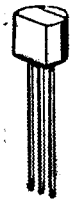
2N 5209 · 2N 5210

NPN SILICON AF LOW NOISE SMALL SIGNAL TRANSISTORS

THE 2N5209, 2N5210 ARE NPN SILICON PLANAR EPITAXIAL TRANSISTORS FOR USE IN AF LOW NOISE PREAMPLIFIERS. THEY ARE COMPLEMENTARY TO THE PNP TYPE 2N5086, 2N5087.

CASE TO-92A



EBC

ABSOLUTE MAXIMUM RATINGS

Collector-Base Voltage	V_{CBO}	50V
Collector-Emitter Voltage	V_{CEO}	50V
Emitter-Base Voltage	V_{EBO}	4.5V
Collector Current	I_C	50mA
Total Power Dissipation ($T_A \leq 25^oC$)	P_{tot}	350mW derate 2.8mW/°C above 25°C
Operating Junction & Storage Temperature	T_j, T_{stg}	-55 to 150°C

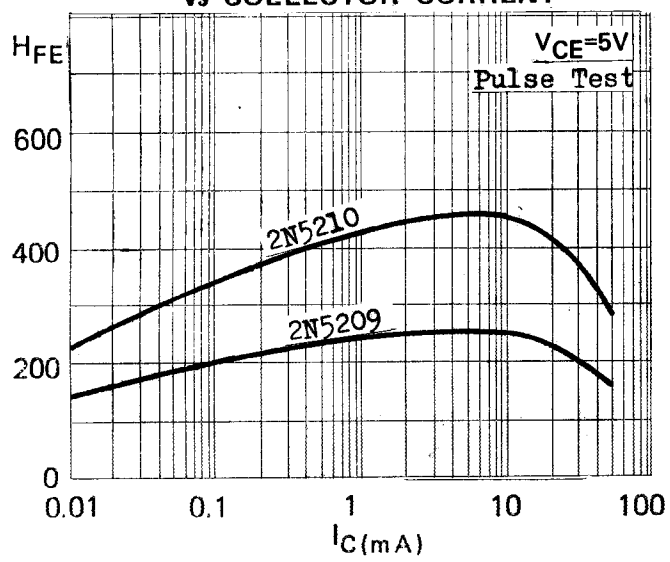
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	2N 5209 MIN	2N 5209 MAX	2N 5210 MIN	2N 5210 MAX	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage	BV_{CBO}	50		50		V	I_C=0.1mA I_E=0
Collector-Emitter Breakdown Voltage	LV_{CEO}	50		50		V	I_C=1mA (Pulsed) I_B=0
Collector Cutoff Current	I_{CBO}		50		50	nA	V_{CB}=35V I_E=0
Emitter Cutoff Current	I_{EBO}		50		50	nA	V_{EB}=3V I_C=0
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.7		0.7	V	I_C=10mA I_B=1mA
Base-Emitter Voltage	V_{BE}		0.85		0.85	V	I_C=1mA V_{CE}=5V
D.C. Current Gain	H_{FE}	100 150 150	300	200 250 250	600		I_C=0.1mA V_{CE}=5V I_C=1mA V_{CE}=5V I_C=10mA V_{CE}=5V
Current Gain-Bandwidth Product	f_T	30		30		MHz	I_C=0.5mA V_{CE}=5V
Collector-Base Capacitance	Cob		4		4	pF	V_{CB}=5V I_E=0 f=1MHz
Small Signal Current Gain	hfe	150	600	250	900		I_C=1mA V_{CE}=5V f=1KHz
Noise Figure	NF		3		2	dB	I_C=20μA V_{CE}=5V R_G=22KΩ f=10Hz-15KHz
	NF		4		3	dB	I_C=20μA V_{CE}=5V R_G=10KΩ f=1KHz

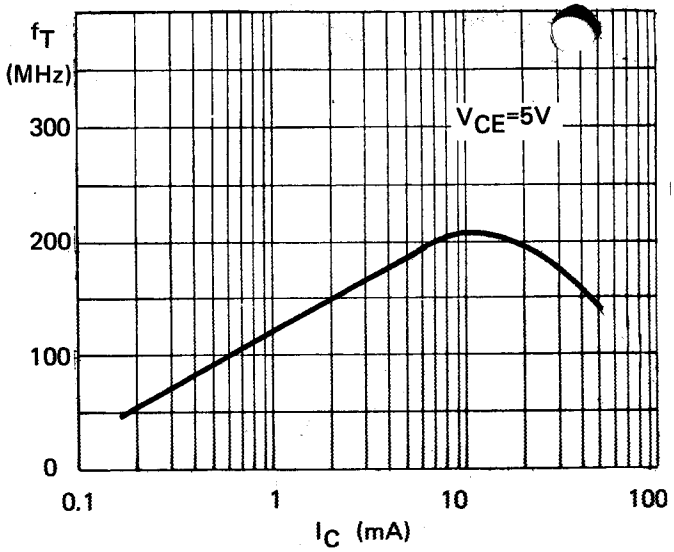
MICRO ELECTRONICS LTD. 38 HUNG TO ROAD, KWUN TONG, HONG KONG. TELEX 43510
KWUN TONG P. O. BOX 69477 CABLE ADDRESS "MICROTRON"
TELEPHONE:- 3-430181-6 ~~3-893363, 3-892423~~
FAX: 3-410321

TYPICAL CHARACTERISTICS (T_A=25°C UNLESS OTHERWISE SPECIFIED)

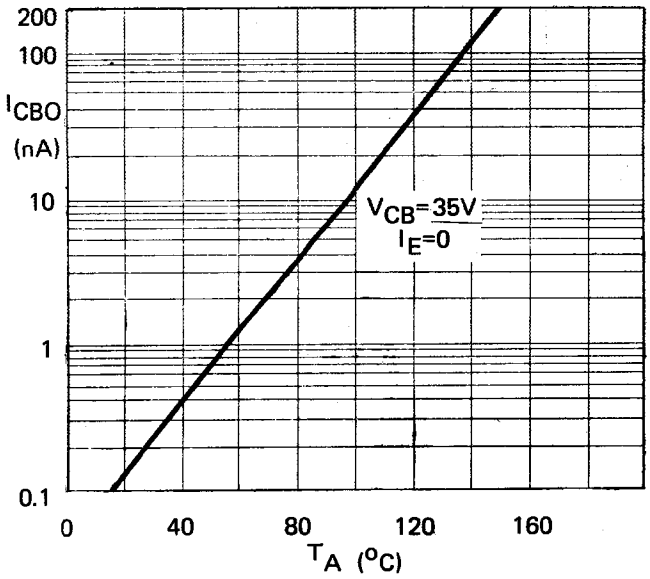
D.C. CURRENT GAIN vs COLLECTOR CURRENT



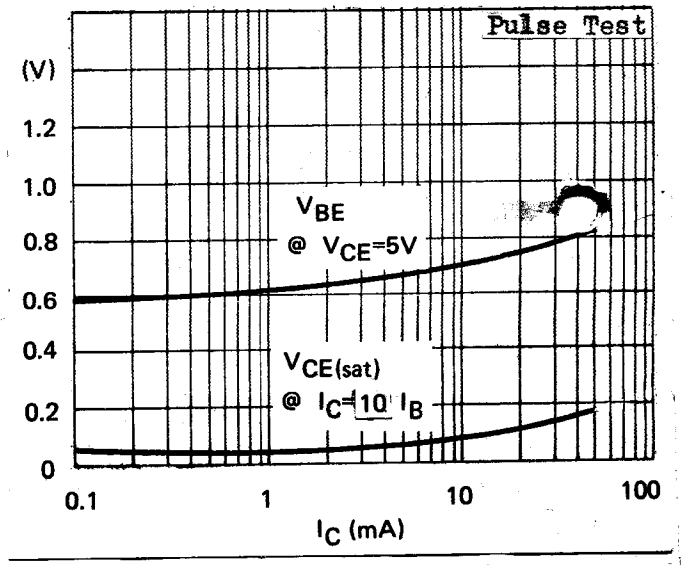
CURRENT GAIN – BANDWIDTH PRODUCT vs COLLECTOR CURRENT



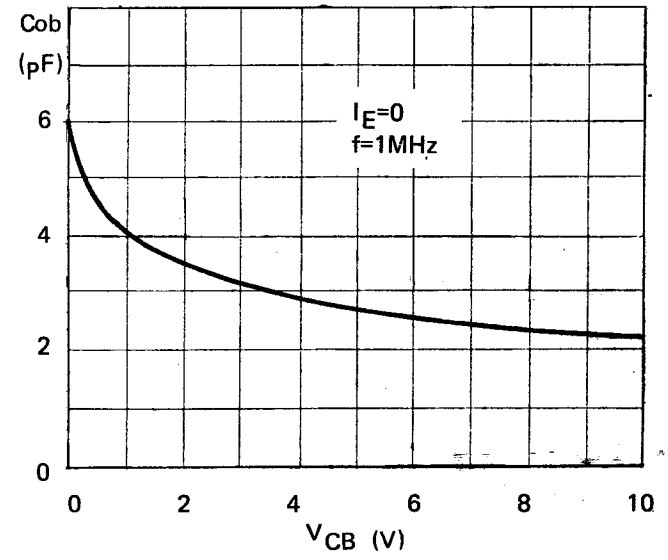
COLLECTOR CUTOFF CURRENT vs AMBIENT TEMPERATURE



V_{BE} AND $V_{CE(sat)}$ vs COLLECTOR CURRENT



COLLECTOR–BASE CAPACITANCE vs COLLECTOR–BASE VOLTAGE



BROAD-BAND NOISE FIGURE vs COLLECTOR CURRENT