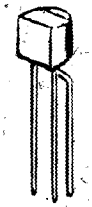
BC 546 through BC 550

NPN SILICON AF SMALL SIGNAL TRANSISTORS

THE BC546 THROUGH BC550 ARE NPN SILICON PLANAR EPITAXIAL TRANSISTORS FOR USE IN AF SMALL SIGNAL AMPLIFIER STAGES AND DIRECT COUPLED CIRCUITS. THEY ARE COMPLEMENTARY TO BC556 THROUGH BC560.

THE BC549, BC550 ARE CHARACTERIZED BY LOW NOISE FIGURE.

CASE TO-92F



CEB

ABSOLUTE MAXIMUM RATINGS		BC546	BC547	BC548	BC549	BC550
Collector-Base Voltage	V_{CBO}	80V	50V	30V	30V	50V
Collector-Emitter Voltage (V_{BE}=0)	V_{CES}	80V	50V	30V	30V	50V
Collector-Emitter Voltage (I_B=0)	V_{CEO}	65V	45V	30V	30V	45V
Emitter-Base Voltage	V_{EBO}	6V	6V	5V	5V	5V
Collector Current	I_C	100mA				
Collector Peak Current	I_{CM}	200mA				
Total Power Dissipation ($T_A \leq 25^oC$)	P_{tot}	500mW derate 4mW/°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	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage	BV_{CBO}					I_C=10μA I_E=0
BC546		80			V	
BC547		50			V	
BC548		30			V	
BC549		30			V	
BC550		50			V	
Collector-Emitter Breakdown Voltage	BV_{CES}					I_C=10μA V_{BE}=0
BC546		80			V	
BC547		50			V	
BC548		30			V	
BC549		30			V	
BC550		50			V	
Collector-Emitter Breakdown Voltage	LV_{CEO}					I_C=2mA(Pulsed)
BC546		65			V	I_B=0
BC547		45			V	
BC548		30			V	
BC549		30			V	
BC550		45			V	

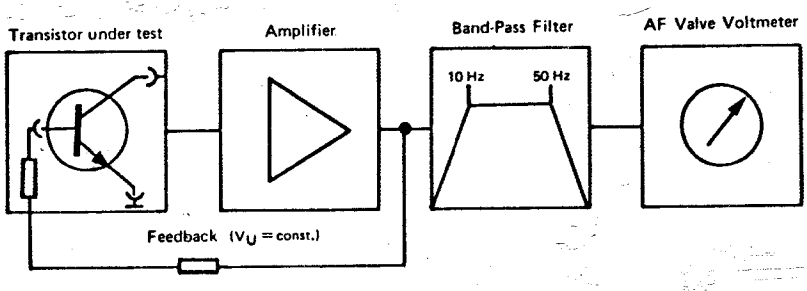
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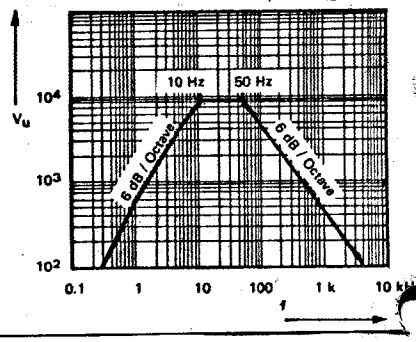
MICRO ELECTRONICS LTD.
38 HUNG TO ROAD, KWUN TONG, HONG KONG. TELEX 43510
KWUN TONG P. O. BOX69477 CABLE ADDRESS "MICROTRON"
TELEPHONE:- 3-430181-6 ~~3-893363~~, ~~3-892423~~
FAX: 3-410321

