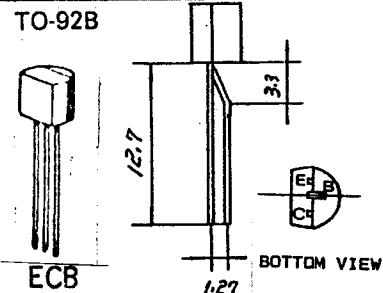




# BC183,L · BC213,L

COMPLEMENTARY SILICON AF SMALL SIGNAL AMPLIFIERS & DRIVERS

The BC183, BC183L (NPN) & BC213, BC213L (PNP) are complementary silicon planar epitaxial transistors for use in AF small signal amplifiers and drivers, as well as for low power universal applications. Both types feature good linearity of D.C. current gain.



BC184L BC184  
BC214L BC214

### ABSOLUTE MAXIMUM RATINGS

		BC183,L	BC213,L
Collector-Base Voltage	$V_{CB0}$	45V	45V
Collector-Emitter Voltage	$V_{CE0}$	30V	30V
Emitter-Base Voltage	$V_{EB0}$	6V	5V
Collector Current	$I_C$		200mA
Total Power Dissipation @ $T_A=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_{tot}$		300mW 2.4mW/ $^\circ\text{C}$
Operating Junction and Storage Temperature	$T_j, T_{stg}$		-55 to $+150^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	30			V	$I_C=2\text{mA}$ $I_B=0$
Collector-Base Breakdown Voltage	$BV_{CB0}$	45			V	$I_C=10\mu\text{A}$ $I_E=0$
Emitter-Base Breakdown Voltage	$BV_{EB0}$	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	$V_{EB}=4\text{V}$ $I_C=0$

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ELECTRICAL CHARACTERISTICS (TA=25°C)

Collector-Emitter Saturation BC183,L BC213,L	V <sub>CE(sat)</sub>	0.07	0.25 0.6	V	I <sub>C</sub> =10mA I <sub>B</sub> =0.5mA I <sub>C</sub> =100mA I <sub>B</sub> =5mA*
Base-Emitter Saturation BC183,L BC213,L	V <sub>BE(sat)</sub>		1.2 1.1	V	I <sub>C</sub> =100mA I <sub>B</sub> =5mA*
Base-Emitter Voltage BC183,L BC213,L	V <sub>BE</sub>	0.55 0.6	0.7 0.72	V	V <sub>CE</sub> =5V I <sub>C</sub> =2mA
D.C. Current Gain BC183,L BC213,L BC183,L BC213,L	H <sub>FE</sub>	100 <u>220</u> 140 130	120		V <sub>CE</sub> =5V I <sub>C</sub> =10μA V <sub>CE</sub> =5V I <sub>C</sub> =2mA V <sub>CE</sub> =5V I <sub>C</sub> =100mA*
Small Signal Current Gain (f=1KHz) BC183,L BC213,L Group A Group B Group C	h <sub>fe</sub>	240 140 <u>125</u> 240 450	900  <u>260</u> 500 900		V <sub>CE</sub> =5V I <sub>C</sub> =2mA
Output Capacitance BC183,L BC213,L	C <sub>ob</sub>		3 5	pF	V <sub>CB</sub> =10V I <sub>E</sub> =0 f=1MHz
Input Capacitance BC183,L	C <sub>ib</sub>		9.5	pF	V <sub>EB</sub> =0.5V I <sub>E</sub> =0 f=1MHz
Current Gain-Bandwidth Product BC183,L BC213,L	f <sub>T</sub>		280 350	MHz	I <sub>C</sub> =10mA V <sub>CE</sub> =5V f=100MHz
Noise Figure BC183,L BC213,L	NF			10 dB	I <sub>C</sub> =200μA V <sub>CE</sub> =5V R <sub>G</sub> =2KΩ NB=15.7KHz f <sub>1</sub> =10Hz f <sub>2</sub> =10KHz

\* Pulse Test : Pulse Width = 300μS, Duty Cycle ≤ 2%.