

# **www.mbsm.pro , Porte-fusible à couteaux HPC ultra rapide**

written by mahdi miled | 25 November 2017

## **Généralités**

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Les cartouches-fusible HPC des classes de fonctionnement gG et gL protègent les appareils électriques des sur charges et des courts-circuits. Elles sont destinées avant tout à la protection des circuits électriques basse tension. Ces classes de fonctionnement gG et gL impliquent la coupure en toute sécurité de tout courant capable de faire fondre le fusible.

mbsmdotpro- porte-fusible-couteaux-ultra-rapide.jpg (83 KB)



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# **www.mbsm.pro , Practical Electronics for Inventors, Fourth Edition**

written by mahdi miled | 25 November 2017

**Practical Electronics for Inventors, Fourth Edition**

by: Paul Scherz, Dr. Simon Monk

**Abstract:** A fully updated, no-nonsense guide to electronics. Advance your electronics knowledge and gain the skills necessary to develop and construct your own functioning gadgets. Written by a pair of experienced engineers and dedicated hobbyists, Practical Electronics for Inventors, Fourth Edition, lays out the essentials and provides step-by-step instructions, schematics, and illustrations. Discover how to select the right components, design and build circuits, use microcontrollers and ICs, work with the latest software tools,

and test and tweak your creations. This easy-to-follow book features new instruction on programmable logic, semiconductors, operational amplifiers, voltage regulators, power supplies, digital electronics, and more. Coverage includes:

- Resistors, capacitors, inductors, and transformers
- Diodes, transistors, and integrated circuits
- Optoelectronics, solar cells, and phototransistors
- Sensors, GPS modules, and touch screens
- Op amps, regulators, and power supplies
- Digital electronics, LCDs, and logic gates
- Microcontrollers and prototyping platforms
- Combinational and sequential programmable logic
- DC motors, RC servos, and stepper motors
- Microphones, audio amps, and speakers
- Modular electronics and prototypes

## Book Details

Title: Practical Electronics for Inventors, Fourth Edition

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ISBN: 9781259587542

## Authors:

Paul Scherz is a Systems Operation Manager who received his B.S. in physics from the University of Wisconsin. He is an inventor/hobbyist in electronics, an area he grew to appreciate through his experience at the University's Department of Nuclear Engineering and Engineering Physics and Department of Plasma Physics.

Dr. Simon Monk has a bachelor's degree in cybernetics and computer science and a Ph.D. in software engineering. He spent several years as an academic before he returned to industry,

co-founding the mobile software company Momote Ltd. He has been an active electronics hobbyist since his early teens and is a full-time writer on hobby electronics and open-source hardware. Dr. Monk is author of numerous electronics books, including Programming Arduino, Hacking Electronics, and Programming the Raspberry Pi.

**Description:** A fully updated, no-nonsense guide to electronics. Advance your electronics knowledge and gain the skills necessary to develop and construct your own functioning gadgets. Written by a pair of experienced engineers and dedicated hobbyists, Practical Electronics for Inventors, Fourth Edition, lays out the essentials and provides step-by-step instructions, schematics, and illustrations. Discover how to select the right components, design and build circuits, use microcontrollers and ICs, work with the latest software tools, and test and tweak your creations. This easy-to-follow book features new instruction on programmable logic, semiconductors, operational amplifiers, voltage regulators, power supplies, digital electronics, and more. Coverage includes:

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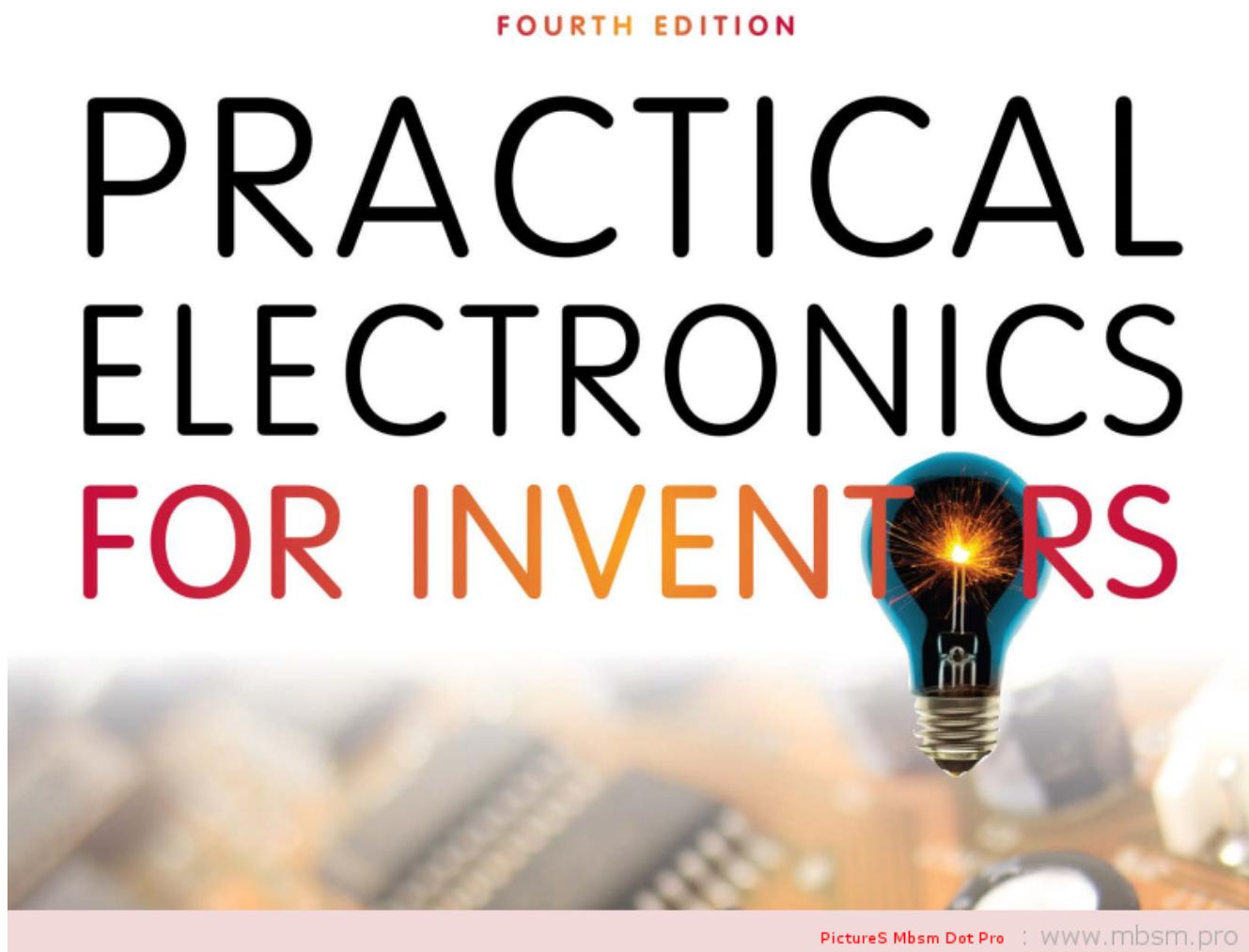
C. Useful Facts and Formulas

