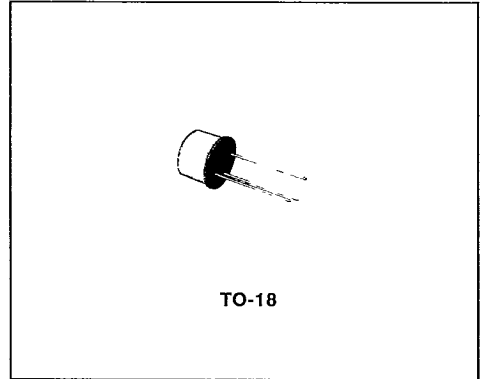
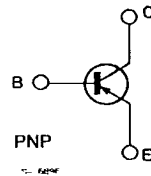


DESCRIPTION

The BCY70, BCY71 and BCY72 are silicon planar epitaxial PNP transistors in Jedec TO-18 metal case.

**INTERNAL SCHEMATIC DIAGRAM****ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value			Unit
		BCY70	BCY71	BCY72	
V_{CBO}	Collector-base Voltage ($I_E = 0$)	- 50	- 45	- 25	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	- 40	- 45	- 25	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	- 5			V
I_{CM}	Collector Peak Current	- 200			mA
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ\text{C}$	350			mW
T_{stg}, T_J	Storage and Junction Temperature	- 65 to 200			$^\circ\text{C}$

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

HERMAL DATA

$R_{th j-case}$	Thermal Resistance Junction-case	Max	150	$^{\circ}C/W$
$R_{th j-amb}$	Thermal Resistance Junction-ambient	Max	500	$^{\circ}C/W$

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cutoff Current ($V_{BE} = 0$)	For BCY70 $V_{CE} = -20 V$ $V_{CE} = -50 V$ For BCY71 $V_{CB} = -20 V$ $V_{CB} = -45 V$ For BCY72 $V_{CB} = -20 V$ $V_{CB} = -25 V$			-10 -500 -100 -10 -100 -10	nA nA nA μA nA μA
I_{EBO}	Emitter cutoff Current ($I_C = 0$)	$V_{EB} = -5 V$			-10	μA
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = -10 mA$ $I_B = -1 mA$ $I_C = -50 mA$ $I_B = -5 mA$			-0.25 -0.5	V V
$V_{BE(sat)}^*$	Base-Emitter Saturation Voltage	$I_C = -10 mA$ $I_B = -1 mA$ For BCY70 and BCY71 Only $I_C = -50 mA$ $I_B = -5 mA$	-0.6		-0.9 -1.2	V V
h_{FE}^*	DC Current Gain	For BCY70 $I_C = -0.1 mA$ $V_{CE} = -1 V$ $I_C = -1 mA$ $V_{CE} = -1 V$ $I_C = -10 mA$ $V_{CE} = -1 V$ $I_C = -50 mA$ $V_{CE} = -1 V$ For BCY71 $I_C = -0.01 mA$ $V_{CE} = -1 V$ $I_C = -0.1 mA$ $V_{CE} = -1 V$ $I_C = -1 mA$ $V_{CE} = -1 V$ $I_C = -10 mA$ $V_{CE} = -1 V$ $I_C = -50 mA$ $V_{CE} = -1 V$ For BCY72 $I_C = -1 mA$ $V_{CE} = -1 V$ $I_C = -10 mA$ $V_{CE} = -1 V$	40 45 50 15 80 90 100 15	60	600	
h_{fe}	Small Signal Current Gain (for BCY71 only)	$I_C = -1 mA$ $V_{CE} = -10 V$ $f = 1 kHz$	100		400	
f_T	Transition Frequency	$I_C = -0.1 mA$ $V_{CE} = -20 V$ $f = 10.7 MHz$ For BCY71 $I_C = -10 mA$ $V_{CE} = -20 V$ $f = 100 MHz$ For BCY70 For BCY70 and BCY72	15 250 200			MHz MHz MHz
C_{EBO}	Emitter-base Capacitance	$I_C = 0$ $V_{EB} = -1 V$ $f = 1 MHz$			8	pF
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = -10 V$ $f = 1 MHz$			6	pF

