

LM35

<https://www.ti.com/lit/ds/symlink/lm35.pdf?ts=1740256813769>

MCQ on LM35 Datasheet

1. What is the output voltage of the LM35 at 0 °C?

- A) 0 mV
 - B) 100 mV
 - C) 250 mV
 - D) 500 mV
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2. The LM35 has a scale factor of:

- A) 5 mV/°C
 - B) 10 mV/°C
 - C) 20 mV/°C
 - D) 1 mV/°C
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3. What is the recommended supply voltage range for the LM35?

- A) 1.8 V to 5.5 V
 - B) 2.7 V to 6 V
 - C) 4 V to 30 V
 - D) 10 V to 36 V
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4. Which temperature range is the full-range version of the LM35 rated for (for the LM35/LM35A)?

- A) 0 °C to 100 °C
 - B) -40 °C to 110 °C
 - C) -55 °C to 150 °C
 - D) -20 °C to 80 °C
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5. What is the typical quiescent current drawn by LM35 at 25 °C and +5 V supply?

- A) ~5 μA
 - B) ~56 μA
 - C) ~200 μA
 - D) ~1 mA
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6. For heavy capacitive loads on the output of LM35, which design recommendation is given in the datasheet?

- A) Use a large series resistor at the input
 - B) Use an R-C damper (series resistor + capacitor) at the output
 - C) Add additional power supply decoupling only
 - D) No special recommendation
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7. The transfer function of the LM35 is given by:

- A) $V_{\text{OUT}} = 5 \text{ mV}/^{\circ}\text{C} \times T$
 - B) $V_{\text{OUT}} = 10 \text{ mV}/^{\circ}\text{C} \times T + 500 \text{ mV}$
 - C) $V_{\text{OUT}} = 10 \text{ mV}/^{\circ}\text{C} \times T$
 - D) $V_{\text{OUT}} = (T^{\circ}\text{C}) / (10 \text{ mV})$
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8. What is the guaranteed maximum non-linearity (typical) for the LM35 across full range (for the full-range device)?

- A) $\pm 1/4^{\circ}\text{C}$
 - B) $\pm 1/2^{\circ}\text{C}$
 - C) $\pm 0.3^{\circ}\text{C}$
 - D) $\pm 1.5^{\circ}\text{C}$
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9. The LM35 can operate with only a **single power supply** (i.e., no negative supply) — true or false?

- A) True
 - B) False
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10. Which packaging options are mentioned in the datasheet for the LM35?

- A) TO-92, SOIC, TO-220, TO-CAN
 - B) SOT-23, QFN, BGA
 - C) Only TO-92
 - D) Only surface-mount packages
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Questions on LM35 Datasheet

1. Explain how the LM35 converts temperature into a voltage output.

Answer:

2. Which advantages does the LM35 have over thermistors or thermocouples?

Answer:

3. Describe the operating voltage range and how it affects LM35 performance.

Answer:

4. How can the LM35 be used to measure negative temperatures?

Answer:

5. What is the effect of load capacitance on LM35 output, and how can it be compensated?

Answer:

6. Discuss the typical accuracy and non-linearity of the LM35.

Answer:

7. Which precautions should be taken to minimize self-heating effects?

Answer:

8. How is the LM35 typically interfaced with an ADC (Analog-to-Digital Converter)?

Answer:

9. Explain the role of calibration in using LM35 for precise measurements.

Answer:

10. In what types of applications is the LM35 most commonly used?

Answer:
