

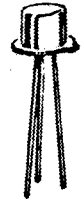
# MICRO ELECTRONICS

## 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	VCBO	50V	45V	25V
Collector-Emitter Voltage	VCEO	50V	45V	25V
Emitter-Base Voltage	VEBO		5V	
Collector Current	IC		200mA	
Total Power Dissipation	Ptot		350mW	
Operating Junction & Storage Temperature	Tj, Tstg		-65 to +200°C	

### ELECTRICAL CHARACTERISTICS (TA=25°C)

PARAMETER	SYMBOL	MIN	MAX	UNIT	TEST CONDITIONS
Collector Cutoff Current	BCY70	ICBO	10	nA	VCB=40V IE=0
			500	nA	VCB=50V IE=0
	BCY71	ICBO	50	nA	VCB=40V IE=0
			500	nA	VCB=45V IE=0
	BCY72	ICBO	50	nA	VCB=20V IE=0
			500	nA	VCB=25V IE=0
Collector Cutoff Current	ICEX		20	nA	VCE=50V VEB=3V
Emitter Cutoff Current	IEBO		500	nA	VEB=5V IC=0
Collector-Emitter Saturation Voltage	VCE(sat)		0.25	V	IC=10mA IB=1mA
			0.5	V	IC=50mA IB=5mA*
Base-Emitter Saturation	VBE(sat)	0.6	0.9	V	IC=10mA IB=1mA
			1.2	V	IC=50mA IB=5mA*

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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 $10\text{KHz}$	
	BCY71			2	dB		

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