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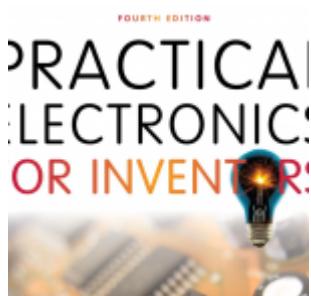
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Quadratic Equation ( $y = ax^2 + bx + c$ )  
Exponents and Logarithms  
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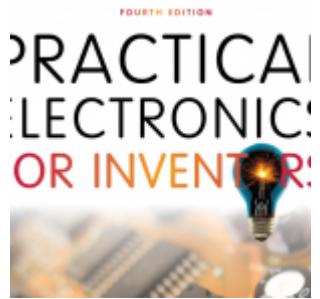
1. <https://www.amazon.com/Practical-Electronics-Inventors-Fourth-Scherz/dp/1259587541> [back]

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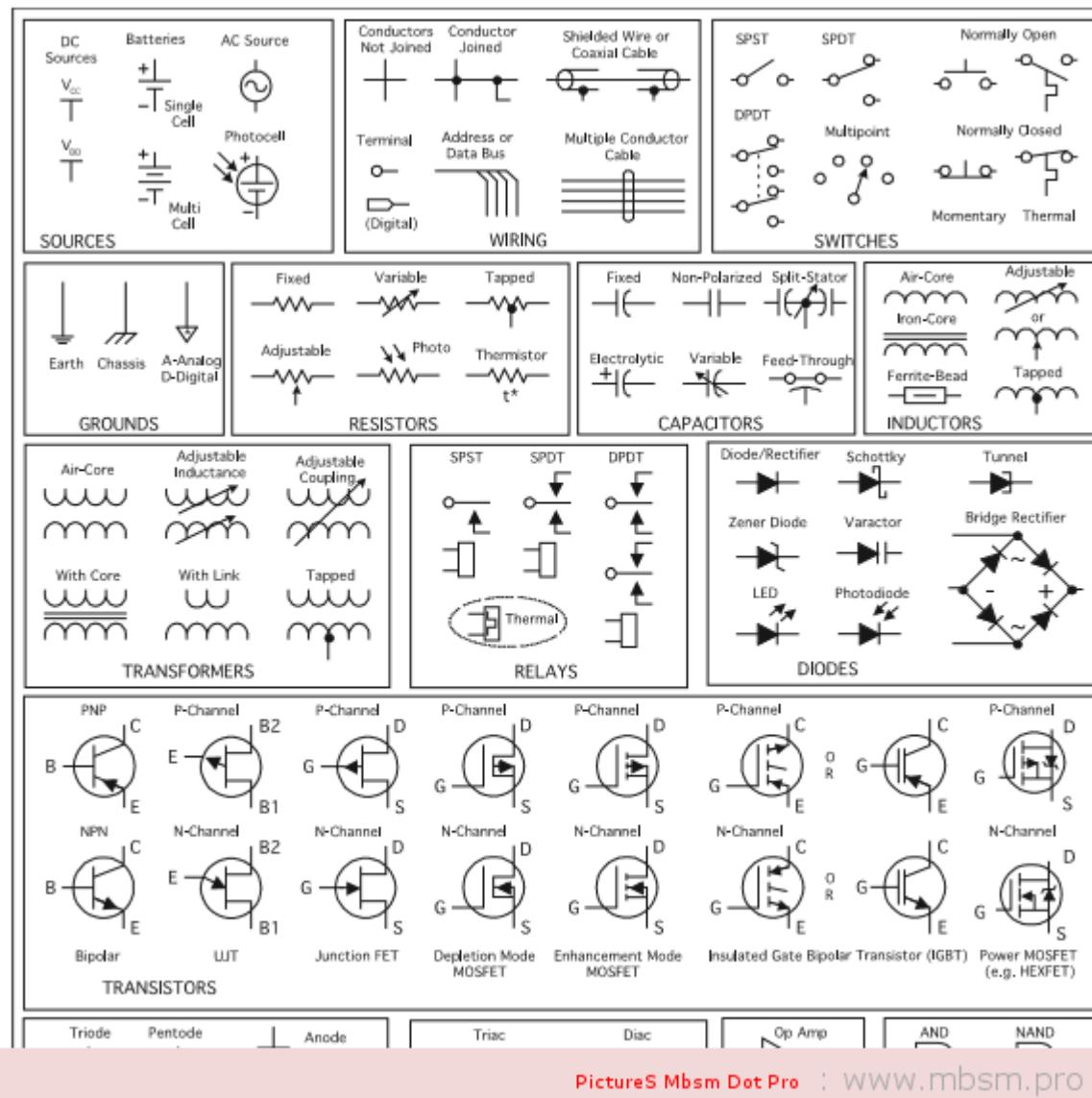


