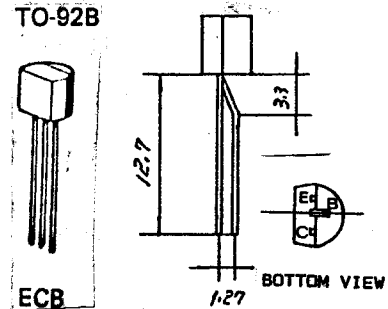




# BC184 BC184L BC214 BC214L

COMPLEMENTARY SILICON AF SMALL SIGNAL AMPLIFIERS & DRIVERS

The BC184, BC184L (NPN) and BC214, BC214L (PNP) are complementary silicon planar epitaxial transistors for use in AF small signal amplifiers and drivers, as well as for low noise pre-amplifiers applications. Both types feature good linearity of DC current gain.

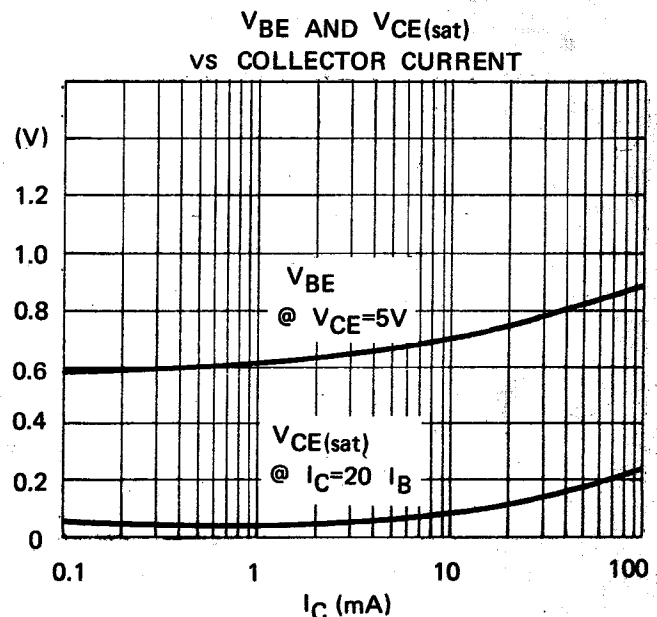
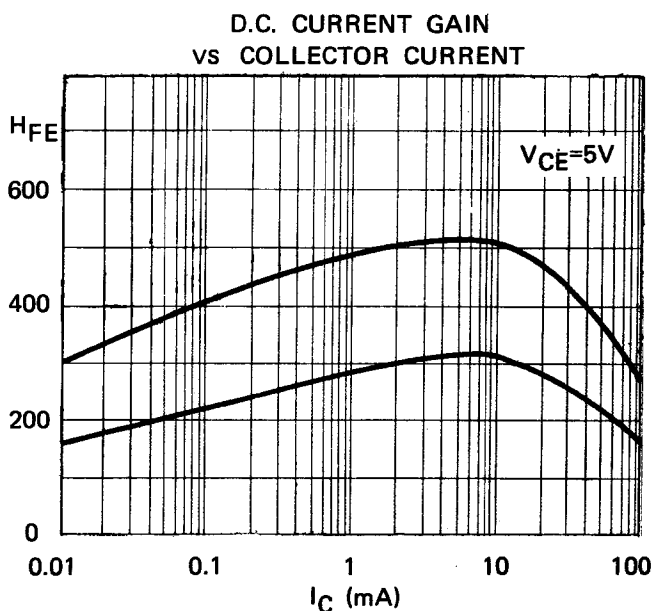


BC184L	BC184
BC214L	BC214

### ABSOLUTE MAXIMUM RATINGS

Collector-Base Voltage	$V_{CBO}$	45V	45V
Collector-Emitter Voltage	$V_{CE0}$	30V	30V
Emitter-Base Voltage	$V_{EB0}$	6V	5V
Collector Current	$I_C$		200mA
Total Power Dissipation @ $T_A=25^\circ C$ Derate above $25^\circ C$	$P_{tot}$		300mW 2.4mW/ $^\circ C$
Operating Junction and Storage Temperature	$T_j, T_{stg}$		-55 to $+150^\circ C$

### TYPICAL CHARACTERISTICS ( $T_A=25^\circ C$ unless otherwise specified)



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ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	30			V	$I_C=2\text{mA}$ $I_B=0$
Collector-Base Breakdown Voltage	$BV_{CBO}$	45			V	$I_C=10\mu\text{A}$ $I_E=0$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	6 5			V	$I_E=10\mu\text{A}$ $I_C=0$
Collector Cutoff Current	$I_{CBO}$			15	nA	$V_{CB}=30\text{V}$ $I_E=0$
Emitter Cutoff Current	$I_{EBO}$			15	nA	$V_{EB}=4\text{V}$ $I_C=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.07	0.25 0.6	V	$I_C=10\text{mA}$ $I_B=0.5\text{mA}$ $I_C=100\text{mA}$ $I_B=5\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.2 1.1	V	$I_C=100\text{mA}$ $I_B=5\text{mA}^*$
Base-Emitter Voltage	$V_{BE}$	0.55 0.6		0.7 0.72	V	$V_{CE}=5\text{V}$ $I_C=2\text{mA}$
D.C. Current Gain	$H_{FE}$	100 <u>220</u> 140 130				$V_{CE}=5\text{V}$ $I_C=10\mu\text{A}$ $V_{CE}=5\text{V}$ $I_C=2\text{mA}$ $V_{CE}=5\text{V}$ $I_C=100\text{mA}^*$
Small Signal Current Gain ( $f=1\text{KHz}$ )	$h_{fe}$	240 140		900		$V_{CE}=5\text{V}$ $I_C=2\text{mA}$
	Group B Group C	240 450		500 900		
Output Capacitance	$C_{ob}$		3 5	5	pF	$V_{CB}=10\text{V}$ $I_E=0$ $f=1\text{MHz}$
Input Capacitance	$C_{ib}$		9.5		pF	$V_{EB}=0.5\text{V}$ $I_E=0$ $f=1\text{MHz}$
Current Gain-Bandwidth Product	$f_T$		280 350		MHz	$I_C=10\text{mA}$ $V_{CE}=5\text{V}$ $f=100\text{MHz}$
Noise Figure	NF			4 2	dB	$I_C=200\mu\text{A}$ $V_{CE}=5\text{V}$ $R_G=2\text{K}\Omega$ $NB=15.7\text{KHz}$ $f_1=10\text{Hz}$ $f_2=10\text{MHz}$

\* Pulse Test : Pulse Width =  $300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .