E2

UNIT E2 · REVISION SUMMARY

# E2 on one page

UNIT PROGRESS

## QUANTITIES

| | |
|---|---|
| V | volt V: push |
| I | amp A: flow |
| R | ohm Ω: opposition |
| k M m μ | $\times 10^3$, $\times 10^6$, $\times 10^{-3}$, $\times 10^{-6}$ |

## DATA BOOKLET

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$V = IR$
Ohm's law

$R_t = R_1 + R_2$
series

$1/R_t = 1/R_1 + 1/R_2$
parallel

$V_t = V_1 + V_2$
Kirchhoff 2

$I_t = I_1 + I_2$
Kirchhoff 1

## SERIES

| | |
|---|---|
| I | same everywhere |
| R | adds |
| V | shared (Kirchhoff 2) |

## PARALLEL

| | |
|---|---|
| V | same on each branch |
| I | splits (Kirchhoff 1) |
| R | less than smallest |

## COMBINED

| | |
|---|---|
| 1 | Reduce parallel part |
| 2 | Add series parts |
| 3 | Find $I_t$, work back |

## LED RESISTOR

| | |
|---|---|
| V_R | $V_s - V_{LED}$ |
| R | $V_R \div I$ |
| E12 | Round up |

## SHORT CIRCUIT · EXAMINER TIPS

- Units must suit the values: V ÷ kΩ = mA.
- Finish parallel: $R_t$ = 1 ÷ sum.
- Effect of R change: $R_t$, I, then each V.
- Ammeter series; voltmeter parallel.