

## Projet 1 - AIGUILLAGE / Commande d'aiguillages.

Projet : PROJETS-IUT1

Info : [DATA210]

Révision : 8 novembre 2000.

Info : Sujet de formation de projet IUT 2ème année 2000/2001.

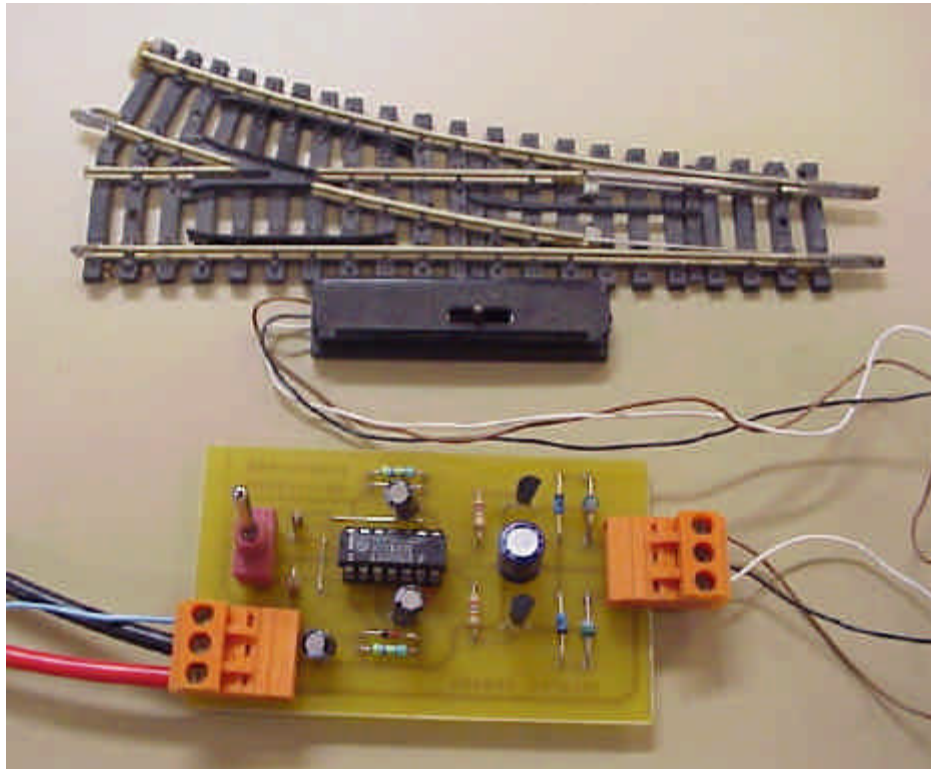


Figure 1.1. Vue du circuit imprimé (images-maquettes\aiiguillage-1.jpg).

### 1.1 Liste des documents

- Prix du montage.
- Schéma ORCAD ver 9.x.
- Circuit imprimé LAYOUT.
- Documentation du transistor TIPP111.
- Documentation de l'interrupteur C&K E101SD1CBE.
- Documentation du connecteur 3 bornes Weidmuller.

## 1.2 Liste des composants

Tableau 1.1. Liste des composants (projets-iut1.xls \ AIGUILLAGE).

Item	Quantity	Reference	Part	PCB Footprint
1	2	C2,C1	1uF	CK06
2	2	C4,C3	1uF	RADIAL06
3	2	D1,D5	15V	DO41
4	2	D2,D6	BYV95A	DO41
5	2	D3,D8	1N4148	DO35
6	1	JP1	HEADER 3	WEID3
7	1	JP2	HEADER 3	WEID3
8	2	R4,R1	1M	RB71
9	2	R2,R5	680	RC04
10	2	R6,R3	4.7K	RB71
11	1	S1	SW SPDT	SY240
12	2	TR1,TR2	TIPP111	TO92
13	1	U1	4001	14DIP300L

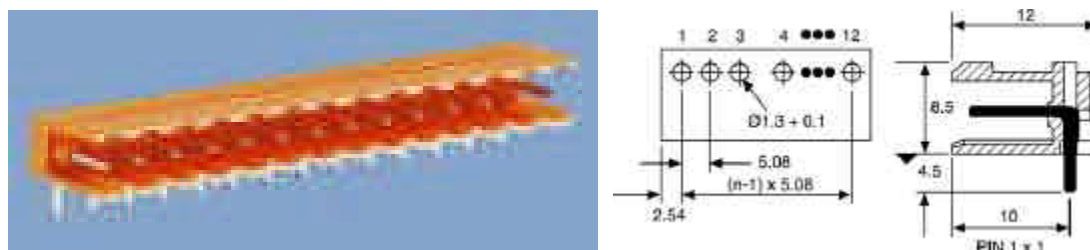


Figure 1.2. Connecteur embases Weidmüller (images-composants\connecteur1 & 2.jpg).

