



National  
Qualifications  
2024

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**X860/75/12**

**Practical Electronics  
Data sheet**

MONDAY, 29 APRIL

1:00 PM – 2:00 PM

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\* X 8 6 0 7 5 1 2 \*

## Relationships required for National 5 Practical Electronics

$$V = IR$$

$$R_T = R_1 + R_2 + \dots$$

$$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \dots$$

$$P = IV$$

$$P = I^2R$$

$$P = \frac{V^2}{R}$$

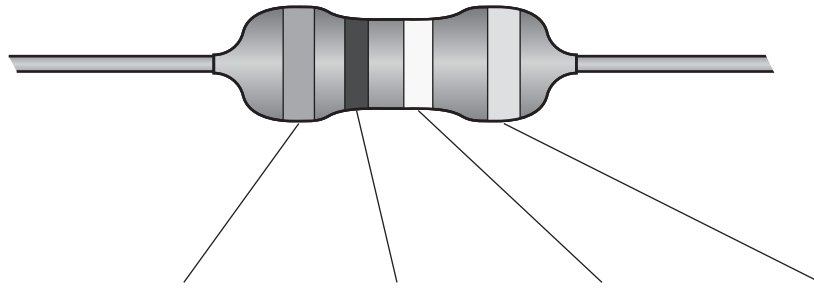
$$\frac{V_1}{V_2} = \frac{R_1}{R_2}$$

$$V_2 = \frac{R_2}{R_1 + R_2} \times V_S$$

$$f = \frac{1}{T}$$

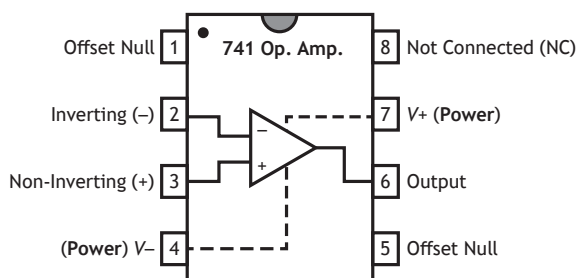
## Resistor colour codes

4-band resistor

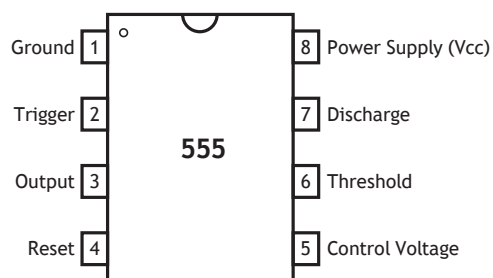


Colour	1st band value	2nd band value	Multiplier	Tolerances
Black	0	0	× 1	
Brown	1	1	× 10	±1%
Red	2	2	× 100	±2%
Orange	3	3	× 1000	±3%
Yellow	4	4	× 10000	±4%
Green	5	5	× 100000	±0.5%
Blue	6	6	× 1000000	±0.25%
Violet	7	7	× 10000000	±0.10%
Grey	8	8	× 100000000	±0.05%
White	9	9	× 1000000000	
Gold			× 0.1	±5%
Silver			× 0.01	±10%
No band				±20%

## IC Pinout diagrams

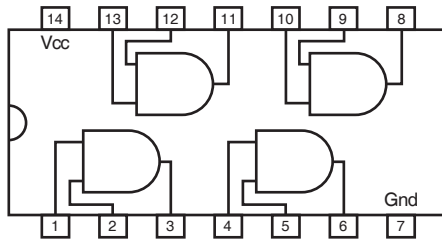


741 Op-amp

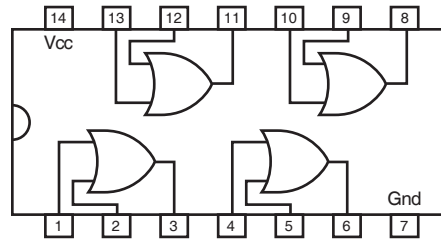


555 timer

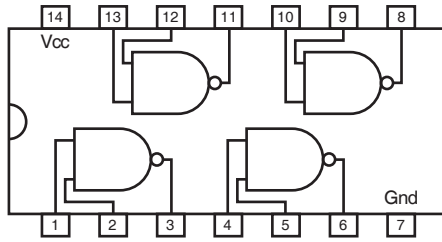
[Turn over



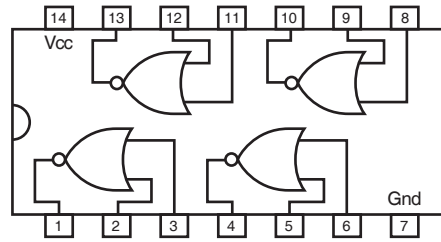
7408 Quad 2 input  
AND Gates



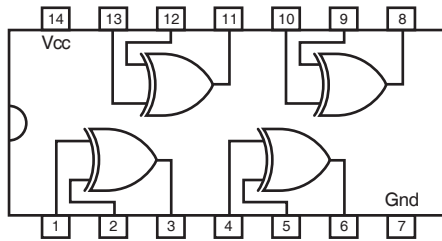
7432 Quad 2 input  
OR Gates



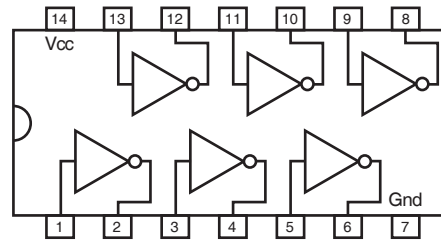
7400 Quad 2 input  
NAND Gates



7402 Quad 2 input  
NOR Gates



7486 Quad 2 input  
XOR Gates



7404 Hex NOT Gates  
(Inverters)

[END OF DATA SHEET]