

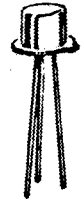
MICRO ELECTRONICS

BCY70,1,2

PNP
SILICON
TRANSISTORS

The BCY70, BCY71 and BCY72 are PNP silicon planar epitaxial transistors designed for general purpose amplifier and switching applications.

TO-18



CBE

ABSOLUTE MAXIMUM RATINGS

		BCY70	BCY71	BCY72
Collector-Base Voltage	V_{CB0}	50V	45V	25V
Collector-Emitter Voltage	V_{CE0}	50V	45V	25V
Emitter-Base Voltage	V_{EB0}		5V	
Collector Current	I_C		200mA	
Total Power Dissipation	P_{tot}		350mW	
Operating Junction & Storage Temperature	T_j, T_{stg}		-65 to +200°C	

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

PARAMETER	SYMBOL	MIN	MAX	UNIT	TEST CONDITIONS
Collector Cutoff Current	BCY70	ICB0	10	nA	$V_{CB}=40V$ $I_E=0$
			500	nA	$V_{CB}=50V$ $I_E=0$
	BCY71	ICB0	50	nA	$V_{CB}=40V$ $I_E=0$
			500	nA	$V_{CB}=45V$ $I_E=0$
	BCY72	ICB0	50	nA	$V_{CB}=20V$ $I_E=0$
			500	nA	$V_{CB}=25V$ $I_E=0$
Collector Cutoff Current	I_{CEX}		20	nA	$V_{CE}=50V$ $V_{EB}=3V$
Emitter Cutoff Current	I_{EBO}		500	nA	$V_{EB}=5V$ $I_C=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.25	V	$I_C=10mA$ $I_B=1mA$
			0.5	V	$I_C=50mA$ $I_B=5mA^*$
Base-Emitter Saturation	BCY70, BCY71	$V_{BE(sat)}$	0.6	V	$I_C=10mA$ $I_B=1mA$
			0.9	V	$I_C=50mA$ $I_B=5mA^*$
			1.2	V	

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

PARAMETER		SYMBOL	MIN	MAX	UNIT	TEST CONDITIONS	
D.C. Current Gain	BCY70	HFE	40			$I_C=0.1\text{mA}$ $V_{CE}=1\text{V}$	
			45			$I_C=1\text{mA}$ $V_{CE}=1\text{V}$	
			50			$I_C=10\text{mA}$ $V_{CE}=1\text{V}$	
			15			$I_C=50\text{mA}$ $V_{CE}=1\text{V}^*$	
	BCY71			40			$I_C=0.01\text{mA}$ $V_{CE}=1\text{V}$
				80			$I_C=0.1\text{mA}$ $V_{CE}=1\text{V}$
				90			$I_C=1\text{mA}$ $V_{CE}=1\text{V}$
				100	600		$I_C=10\text{mA}$ $V_{CE}=1\text{V}$
	BCY72			40			$I_C=1\text{mA}$ $V_{CE}=1\text{V}$
				50			$I_C=10\text{mA}$ $V_{CE}=1\text{V}$
	Small Signal Current Gain	BCY71	h_{fe}	100	400		$I_C=1\text{mA}$ $V_{CE}=10\text{V}$ $f=1\text{KHz}$
	Current Gain Bandwidth Product	BCY71	f_T	15		MHz	$I_C=0.1\text{mA}$ $V_{CE}=10\text{V}$ $f=10.7\text{MHz}$
BCY70			250		MHz	$I_C=10\text{mA}$ $V_{CE}=20\text{V}$	
BCY71,BCY72			200		MHz	$f=100\text{MHz}$	
Output Capacitance		C_{ob}		6	pF	$V_{CB}=10\text{V}$ $I_E=0$ $f=1\text{MHz}$	
Input Capacitance		C_{ib}		8	pF	$V_{EB}=1\text{V}$ $I_C=0$ $f=1\text{MHz}$	
Noise Figure	BCY70,BCY72	NF		6	dB	$I_C=0.1\text{mA}$ $V_{CE}=5\text{V}$ $R_G=2\text{K}\Omega$ $f=10\text{Hz}$ to 10KHz	
	BCY71			2	dB		

* Pulse Test : Pulse Width = $300\mu\text{s}$, Duty Cycle = 1%.