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

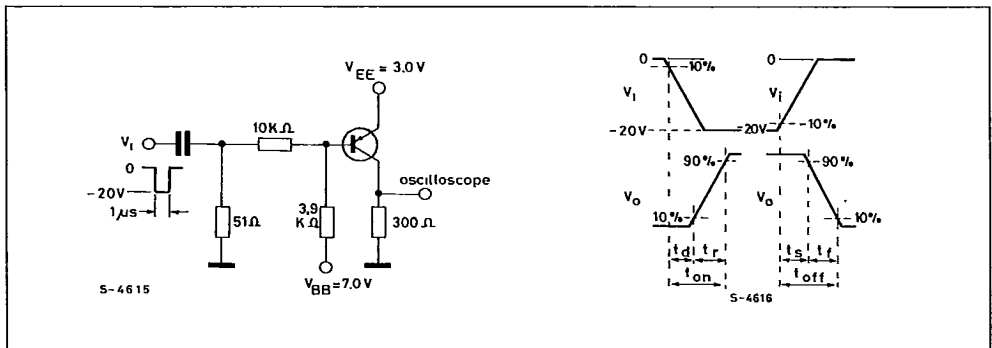
ELECTRICAL CHARACTERISTICS (continued)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
NF	Noise Figure	$I_C = -0.1 \text{ mA}$ $V_{CE} = -5 \text{ V}$ $R_g = 2 \text{ k}\Omega$ $f = 10 \text{ to } 10\,000 \text{ Hz}$ For BCY70 and BCY72 for BCY71			6 2	dB dB
h_{ie}	Input Impedance (for BCY71 only)	$I_C = -1 \text{ mA}$ $V_{CE} = -10 \text{ V}$ $f = 1 \text{ kHz}$	2		12	$\text{k}\Omega$
h_{re}	Reverse Voltage Ratio (for BCY71 only)	$I_C = -1 \text{ mA}$ $V_{CE} = -10 \text{ V}$ $f = 1 \text{ kHz}$			20×10^{-4}	
h_{oe}	Output Admittance (for BCY71 only)	$I_C = -1 \text{ mA}$ $V_{CE} = -10 \text{ V}$ $f = 1 \text{ kHz}$	10		60	μS
t_d	Delay Time (for BCY70 and BCY72 only)	$I_C = -10 \text{ mA}$ $V_{EE} = 3 \text{ V}$ $I_{B1} = -1 \text{ mA}$		23	35	ns
t_r	Rise Time (for BCY70 and BCY72 only)	$I_C = -10 \text{ mA}$ $V_{EE} = 3 \text{ V}$ $I_{B1} = -1 \text{ mA}$		25	35	ns
t_s	Storage Time (for BCY70 and BCY72 only)	$I_C = -10 \text{ mA}$ $V_{EE} = 3 \text{ V}$ $I_{B1} = -I_{B2} = -1 \text{ mA}$		270	350	ns
t_f	Fall Time (for BCY70 and BCY72 only)	$I_C = -10 \text{ mA}$ $V_{EE} = 3 \text{ V}$ $I_{B1} = -I_{B2} = -1 \text{ mA}$		50	80	ns
t_{on}	Turn-on Time (for BCY70 and BCY72 only)	$I_C = -10 \text{ mA}$ $V_{EE} = 3 \text{ V}$ $I_{B1} = -1 \text{ mA}$		48	65	ns
t_{off}	Turn-off Time (for BCY70 and BCY72 only)	$I_C = -10 \text{ mA}$ $V_{EE} = 3 \text{ V}$ $I_{B1} = -I_{B2} = -1 \text{ mA}$		320	420	ns

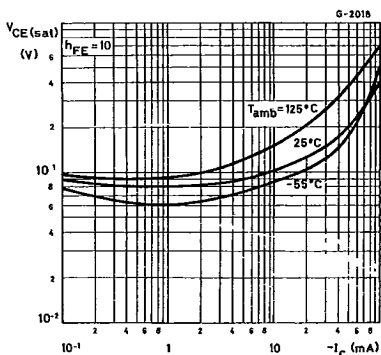
* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

TEST CIRCUIT

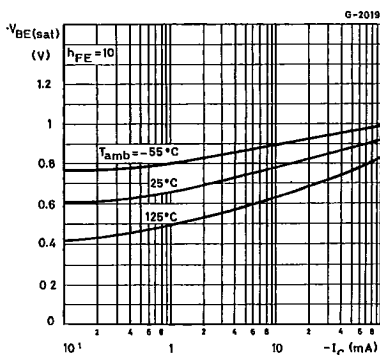
Test Circuit for Switching Times.



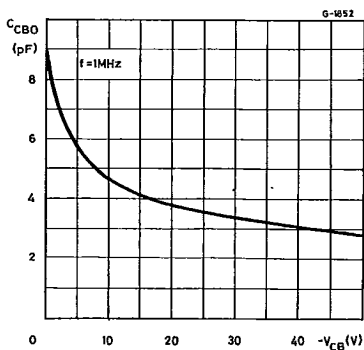
Collector-emitter Saturation Voltage.



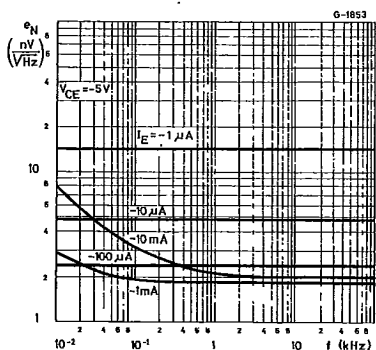
Base-emitter Saturation Voltage.



Collector-base Capacitance.



Equivalent Input Noise Voltage (for BCY71 only).

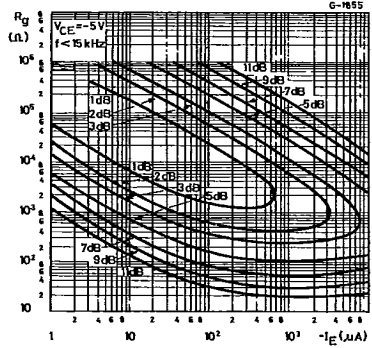
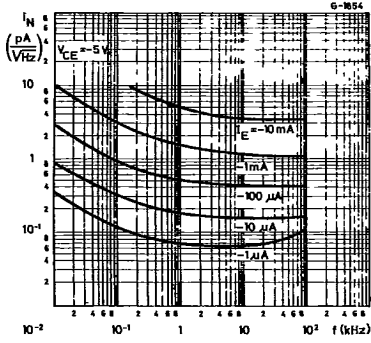


SGS-THOMSON

T-27-09

Equivalent Input Noise Current (for BCY71 only).

Contours of Constant White Noise Figure (for BCY71 only).



This datasheet has been downloaded from:

www.DatasheetCatalog.com

Datasheets for electronic components.



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.