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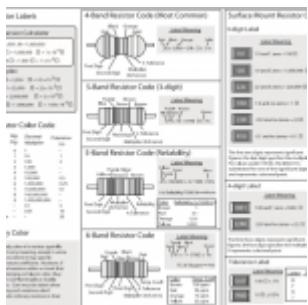
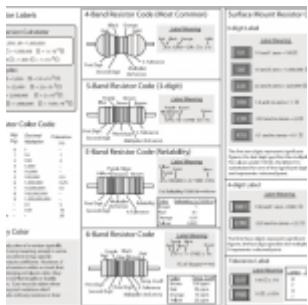
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Resistor Labels																																																											
<p><b>Conversion Calculator</b></p> $k = 1,000 ; M = 1,000,000$ $1M\Omega = 1,000,000 \Omega = 1 \times 10^6 \Omega$ $1k\Omega = 1,000 \Omega = 1 \times 10^3 \Omega$																																																											
<p><b>Examples:</b></p> $3.3 \text{ k}\Omega = 3,300 \Omega = 3.3 \times 10^3 \Omega$ $22 \text{ k}\Omega = 22,000 \Omega = 22 \times 10^3 \Omega$ $2 \text{ M}\Omega = 2,000,000 \Omega = 2 \times 10^6 \Omega$ $1.68 \text{ M}\Omega = 1,680,000 \Omega = 1.68 \times 10^6 \Omega$																																																											
<p><b>Resistor Color Code</b></p> <table border="1"> <thead> <tr> <th>Color</th> <th>Sig. Fig.</th> <th>Decimal Multiplier</th> <th>Tolerance (%)</th> </tr> </thead> <tbody> <tr><td>Black</td><td>0</td><td>1</td><td>-</td></tr> <tr><td>Brown</td><td>1</td><td>10</td><td>1</td></tr> <tr><td>Red</td><td>2</td><td>100</td><td>2</td></tr> <tr><td>Orange</td><td>3</td><td>1,000</td><td>-</td></tr> <tr><td>Yellow</td><td>4</td><td>10,000</td><td>-</td></tr> <tr><td>Green</td><td>5</td><td>100,000</td><td>0.5</td></tr> <tr><td>Blue</td><td>6</td><td>1,000,000</td><td>0.25</td></tr> <tr><td>Purple</td><td>7</td><td>10,000,000</td><td>0.1</td></tr> <tr><td>Gray</td><td>8</td><td>100,000,000</td><td>-</td></tr> <tr><td>White</td><td>9</td><td>1,000,000,000</td><td>-</td></tr> <tr><td>Gold</td><td>-</td><td>0.1</td><td>5</td></tr> <tr><td>Silver</td><td>-</td><td>0.01</td><td>10</td></tr> <tr><td>No Color</td><td>-</td><td>-</td><td>20</td></tr> </tbody> </table>				Color	Sig. Fig.	Decimal Multiplier	Tolerance (%)	Black	0	1	-	Brown	1	10	1	Red	2	100	2	Orange	3	1,000	-	Yellow	4	10,000	-	Green	5	100,000	0.5	Blue	6	1,000,000	0.25	Purple	7	10,000,000	0.1	Gray	8	100,000,000	-	White	9	1,000,000,000	-	Gold	-	0.1	5	Silver	-	0.01	10	No Color	-	-	20
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<p><b>Body Color</b></p> <p>The body color of a resistor typically doesn't carry meaning, except in some instances where it may specify temperature coefficient. However, if you find resistors within a circuit that are white/gray or blue in color, they may be non-flammable or fusible resistors. Care must be taken when replacing such resistors.</p>																																																											
<p><b>4-Band Resistor Code (Most Common)</b></p> <p><b>Label Meaning</b></p> $Red \text{ Black } Orange \text{ Gold}$ $20 \times 1,000 = 20k \Omega \pm 5\%$																																																											
<p><b>5-Band Resistor Code (3-digit)</b></p> <p><b>Label Meaning</b></p> $Purple \text{ Blue } Green \text{ Brown }$ $675 \times 10 = 6750 \Omega \pm 1\%$																																																											
<p><b>5-Band Resistor Code (Reliability)</b></p> <p><b>Label Meaning</b></p> $Purple \text{ Yellow } Green \text{ Silver }$ $47 \times 100,000 = 4.7 \text{ M}\Omega \pm 10\%$ <p>1% Reliability/1000 Hr — Brown</p> <table border="1"> <thead> <tr> <th>Color</th> <th>Reliability (%/1000 Hr)</th> </tr> </thead> <tbody> <tr><td>Brown</td><td>1</td></tr> <tr><td>Red</td><td>0.1</td></tr> <tr><td>Orange</td><td>0.01</td></tr> <tr><td>Yellow</td><td>0.001</td></tr> </tbody> </table>				Color	Reliability (%/1000 Hr)	Brown	1	Red	0.1	Orange	0.01	Yellow	0.001																																														
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Yellow	0.001																																																										
<p><b>6-Band Resistor Code</b></p> <p><b>Label Meaning</b></p> $Purple \text{ Red } Black \text{ Blue } Brown \text{ Red }$ $276 \times 1 = 276\Omega \pm 1\%$ <p>TC of 50 ppm — Red</p> <table border="1"> <thead> <tr> <th>Color</th> <th>Temp. Coeff.</th> </tr> </thead> <tbody> <tr><td>Brown</td><td>100 ppm</td></tr> <tr><td>Red</td><td>50 ppm</td></tr> </tbody> </table>				Color	Temp. Coeff.	Brown	100 ppm	Red	50 ppm																																																		
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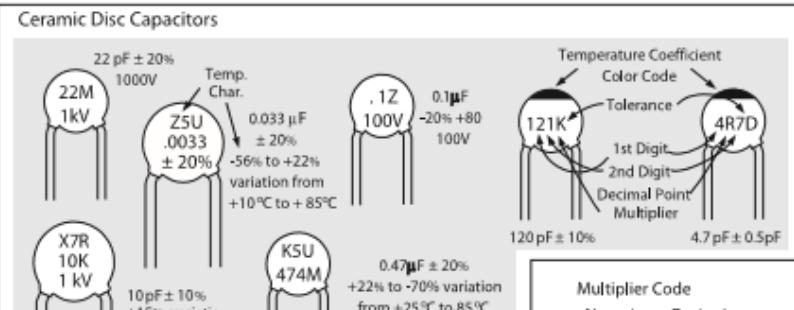
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# Capacitor Markings

