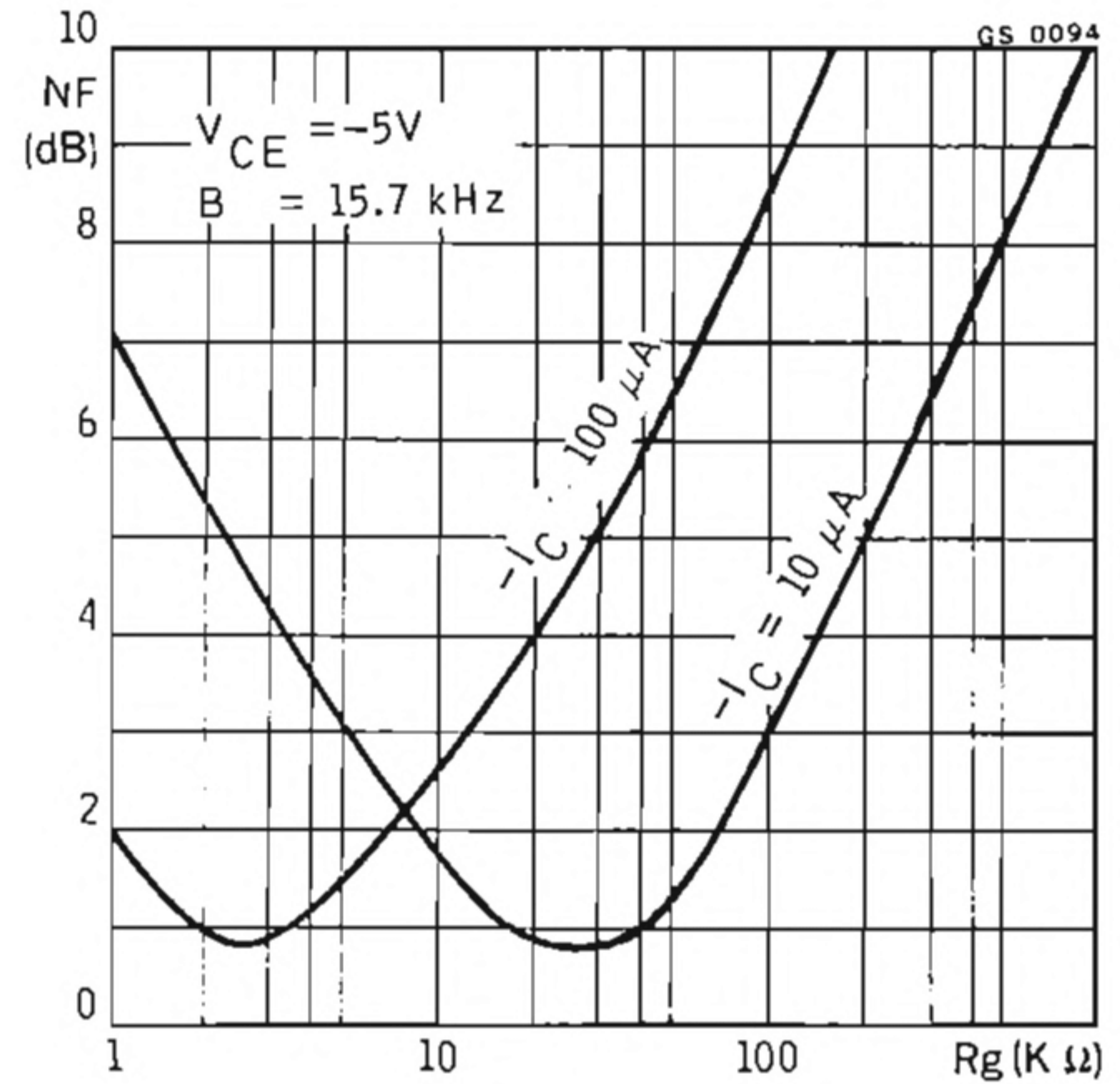
Typical noise figure



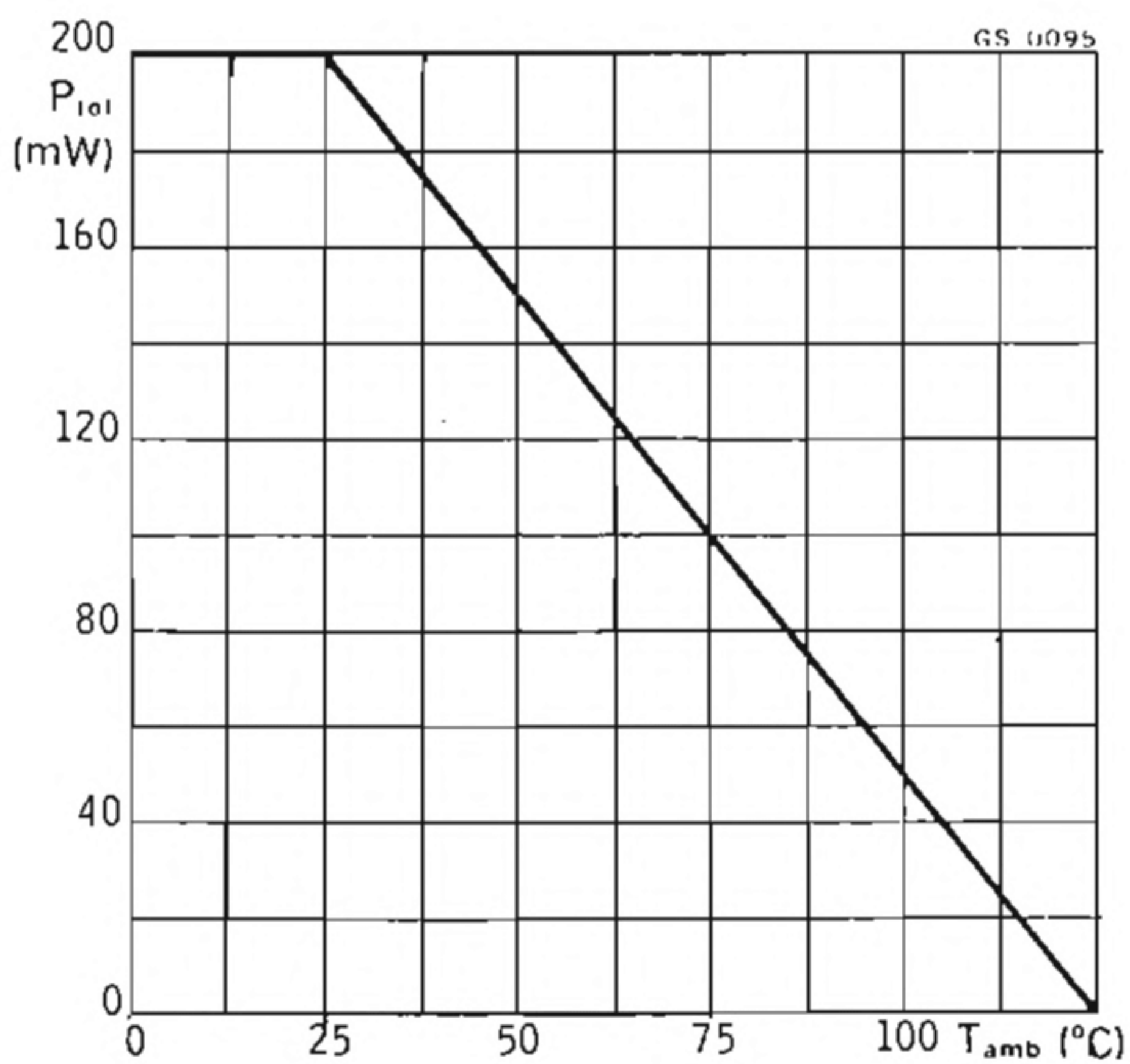
Typical noise figure



Typical noise figure



Power rating chart



Transition frequency