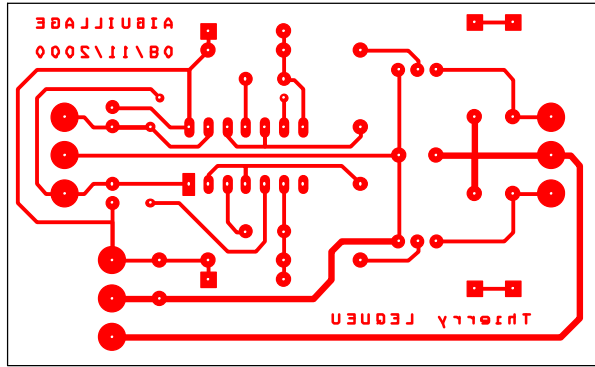


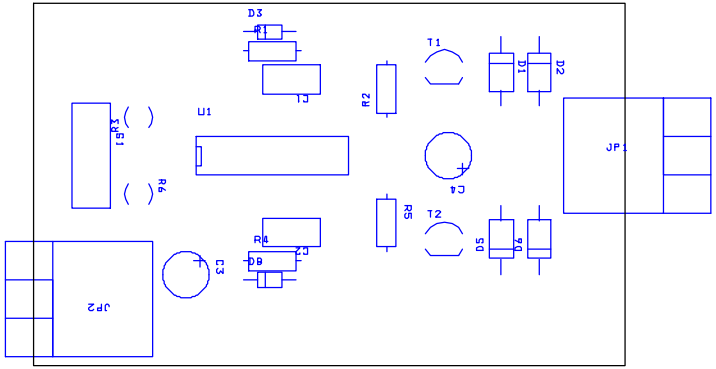
Figure 1.3. Interrupteur C & K (images-composants\connecteur2.gif).

Réf.	Désignation	Qu.	Fournisseur	Date	Code Cde	Page	U.D.V.	Prix U.H.T.	Prix T.H.T.
C1,C2	1uF 16V radial	2	IUT	2000			1	1,00 F	2,00 F
C3	10uF 16V radial	1	IUT	2000			1	1,00 F	1,00 F
C4	10uF 25V radial	1	IUT	2000			1	1,00 F	1,00 F
D1,D5	Zener 15V	2	Radiospare	2000/2001			1	1,50 F	3,00 F
D2,D6	BYV95A	2	Radiospare	2000/2001			1	1,00 F	2,00 F
D3,D8	1N4148	2	IUT	2000			1	0,50 F	1,00 F
JP1,JP2	Connecteur embases Weidmuller 3 broches male	2	Radiospare	2000/2001	404-008		5	5,00 F	2,00 F
R4,R1	470K 1/4W	2	IUT	2000/2001			1	0,10 F	0,20 F
R2,R5	680 1/4W	2	IUT	2000/2001			1	0,10 F	0,20 F
R6,R3	4.7K 1/4W	2	IUT	2000/2001			1	0,10 F	0,20 F
S1	Interrupteur C&K ON/OFF	1	Radiospare	2000/2001	352-761		1	20,61 F	20,61 F
TR1,TR	TIPP111	2	Radiospare	2000/2001	638-598		1	5,26 F	10,52 F
U1	HEF4001BP	1	IUT	2000			1	3,00 F	3,00 F
Divers	Support 14 broches	1	IUT	2000			1	2,00 F	2,00 F
Divers	Circuit imprimé simple face	43	IUT	2000			1	0,15 F	6,38 F
							1		0,00 F
							1		0,00 F

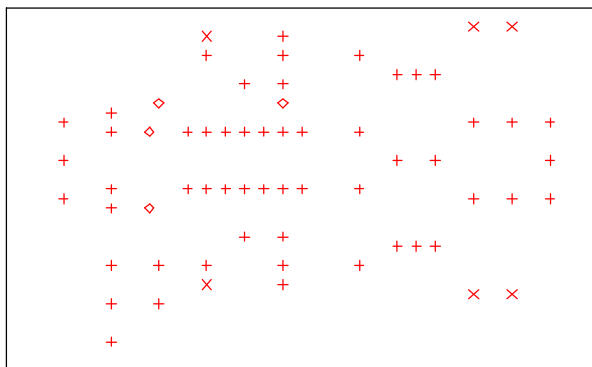
TOTAL H.T. :	55,11 F
Dont TVA : 19,60%	10,80 F
TOTAL T.T.C. :	65,91 F