Capacitance Conversion Calculator		
$1 \text{ F} = 1 \times 10^6 \mu\text{F} = 1 \times 10^9 \text{nF} = 1 \times 10^{12} \text{pF}$		
$1 \mu\text{F} = 1 \times 10^{-6} \text{F} = 1 \times 10^{-3} \text{nF} = 1 \times 10^{-6} \text{pF}$		
$1 \text{nF} = 1 \times 10^{-9} \text{F} = 1 \times 10^{-5} \mu\text{F} = 1 \times 10^{-3} \text{pF}$		
$1 \text{ pF} = 1 \times 10^{-12} \text{F} = 1 \times 10^{-6} \mu\text{F} = 1 \times 10^{-3} \text{nF}$		
F = Farad, $\mu$ = micro, n = nano, p = pico		
$1000 \mu\text{F} = 1,000,000 \text{nF} = 10 \times 10^{-8} \text{pF}$		
$100 \mu\text{F} = 100,000 \text{nF} = 10 \times 10^{-7} \text{pF}$		
$10 \mu\text{F} = 10,000 \text{nF} = 10 \times 10^{-6} \text{pF}$		
$1 \mu\text{F} = 1,000 \text{nF} = 10 \times 10^{-5} \text{pF}$		
$0.1 \mu\text{F} = 100 \text{nF} = 10 \times 10^{-4} \text{pF}$		
$0.01 \mu\text{F} = 10 \text{nF} = 10 \times 10^{-3} \text{pF}$		
$0.001 \mu\text{F} = 1 \text{nF} = 10 \times 10^{-2} \text{pF}$		

Tantalum		
<b>Label meaning 1</b> 		
Color	S.F.	Multiplier Voltage
Black	0	1 10V
Brown	1	10
Red	2	100
Orange	3	1000
Yellow	4	6.3V
Green	5	16V
Blue	6	20V
Violet	7	
Gray	8	0.01 25V
White	9	0.1 3V
Pink		35V
<b>Label meaning 2</b> Marking Actual 22 22μF, 16 V		

Mylar (Polyester Film)		
Polypropylene		
Dipped Mica		
<b>Label meaning</b> Marking Actual .001K* 0.001μF, ± 10% 104K 0.1μF, ± 10% .22J* 0.22μF, ± 5% 472K 0.0047μF, ± 10% 221J 220 pF, ± 5% 470J 47pF, ± 5% 102J 1000pF, ± 5% 103F 0.01μF, ± 1% 223F 0.022μF, ± 1%		
<b>Voltage Rating</b>		



Temperature Coefficient	
Color Code	Tolerance
1st Digit	1st Digit
2nd Digit	2nd Digit
Decimal Point	Decimal Point
Multiplication	Multiplication

Numeric Character	Decimal Multiplier (pF)
0	None
1	10
2	100
3	1000
4	10,000

EIA Capacitor Tolerance Codes	
Letter	$\leq 10 \text{ pF}$
B	$\pm 0.1 \text{ pF}$
C	$\pm 0.25 \text{ pF}$
D	$\pm 0.5 \text{ pF}$
E	—
F	$\pm 1 \text{ pF}$
G	—
H	—
J	—
K	—
M	—
P	$-0 + 100\%$
S	—
W	$-20 + 50\%$
X	$-20 + 40\%$
Z	$-20 + 80\%$

Ceramic Disc (European Markings)	
<b>Label Meaning</b>	
Marking Actual	Marking Actual
p68 0.68 pF	22p 22 pF
1p0 1.0 pF	n10 0.1 nF
4p7 4.7 pF	n27 0.27 nF

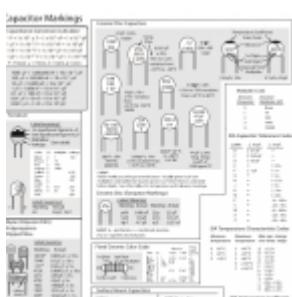
EIA Temperature Characteristic Codes	
Minimum temperature	Maximum temperature
X -55°C	2 +45°C
Y -35°C	4 +65°C
Z +10°C	5 +85°C
	6 +105°C
	7 +125°C
	8 +145°C
	9 +165°C

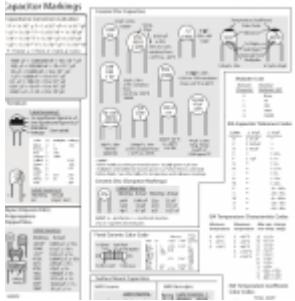
Max cap. change over temp. range	
A $\pm 1.0\%$	
B $\pm 1.5\%$	
C $\pm 2.2\%$	
D $\pm 3.3\%$	
E $\pm 4.7\%$	
F $\pm 7.5\%$	
P $\pm 10\%$	
R $\pm 15\%$	
S $\pm 22\%$	
T $-33\%, +22\%$	
U $-56\%, +22\%$	
V $-82\%, +22\%$	