- - - Continued - - -

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Emitter-Base Breakdown Voltage	BV_{EBO}					I_E=1μA I_C=0
BC546,547		6			V	
BC548,549,550		5			V	
Collector Cutoff Current	I_{CBO}			15	nA	V_{CB}=30V I_E=0
				5	μA	V_{CB}=30V I_E=0 T_A=150°C
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.07	0.25	V	I_C=10mA I_B=0.5mA
			0.22	0.6	V	I_C=100mA I_B=5mA(Pulsed)
Collector-Emitter Knee Voltage	V_{CEK}		0.3	0.6	V	I_C=10mA, I_B=value at which I_C=11mA V_{CE}=1V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.7		V	I_C=10mA I_B=0.5mA
			0.9		V	I_C=100mA I_B=5mA(Pulsed)
Base-Emitter Voltage	V_{BE}	0.58	0.63	0.7	V	I_C=2mA V_{CE}=5V
			0.68	0.77	V	I_C=10mA V_{CE}=5V
Current Gain-Bandwidth Product	f_T		250		MHz	I_C=10mA V_{CE}=5V
Collector-Base Capacitance	Cob		2.7	4.5	pF	V_{CB}=10V I_E=0 f=1MHz
Noise Figure	NF					I_C=0.2mA V_{CE}=5V
BC546,547,548			2	10	dB	R_G=2KΩ f=1kHz
BC549,550			1.4	4	dB	Δf=200Hz
Noise Figure	NF					I_C=0.2mA V_{CE}=5V
BC549 only			1.2	4	dB	R_G=2KΩ f=30Hz-15kHz
BC550 only			1.2	3	dB	
Flicker Noise Voltage Referred to Base	$\overline{En}$					I_C=0.2mA V_{CE}=5V
BC549,550 only			0.135		μV	R_G=2KΩ f=10Hz-50Hz

FLICKER NOISE MEASUREMENT





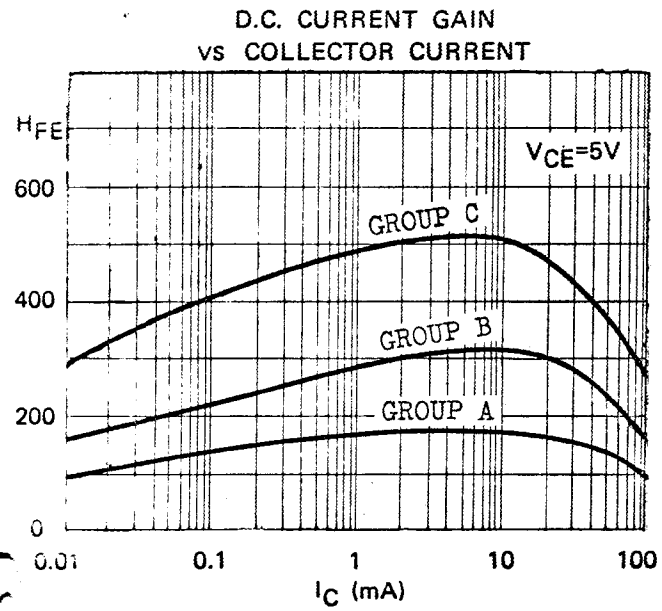
D.C. CURRENT GAIN (H_{FE}) AT V_{CE}=5V T_A=25°C

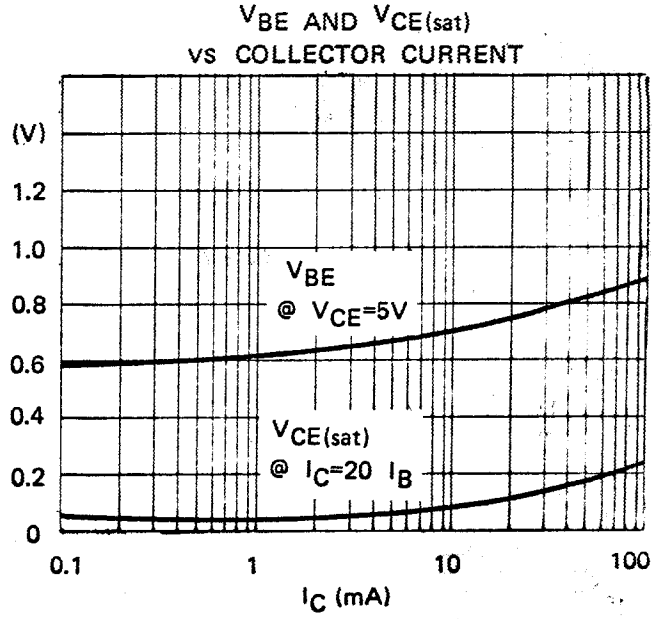
@ I_C	BC546, BC547 BC548			BC546, BC547 BC548 BC549, BC550			BC548 BC549, BC550		
	H_{FE} GROUP A			H_{FE} GROUP B			H_{FE} GROUP C		
	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
0.01mA		90			170			290	
2mA	110	170	220	200	300	450	420	520	800
100mA		100			160			270	

h - PARAMETERS AT I_C=2mA V_{CE}=5V f=1kHz T_A=25°C

h - PARAMETER	SYMBOL	H_{FE} GROUP A			H_{FE} GROUP B			H_{FE} GROUP C			UNIT
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
Input Impedance	h_{ie}	1.6	2.7	4.5	3.2	4.5	8.5	6	8.7	15	KΩ
Voltage Feedback Ratio	h_{re}		1.5			2			3		$x10^{-4}$
Small Signal Current Gain	h_{fe}	125	190	260	240	330	500	450	580	900	
Output Admittance	h_{oe}		18	30		30	60		60	110	μ℧

