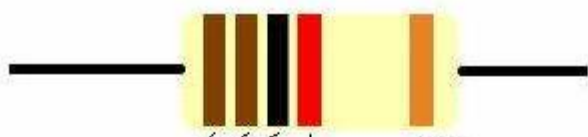


### 1) Direnc Okuma

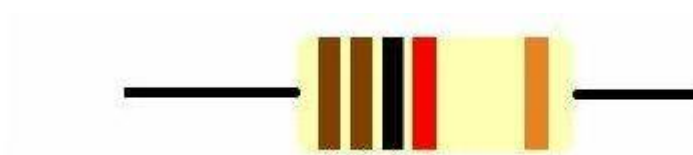


	Digit		Multiplier		Tolerance
Black	0			1	
Brown	1			10	1%
Red	2			100	2%
Orange	3			1000	
Yellow	4			10000	
Green	5			100000	
Blue	6			1000000	
Violet	7				
Grey	8		Gold	0.1	Gold 5%
White	9		Silver	0.01	Silver 10%

Dirençler 3 ya da 4 renkli olur, okunma şekli de şu şekilde;

**4 Renkli ;**

**Digit1 – Digit2 – Digit3 – Digit Carpan - Tolerans**



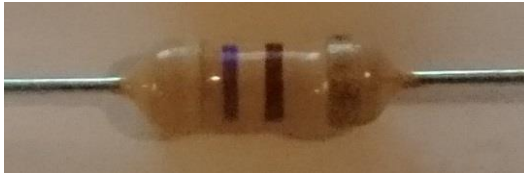
**3 Renkli ;**

**Digit1 – Digit2 – Digit Carpan – Tolerans**



### 2) Direncler

#### a. 470 Ohm



**Sari** – **Mor** – **Kahverengi** – Altin

4 – 7 – 1 Tolerans: %5

$47 \cdot 10 = 470$

#### b. 1K Ohm



**Kahverengi** – **Siyah** – **Kirmizi** – Altin

1 – 0 – 2 Tolerans: %5

$10 \cdot 100 = 1000 = 1K$

#### c. 2.2K Ohm



**Kirmizi** – **Kirmizi** – **Kirmizi** – Altin

2 – 2 – 2 Tolerans: %5

$22 \cdot 100 = 2200 = 2.2K$

#### d. 10K Ohm

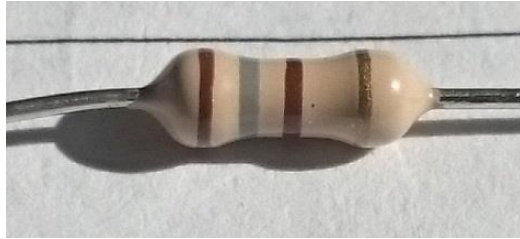


**Kahverengi** – **Siyah** – **Turuncu** – Altin

1 – 0 – 3 Tolerans: %5

$10 \cdot 1000 = 10000 = 10K$

e. 180 Ohm