EIA Temperature Coefficient

PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

[www-mbsm-pro-Practical-Electronics-for-Inventors-Fourth-Edition4.png \(178 KB\)](http://www-mbsm-pro-Practical-Electronics-for-Inventors-Fourth-Edition4.png)





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# **www.mbsm.pro , Finition Électricité partie 1**

written by mahdi miled | 25 November 2017



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

[www.mbsm.pro](http://www.mbsm.pro) , Finition Électricité partie 1

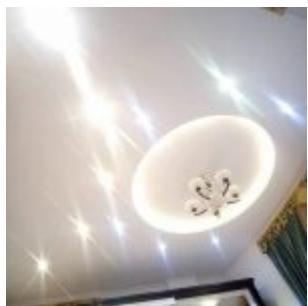
Image : <https://www.facebook.com/www.hegay/>

[mbsm-dot-pro-electricitee-X.jpg](#) (49 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsm-dot-pro-electricitee-X.jpg (57 KB)



mbsm-dot-pro-electricitee-C.jpg (22 KB)



mbsm-dot-pro-electricitee-C.jpg (28 KB)



mbsm-dot-pro-electricitee-D.jpg (29 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsm-dot-pro-electricitee-D.jpg (37 KB)





mbsm-dot-pro-electricitee-E.jpg (28 KB)



mbsm-dot-pro-electricitee-E.jpg (34 KB)



mbsm-dot-pro-electricitee-F.jpg (42 KB)



mbsm-dot-pro-electricitee-F.jpg (49 KB)



mbsm-dot-pro-electricitee-G.jpg (42 KB)



mbsm-dot-pro-electricitee-G.jpg (49 KB)



mbsm-dot-pro-electricitee-H.jpg (31 KB)



mbsm-dot-pro-electricitee-H.jpg (37 KB)



mbsm-dot-pro-electricitee-I.jpg (28 KB)



mbsm-dot-pro-electricitee-I.jpg (33 KB)



mbsm-dot-pro-electricitee-W.jpg (55 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsm-dot-pro-electricitee-W.jpg (63 KB)



mbsm-dot-pro-electricitee-K.jpg (34 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsm-dot-pro-electricitee-K.jpg (39 KB)





mbsm-dot-pro-electricitee-M.jpg (29 KB)



mbsm-dot-pro-electricitee-M.jpg (35 KB)



mbsm-dot-pro-electricitee-N.jpg (47 KB)



mbsm-dot-pro-electricitee-N.jpg (54 KB)



mbsm-dot-pro-electricitee-0.jpg (37 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsm-dot-pro-electricitee-0.jpg (45 KB)





mbsm-dot-pro-electricitee-P.jpg (42 KB)



mbsm-dot-pro-electricitee-P.jpg (47 KB)



mbsm-dot-pro-electricitee-Q.jpg (58 KB)



mbsm-dot-pro-electricitee-Q.jpg (69 KB)



mbsm-dot-pro-electricitee-R.jpg (50 KB)



mbsm-dot-pro-electricitee-R.jpg (58 KB)



mbsm-dot-pro-electricitee-S.jpg (43 KB)



mbsm-dot-pro-electricitee-S.jpg (52 KB)



mbsm-dot-pro-electricitee-Y.jpg (71 KB)



mbsm-dot-pro-electricitee-Y.jpg (82 KB)



mbsm-dot-pro-electricitee-V.jpg (33 KB)



mbsm-dot-pro-electricitee-V.jpg (41 KB)



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# **www.mbsm.pro , branchement de detecteur de mouvement infrarouge exterieur**

written by mahdi miled | 25 November 2017

www.mbsm.pro , branchement de detecteur de mouvement infrarouge exterieur

mbsm\_dot\_pro\_detecteur2.jpg (42 KB)



mbsm\_dot\_pro\_detecteur2.jpg (49 KB)



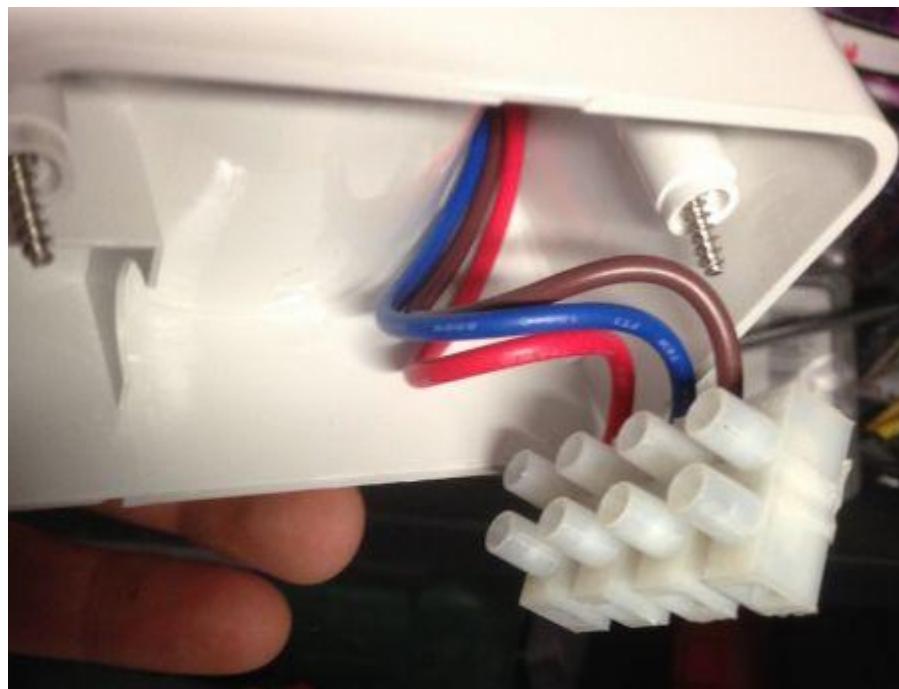
mbsm\_dot\_pro\_detecteur.png (26 KB)



mbsm\_dot\_pro\_detecteur.png (26 KB)



mbsm\_dot\_pro\_detecteur1.png (167 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsm\_dot\_pro\_detecteur1.png (156 KB)