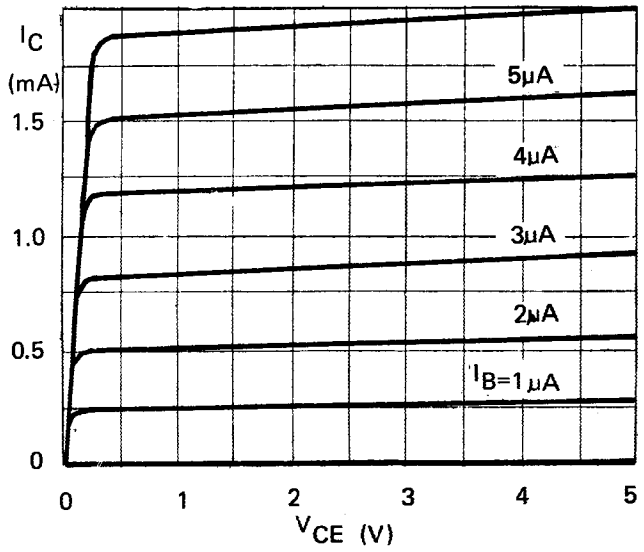
TYPICAL CHARACTERISTICS AT T_A=25°C (Pulse Test)



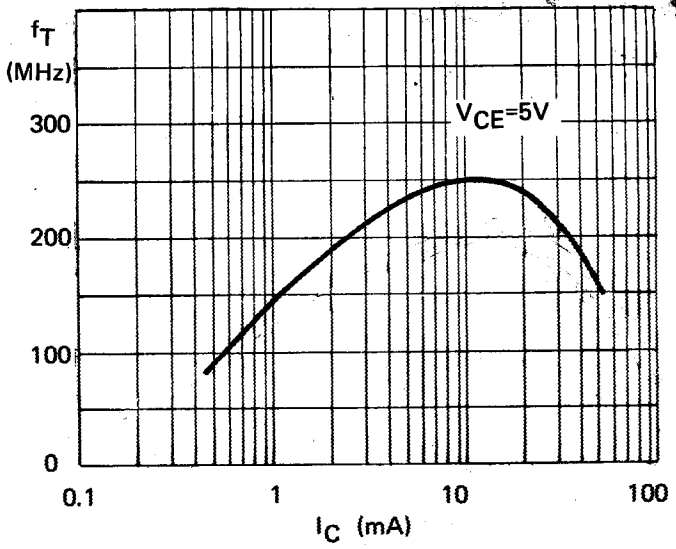


TYPICAL CHARACTERISTICS (T_A=25°C UNLESS OTHERWISE SPECIFIED)

