



National
Qualifications
2024

X860/75/12

**Practical Electronics
Data sheet**

MONDAY, 29 APRIL

1:00 PM – 2:00 PM



* X 8 6 0 7 5 1 2 *

Relationships required for National 5 Practical Electronics

$$V = IR$$

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

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

$$P = IV$$

$$P = I^2 R$$

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

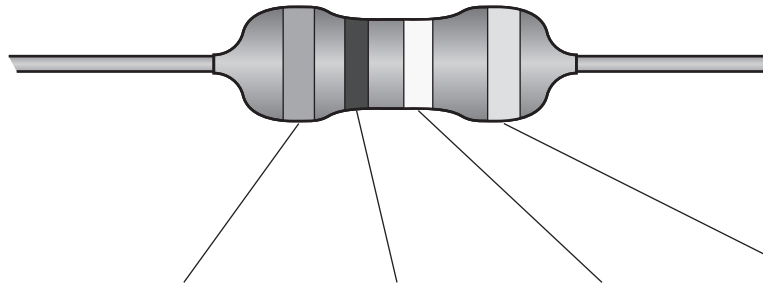
$$\frac{V_1}{V_2} = \frac{R_1}{R_2}$$

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

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

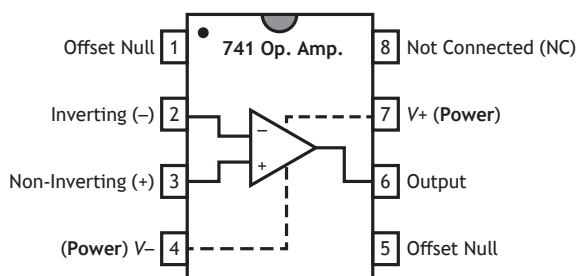
Resistor colour codes

4-band resistor

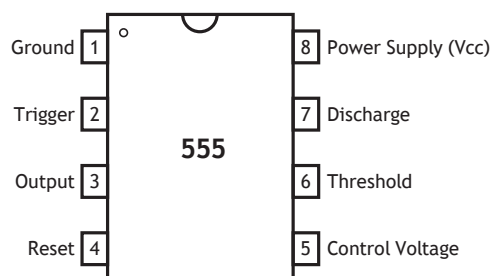


Colour	1st band value	2nd band value	Multiplier	Tolerances
Black	0	0	$\times 1$	
Brown	1	1	$\times 10$	$\pm 1\%$
Red	2	2	$\times 100$	$\pm 2\%$
Orange	3	3	$\times 1000$	$\pm 3\%$
Yellow	4	4	$\times 10000$	$\pm 4\%$
Green	5	5	$\times 100000$	$\pm 0.5\%$
Blue	6	6	$\times 1000000$	$\pm 0.25\%$
Violet	7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

IC Pinout diagrams

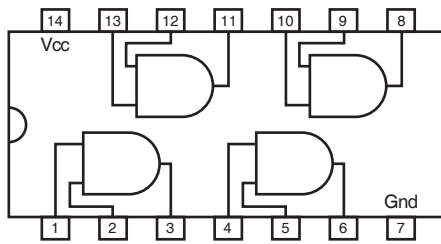


741 Op-amp

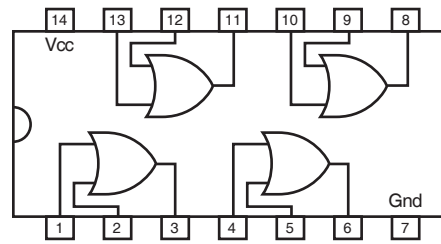


555 timer

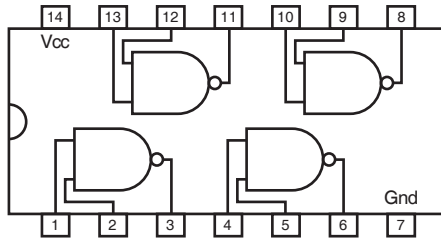
[Turn over



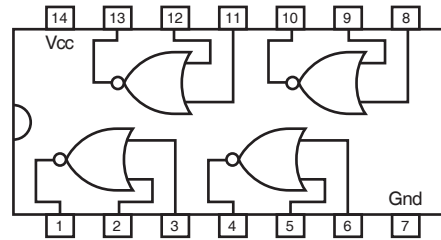
7408 Quad 2 input
AND Gates



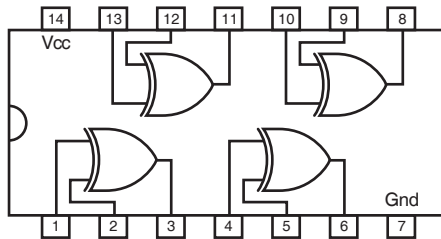
7432 Quad 2 input
OR Gates



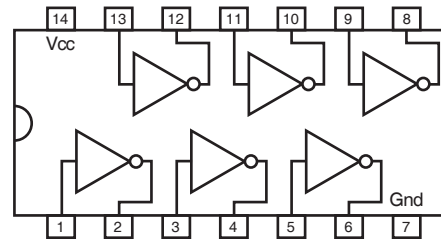
7400 Quad 2 input
NAND Gates



7402 Quad 2 input
NOR Gates



7486 Quad 2 input
XOR Gates



7404 Hex NOT Gates
(Inverters)

[END OF DATA SHEET]