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# قصيدة بمناسبة اليوم العالمي للمرأة للشاعر التونسي منير بن صالح ميلاد

written by mahdi miled | 25 November 2017

International\_Women's\_Day\_mbsm\_dot\_pro.jpg (203 KB)



Picture5 Mbsm Dot Pro : www.mbsm.pro

International\_Women's\_Day\_mbsm\_dot\_pro.jpg (189 KB)





International\_Women's\_Day\_mbsm\_dot\_pro2.png (34 KB)

أعترف ياقلبي أنك تحب كل النساء  
أعترف أنك لست من الحمقى ولا من الجبناء  
ولست طاغوت دين يجالس السفهاء  
أنت ياقلبي تعشق جنس الطيبة والوفاء  
وتاجا من النور على رؤوس النبلاء  
نساء صنعن بأيديهن التاريخ ولبنين النداء  
ورفعن راية المجد عالية في غياهب السماء  
**سأعيش رغم الداء والأعداء كالنسر فوق القيمة الشماء**  
**أرנו إلى الشمس المضيئة .. هاربا بالسحب، والأمطار، والأنواء**  
أعترف ياقلبي أنك تحب إهتزاز الثورة  
على صدور الشرفاء  
ووأن أمي هي مناضلة بل هي أجمل النساء...

PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

International\_Women's\_Day\_mbsm\_dot\_pro2.png (33 KB)

، ياقلبي أنك تحب كل النساء  
، أنك لست من الحمقى ولا من الجبناء  
، طاغوت دين يجالس السفهاء  
ياقلبي تعشق جنس الطيبة والوفاء  
من النور على رؤوس النبلاء  
صنعن بأيديهن التاريخ ولبنين النداء  
، راية المجد عالية في غياهب السماء  
، رغم الداء والأعداء كالنسر فوق القيمة الشماء  
لي الشمس المضيئة .. هاربا بالسحب، والأمطار، والأنواء  
، ياقلبي أنك تحب إهتزاز الثورة  
سور الشرفاء  
أني هي مناضلة بل هي أجمل النساء...  
الشاعر التونسي مهدي بن صالح بن علي

ياقلني أنت تحب كل النساء  
 ، أنت لست من الحمقى ولا من الجنينا  
 ، ملائقوت دين يجاسن السفهاء  
 ياقلني تعيش جنس الطيبة والوفاء  
 من التور على رؤوس البيهلا  
 صدفن بأيديهن التاريخ وابني النساء  
 ، زاوية العجد عاليه في غياهب النساء  
 عن رغم النساء وأذنام كافش فوق الفقة المخنث  
 لي الفقنس العصبية .. هازنا بالشعب، والأمعاء، والأذواة  
 ، ياقلني أنت تحب إهانات المرأة  
 سدور الشرفاء  
 أهي هي مناخنة بن هي أجمل النساء..  
[الشاعر التونسي مهدي بن صالح ميلاد](#)

International\_Women's\_Day\_mbsm\_dot\_pro.jpg1.jpg (185 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

International\_Women's\_Day\_mbsm\_dot\_pro.jpg1.jpg (44 KB)





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# **www.mbsm.pro , Schema de branchement interphone acet ,interphone acet nuance audio 67620x – 67622x**

written by mahdi miled | 25 November 2017

[www.mbsm.pro](http://www.mbsm.pro) , Schema de branchement interphone acet  
,interphone acet nuance audio 67620x – 67622x

mbsmdotpro-interphonel.jpg (67 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsmdotpro-interphone1.jpg (39 KB)



mbsmdotpro-interphone2.jpg (66 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsmdotpro-interphone2.jpg (39 KB)



mbsmdotpro-interphone3.jpg (86 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsmdotpro-interphone3.jpg (50 KB)



mbsmdotpro-interphone4.jpg (134 KB)



mbsmdotpro-interphone4.jpg (98 KB)



mbsmdotpro-interphone5.jpg (1 MB)



mbsmdotpro-interphone5.jpg (1 MB)



mbsmdotpro-interphone6.jpg (1 MB)



mbsmdotpro-interphone6.jpg (1 MB)



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**www.mbsm.pro , Contrôleur de température numérique / thermoélectrique / pour système frigorifique ou couveuse , STC-200+ ,**

# STC-1000+

written by mahdi miled | 25 November 2017

Le contrôleur de température de STC-200+ est conçu avec l'arrangement séparé de menu d'utilisateur et de menu d'administrateur. Les options incluses dans cette unité sont alarmantes, chauffage, et modules de frigorification. Ce cooler de la température est applicable à tous les types d'entreposage au froid qui exige la température accrue. Il est également approprié au réfrigérateur de l'eau et à la machine de fruits de mer.

mbsmdotpro-regulateur (0).jpg (15 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsmdotpro-regulateur (0).jpg (16 KB)





mbsmdotpro-regulateur (1).png (527 KB)

### K&BNT® STC-1000 Operation Instruction

**Main function**

Switch the modes between cool and heat; Control temperature by setting the temperature set value and the difference value; Temperature calibration; Refrigerating control output delay protection; Alarm when temperature exceeds temperature limit or when sensor error.