DRILL CHART				
SYM	DIAM	TOL	QTY	NOTE
x	0.010		6	
+	0.020		55	
◇	0.02B		4	
TOTAL			65	

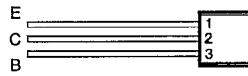


# TIPP110, TIPP111, TIPP112 NPN SILICON POWER DARLINGTONS

MAY 1989 - REVISED APRIL 1995

- 20 W Pulsed Power Dissipation
- 100 V Capability
- 2 A Continuous Collector Current
- 4 A Peak Collector Current

LP PACKAGE  
(TOP VIEW)



MDTRAB

## absolute maximum ratings at 25°C case temperature (unless otherwise noted)

RATING		SYMBOL	VALUE	UNIT
Collector-base voltage ( $I_E = 0$ )	TIPP110	$V_{CBO}$	60	V
	TIPP111		80	
	TIPP112		100	
Collector-emitter voltage ( $I_B = 0$ )	TIPP110	$V_{CEO}$	60	V
	TIPP111		80	
	TIPP112		100	
Emitter-base voltage		$V_{EBO}$	5	V
Continuous collector current		$I_C$	2	A
Peak collector current (see Note 1)		$I_{CM}$	4	A
Continuous base current		$I_B$	50	mA
Continuous device dissipation at (or below) 25°C case temperature (see Note 2)		$P_{tot}$	0.8	W
Pulsed power dissipation (see Note 3)		$P_T$	20	W
Operating junction temperature range		$T_j$	-55 to +150	°C
Storage temperature range		$T_{stg}$	-55 to +150	°C
Lead temperature 3.2 mm from case for 10 seconds		$T_L$	260	°C

- NOTES: 1. This value applies for  $t_p \leq 0.3$  ms, duty cycle  $\leq 10\%$ .  
 2. Derate linearly to 150°C case temperature at the rate of 0.32 W/°C.  
 3.  $V_{CE} = 20$  V,  $I_C = 1$  A,  $P_W = 10$  ms, duty cycle  $\leq 2\%$ .

PRODUCTION DATA Information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all the parameters.



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**NOR GATE**

- 4000B-DUAL 3 INPUT PLUS INVERTER**
- 4001B-QUAD 2 INPUT**
- 4002B-DUAL 4 INPUT**
- 4025B TRIPLE 3 INPUT**

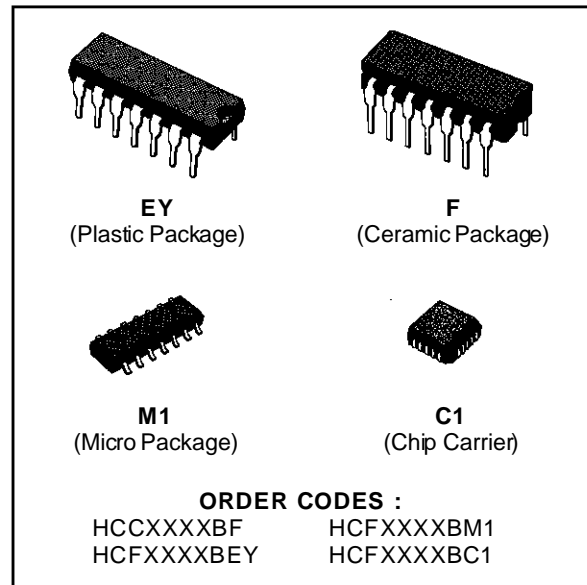
- PROPAGATION DELAY TIME = 60 ns (typ.) AT  $C_L = 50$  pF,  $V_{DD} = 10$  V
- BUFFERED INPUTS AND OUTPUTS
- STANDARDIZED SYMMETRICAL OUTPUT CHARACTERISTICS
- QUIESCENT CURRENT SPECIFIED TO 20 V FOR HCC DEVICE
- 5V, 10V AND 15V PARAMETRIC RATINGS
- INPUT CURRENT OF 100nA AT 18V AND 25 °C FOR HCC DEVICE
- 100% TESTED FOR QUIESCENT CURRENT
- MEETS ALL REQUIREMENTS OF JEDEC TENTATIVE STANDARD N. 13A, "STANDARD SPECIFICATIONS FOR DESCRIPTION OF B SERIES CMOS DEVICES"

**DESCRIPTION**

The **HCC4000B**, **HCC4001B**, **HCC4002B** and **HCC4025B** (extended temperature range) and **HCF4000B**, **HCF4001B**, **HCF4002B** and **HCF4025B** (intermediate temperature range) are monolithic integrated circuit, available in 14-lead dual in line plastic or ceramic package and plastic

micropackage.

The **HCC/HCF4000B**, **HCC/HCF4001B**, **HCC/HCF4002B** and **HCC/HCF4025B** nor gate provide the system designer with direct implementation of the nor function and supplement the existing family of COS/MOS gates. All inputs and outputs are buffered.



**PIN CONNECTIONS**

