202: Principles of electrical science  
**Worksheet 17: Electronic components**

**Answer guide**

Using your notes answer the following questions.

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| 1. | A resistor with four-band identification has green‑blue‑orange‑silver bands. What is the value of this resistor? |
|  | 56kΩ with 10% tolerance |

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| 2. | What is a thermistor? |
|  | A thermistor is a type of resistor whose resistance varies significantly with temperature. |

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| 3. | What is the unit used for capacitors? |
|  | Farad |

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| 4. | In simple terms, what does a diode do? |
|  | It allows an electric current to pass in one direction (called the diode's forward direction), while blocking current in the opposite direction (the reverse direction). |

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| 5. | Draw the symbol for a diac. |
|  | Description: 10 Diac symbol.png |

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| 6. | In simple terms, what does a thyristor do? |
|  | A thyristor is a solid-state semiconductor device which conducts when its gate receives a current trigger and continue to conduct while it is forward biased (that is, while the voltage across the device is not reversed). |

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| 7. | Draw the symbol for a triac. |
|  | Description: 13 Triac symbol.png |

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| 8. | Draw a half wave rectifier circuit including the input and output waveforms. |
|  | Description: 14 Half wave rectification.png |

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| 9. | Draw the symbols for an n‑p‑n and p‑n‑p transistors. |
|  | Description: 18 Transistor symbol.png |