**Specification and size**

- Front panel size: 75(L)×34.5(W)(mm)
- Product size: 75(L)×34.5(W)×85(D)(mm)
- Mounting size: 71(L)×29(W)(mm)
- Sensor length: 2m(include the probe)

**Technical parameters**

- Temperature measuring range: -50°C ~ 99°C
- Accuracy: ±1°C(-50°C ~ 70°C)
- Power supply: 220VAC±10%, 50/60Hz
- Sensor: NTC sensor (1PC)
- Relay contact capacity: Cool(10A/250VAC);Heat(10A/250VAC)
- Ambient temperature: 0°C ~ 60°C
- Relative humidity: 20 ~ 85% (No condensate)
- Resolution: 0.1°C
- sensor error delay: 1 minute
- Power consumption: <3W
- Storage temperature: -30°C ~ 75°C

**Panel instruction**

Display instruction: Three-digit LED + minus digit + Status indicator light (Status indicator light (Cool, Heat) + Set indicator light (Set))  
Key instruction: "S" key: the key to set; "▲" key: Up key;  
"▼" key: Down key; "□": the key to turn on and off the power

**Indicator light status instruction**

Indicator light	Function	Note
Cool indicator light	On:Refrigeration starts;Off:Refrigeration stops;Flash:compressor delay	Cool, Heat indicator light can be "on" status simultaneously
Heat indicator light	On: heating starts;Off:heating stops	
Set indicator light	On:parameter setting status	

**Key operation instruction**

- The way to check parameter:  
Under normal working status, press and release "▲" key once instantly, it displays temperature setting value;press and release "▼" key once instantly, it displays the difference value. It back to display the normal temperature display status in 2s.
- The way to set parameter:  
Under controller normal working status, press "S" key for 3s or more to enter parameter modifying mode, and the "Set" indicator light on, screen displays the first menu code "F1".  
Press "▲" key or "▼" key to adjust up and down and display the menu item and the code of the menu item.Press "S" key to display the parameter value of the current menu. Press both "S" key and hold "▲" key or "▼" key simultaneously to choose and adjust the parameter value of the current menu value promptly. After finishing the setting, press and release the "□" key instantly to save parameter modified value and return to display the normal temperature value. If no key operation within 10 seconds, system won't save modified parameter, screen back to display normal temperature.  
Screen display "Er" if error appears during parameter saving, and back to normal working status in 3 seconds.
- Restore system data  
When electrified, system will check itself, screen will display "Er" if error exit, please press any key at this time, and it restores default value and enter into normal working mode. It is advised to reset the parameter value under such conditions.

**Operation instruction**

Under controller normal working status, press and hold "□" key for 3s can turn off the controller; Under controller "off" status, press and hold "□" key for 3s can turn on the controller.

Under the controller normal working status, screen displays the current measuring temperature value; also the controller can also switch the working mode between heating and cooling.

Controller starts refrigerating with cool indicator light on when the measuring temperature value ≥ temperature set value + difference value, and the refrigerating relay is connected; If the "Cool" indicator light flashes, it indicates the refrigerating equipment is under compressor delay protect status; when the measuring temperature ≥ temperature set value, the Cool indicator light on, and refrigerating relay disconnects.

System starts heating when the measuring temperature value ≤ the temperature set value-difference value, and the "Heat" indicator light on, the heat relay connects; When the measuring temperature ≥ temperature set value, the "Heat" indicator light is off, and the heat relay disconnects.

**Menu instruction**

Code	Function	Set range	Default	Note
F1	Temperature set value	-50.0 ~ 99.9°C	10.0°C	
F2	Difference set value	0.3 ~ 10.0°C	0.5°C	
F3	Compressor delay time	1 ~ 10 minutes	3 minutes	
F4	Temperature calibration value	-10.0°C ~ 10.0°C	0°C	

**Error description**

Alarm when sensor error. Controller activate the sensor error alarm mode when sensor open circuit or short circuit, all the running status is closed off with the buzzer alarms, and the nixie tube displays "EE", press any key can cancel alarm sound, system back to display the normal temperature when the error and the fault is cleared.

Alarm when the measuring temperature exceeds temperature measuring range: Controller activates the error alarm function when the measuring temperature exceeds the temperature measuring range, all the running status is closed off with the buzzer alarms, and the nixie tube displays "HH". Press any key can cancel alarm sound, system back to display the normal working mode when the temperature restore to normal measuring range.

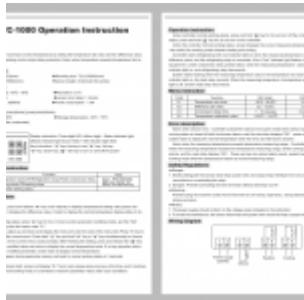
**Safety Regulations**

- Danger:**
  - Strictly distinguish the sensor down-lead, power wire and output relay interface from one another, and prohibit wrong connections or overloading the relay.
  - Dangers: Prohibit connecting the wire terminals without electricity cut-off.
- Warning:**
  - Prohibit using the machine under the environment of over damp, high temp., strong electromagnetism interference or strong corrosion.
  - Notice:**
    - The power supply should conform to the voltage value indicated in the instruction.
    - To avoid the interference, the sensor down-lead and power wire should be kept a proper distance.