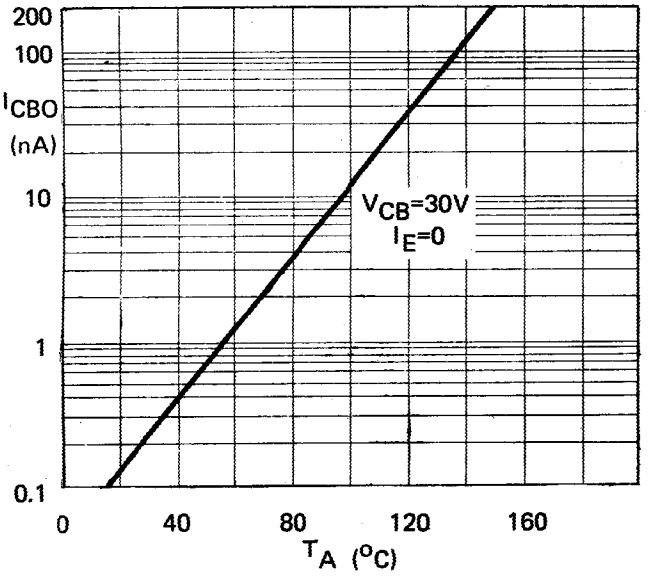
COMMON EMITTER
OUTPUT CHARACTERISTICS



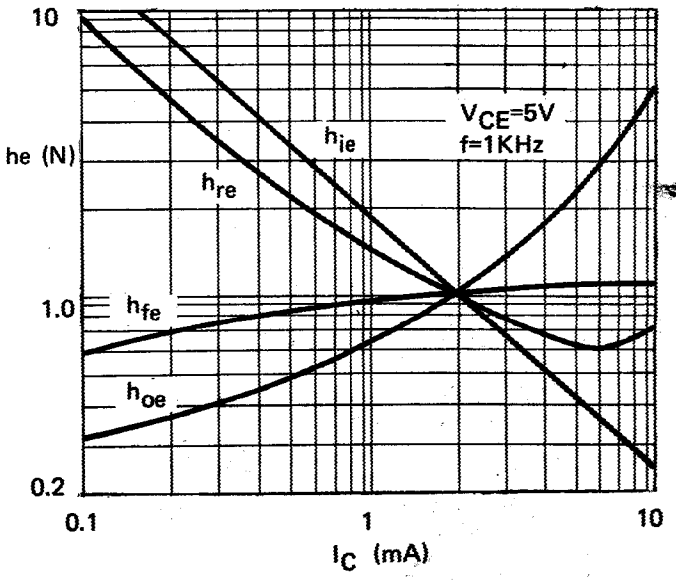
CURRENT GAIN – BANDWIDTH PRODUCT
VS COLLECTOR CURRENT



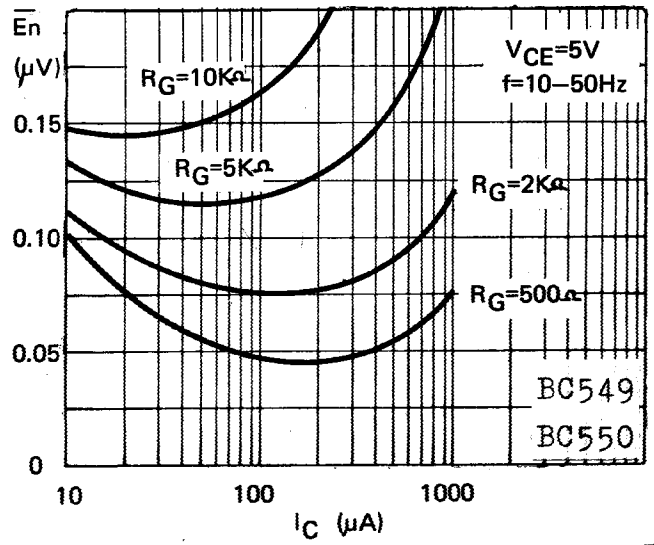
COLLECTOR CUTOFF CURRENT
VS AMBIENT TEMPERATURE



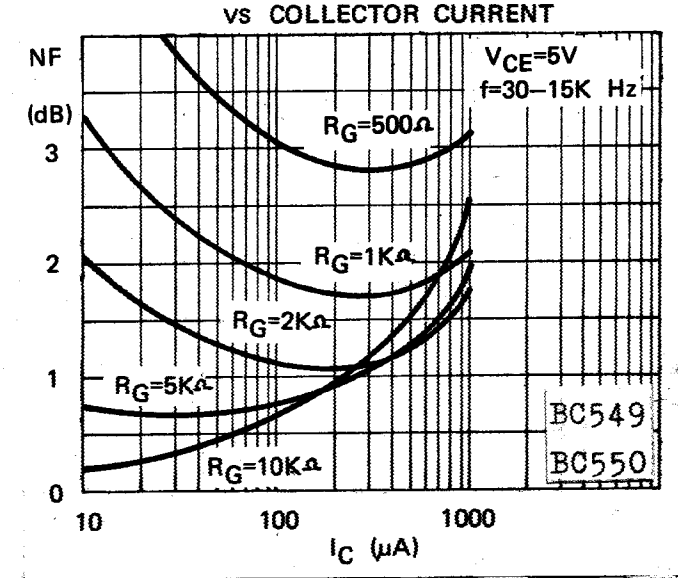
h–PARAMETERS (NORMALIZED)
VS COLLECTOR CURRENT



EQUIVALENT NOISE VOLTAGE AT BASE
VS COLLECTOR CURRENT



BROAD BAND NOISE FIGURE
VS COLLECTOR CURRENT



BC546 family