**Kahverengi** – **Gri** – **Kirmizi** – Altın

1 – 8 – 1 Tolerans: %5

$$18 \cdot 10 = 180$$

f. 22K Ohm



**Kirmizi** – **Kirmizi** – **Turuncu** – Altın

2 – 2 – 3 Tolerans: %5

$$22 \cdot 1000 = 22,000 = 22K$$

g. 1M Ohm



**Kahverengi** – **Siyah** – **Yesil** – Altın

1 – 0 – 5 Tolerans: %5

$$10 \cdot 100,000 = 1,000,000 = 1M$$

### h. 100K Ohm



**Kahverengi** – **Siyah** – **Sari** – Altın

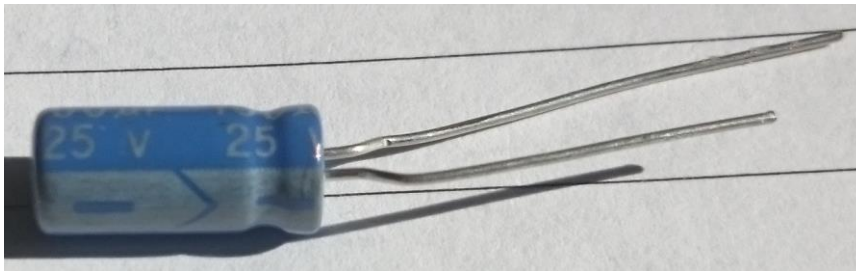
1 – 0 – 4 Tolerans: %5

$10 \times 10,000 = 100,000 = 100K$

### 3) Kapasitorler

#### a. Polarizasyon Sembolu

Asagida eksi sembolu ve ok isareti ile – kutup gosterilmektedir.



#### b. 1 uF 25 V (Polarize)



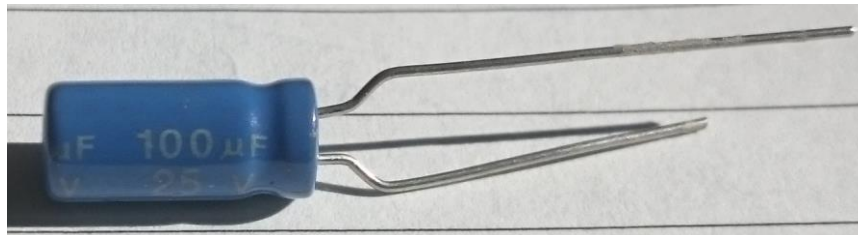
#### c. 10 uF 25 V (Polarize)



- d. 10  $\mu$ F 100 V (Polarize)



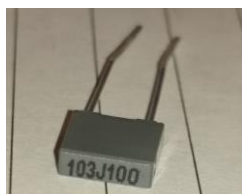
- e. 100  $\mu$ F 25 V (Polarize)



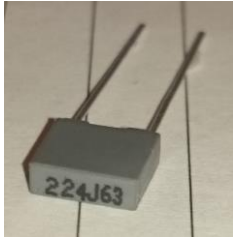
- f. 1000  $\mu$ F 35 V (Polarize)



- g. 100 nF 100 V  
103J100



- h. 220 nF 63 V  
224H63

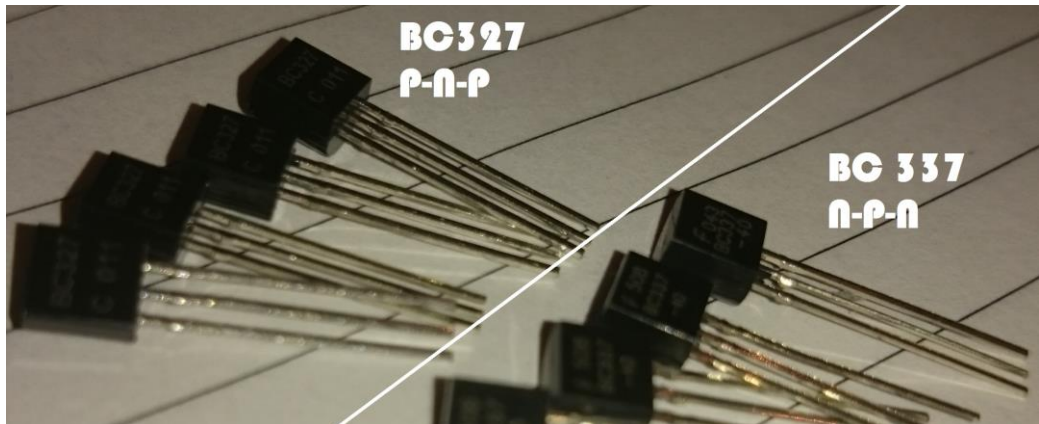


- i. 100 nF Seramik



#### 4) Transistorler

- a. BC337 NPN & BC327 PNP (Ya da BC556 PNP)