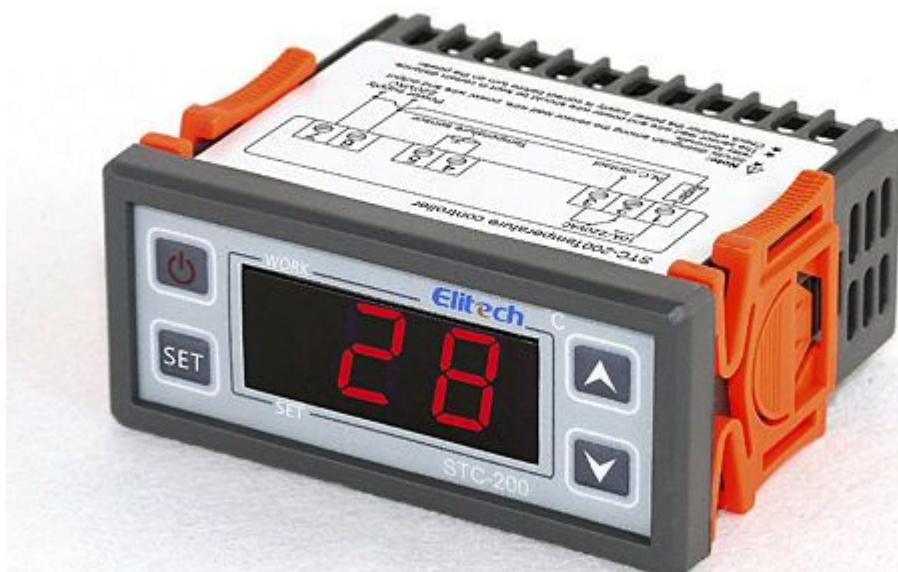
**Wiring diagram**

Pictures Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsmdotpro-regulateur (1).png (480 KB)



mbsmdotpro-regulateur (2).jpg (58 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

mbsmdotpro-regulateur (2).jpg (36 KB)



mbsmdotpro-regulateur (3).jpg (32 KB)



mbsmdotpro-regulateur (3).jpg (22 KB)

	Parameter setting range
ng	1°C~15°C
	0~9Minute
	-40°C~set temperature
	Set temperature-7
	1: refrigeration 2:heating
	-5°C~+5°C

	Parameter setting range
ng	1°C~15°C
	0~9Minute
	-40°C~set temperature
	Set temperature-7
	1: refrigeration 2:heating
	-5°C~+5°C

mbsmdotpro-regulateur (4).jpg (15 KB)



mbsmdotpro-regulateur (4).jpg (15 KB)



mbsmdotpro-regulateur (5).jpg (124 KB)



mbsmdotpro-regulateur (5).jpg (126 KB)



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# **www.mbsm.pro , Crazy Funny Pictures**

written by mahdi miled | 25 November 2017  
The Best Funny Pictures website on the internet

Mbsm-pro-funny (2).jpg (49 KB)



Pictures Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

Mbsm-pro-funny (2).jpg (50 KB)



Mbsm-pro-funny (1).jpg (36 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

Mbsm-pro-funny (1).jpg (36 KB)



Mbsm-pro-funny (3).jpg (64 KB)



Mbsm-pro-funny (3).jpg (41 KB)



Mbsm-pro-funny (4).jpg (56 KB)



Mbsm-pro-funny (4).jpg (56 KB)



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# **www.mbsm.pro , S2000 Silicon NPN Transistor , Bipolar transistors data tables**

written by Lilianne | 25 November 2017



the S2000 is a silicon NPN transistor, Ucb = 1500V, Ic = 8A,  
applications: TV horizontal deflection, color TV, switch mode power supply

Toshiba Tokyo Shibaura Electric Co. Ltd. Japan

Ucb: 1500V

Ic: 8A

$\beta$  (Ic/Ib): -

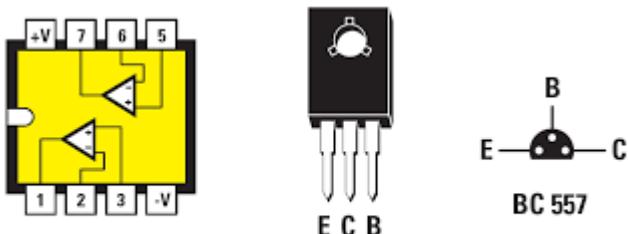
N: 125W

F: -

Tmax: -

# Mbsm.pro , principe de fonctionnement d'un transistor

written by Lilianne | 25 November 2017  
images.png (4 KB)



PictureS Mbsm Dot Pro : [www.mbsm.pro](http://www.mbsm.pro)

images.png (10 KB)



Description du transistor

Le transistor est un composant d'où sortent 3 fils électriques. Ils sont dénommés B (base), C (collecteur), et E (émetteur).

Voici un dessin du transistor BC 547, agrandi quatre fois :



Un tel transistor coûte de l'ordre de 10 FB dans les magasins de composants électronique.

Voici la représentation classique du transistor dans les schémas électroniques :



Le principe de fonctionnement

- Si on branche une source de tension entre les bornes C et E, le transistor ne laisse pas passer de courant (fig. 1).
- Par contre, entre B et E il y a un court-circuit. Si on veut faire passer un courant précis entre B et E, il faut utiliser une source de tension et une résistance (fig. 2).
- **Si** on envoie un courant de  $I_B$  ampères entre B et E, **alors** le transistor acceptera de laisser passer un courant de  $I_C = \beta \cdot I_B$  ampères entre C et E (fig. 3). Dans ce cas ci,  $\beta$  vaut de l'ordre de 100.



Les schémas électroniques correspondants aux dessins des figures 1, 2 et 3 sont représentés par les figures 4, 5 et 6 :



Note : Pour ceux qui voudraient essayer ces branchements : une seule pile de 9 Volts peut jouer le rôle des deux piles (fig. 7 et 8) :



Faites attention à la polarité : mettez bien le pôle positif et le pôle négatif de la pile au bon endroit. Le sens du courant est important pour un transistor.

Le BC 547 est un transistor un peu faible pour allumer une lampe. Vous aurez peut-être intérêt à utiliser un transistor plus puissant, comme par exemple le BD 649. En voici un

dessin, agrandi deux fois :



Au début, en faisant des erreurs de branchement ou en faisant dissiper une énergie trop importante au transistor, vous risquez fort d'en brûler quelques uns. C'est normal.

La raison pour laquelle on soustrait systématiquement 0,7 Volts de la tension  $U_{BE}$  est que les transistors bipolaires actuels contiennent une diode "parasite". La tension soustraite dépend du type de semiconducteur utilisé : 0,7 Volts pour le silicium, et 0,2 Volts pour le germanium.