#### 5) Diyotlar

- a. 1N4007



- b. x



### 6) Logik Kapilar (Logic Gates)

#### a. AND

##### i. 74HC08

**M74HCT08B1**



#### b. OR

##### i. 74HC32

**SN74HC32N**



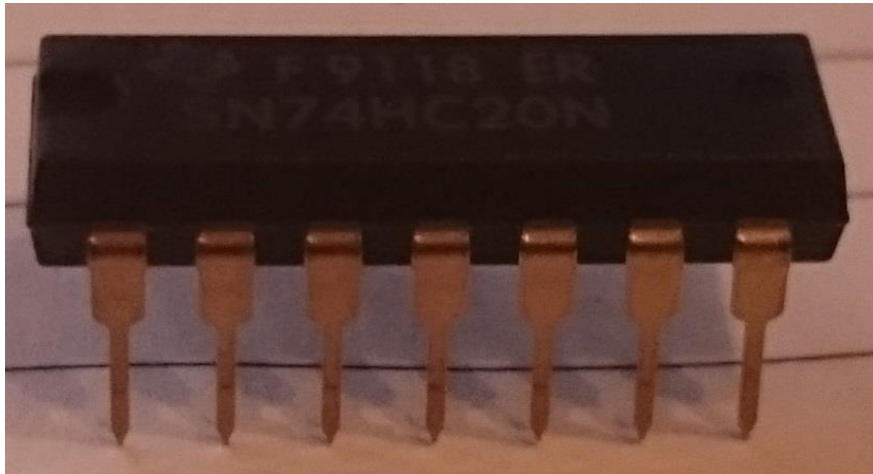
## ITU-CON : Circuit Elements

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c. **NAND**

i. 74HC20

**SN74HC20N**



d. **NOR**

i. 74HC02

**SN74F02N**



e. **NOT**

i. 74HC04

**SN74HC04N**





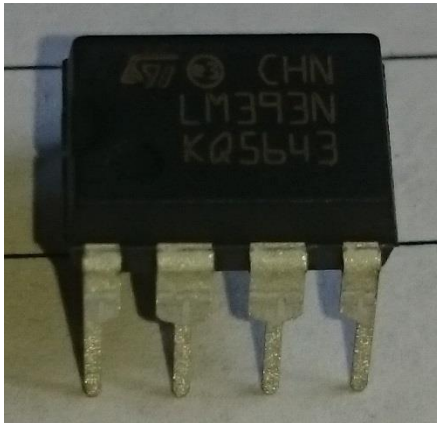
### 7) Tımlayıcı Devreler

#### a. Tımlayıcı

LM555



#### b. LM393



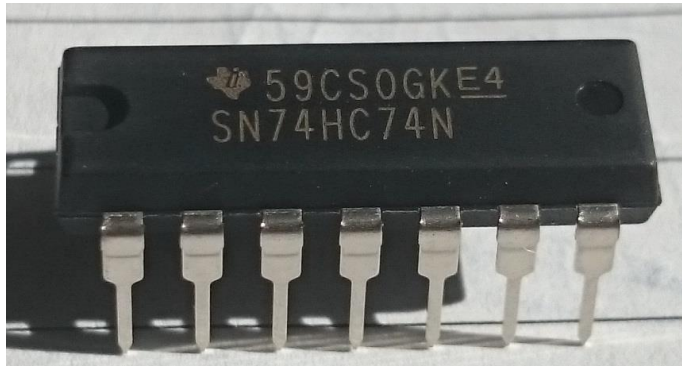
#### c. LM358



## ITU-CON : Circuit Elements

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d. 74HC74 Dual D Type Flip-Flop



e. 4017 COUNTER  
HCF4017BE



8) Guc Kaynaklari

a. 5V 1A



**b. 9V 2A**



**c. X**

**9) Diger**

**a. LED'ler**



**b. Zil Teli (Tek Damarli)**



**c. Buton (2 ayakli)**



**d. Buton (4 ayakli)**





## ITU-CON : Circuit Elements

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**e. Breadboard**



**f. Breadboard Mini**



**g. Kutu**



**h. Ara Kablo (Power -> Breadboard)**



## ITU-CON : Circuit Elements

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- i. x
- j. x