

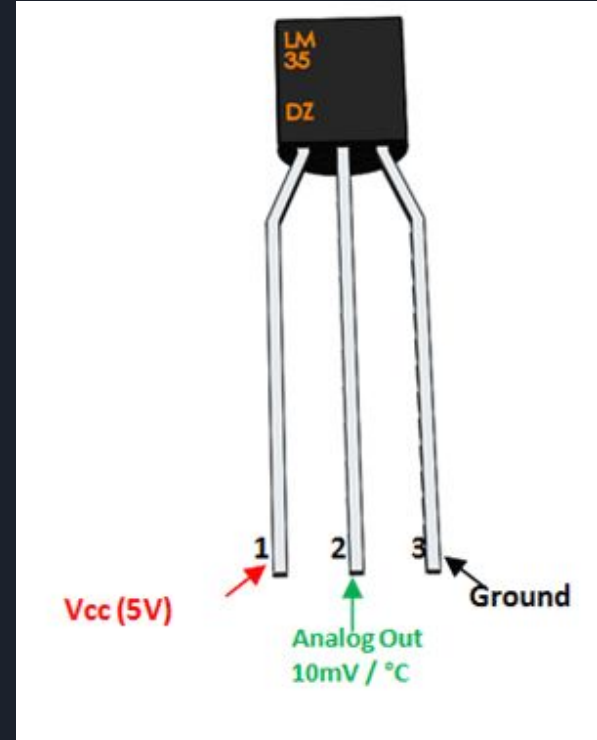


# ELABORATO ESAME

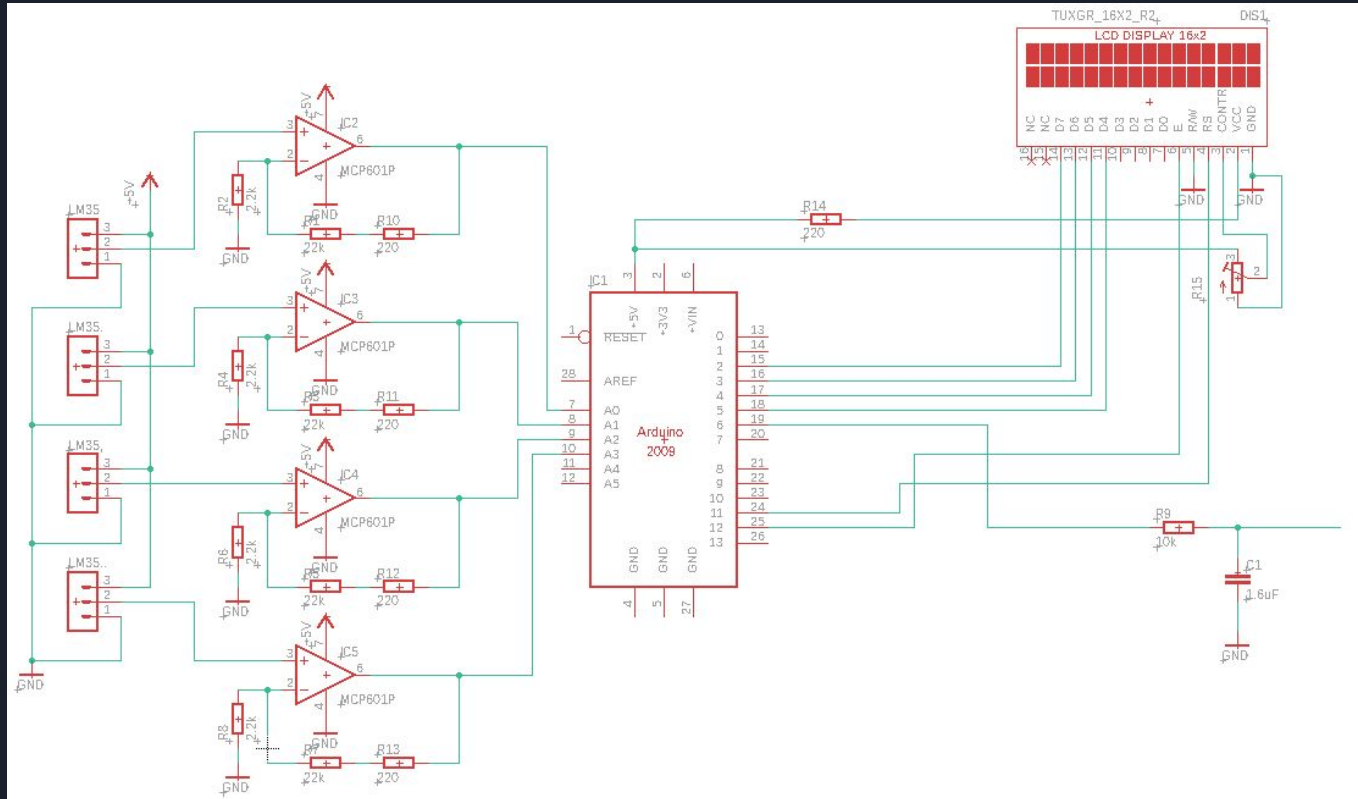
Diego Rossi 5ECN

# SENSORE DI TEMPERATURA LM35

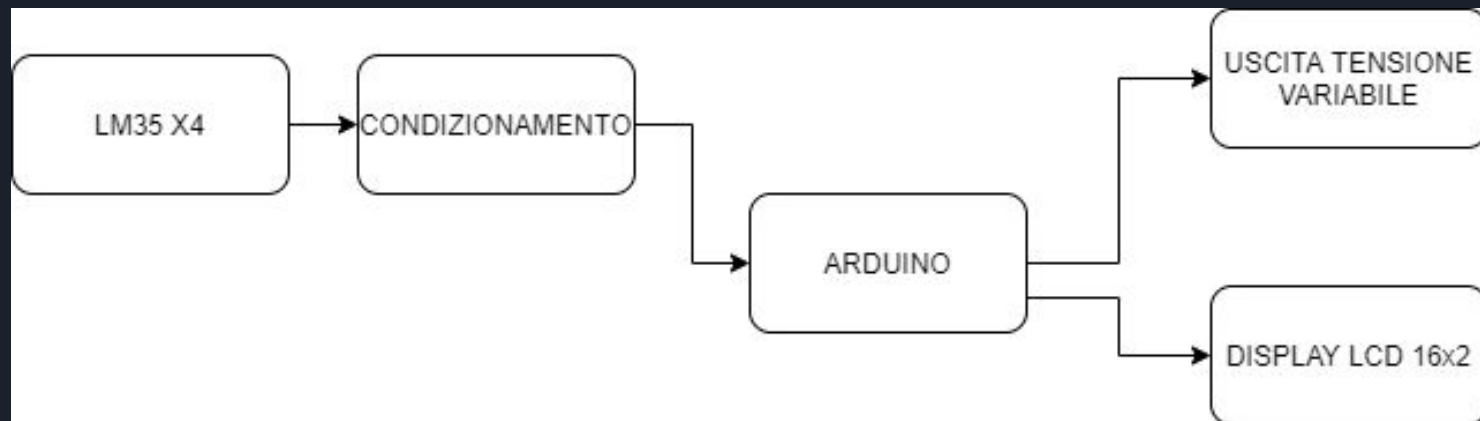
IL SENSORE LM35 E' UN SENSORE DI TEMPERATURA DI PRECISIONE, CON USCITA LINEARE, CHE PRODUCE 10 mV PER GRADO CENTIGRADO



# SCHEMA ELETTRICO



# SCHEMA A BLOCCHI

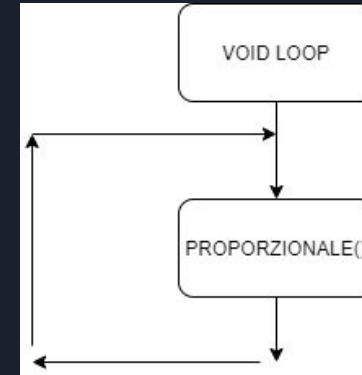
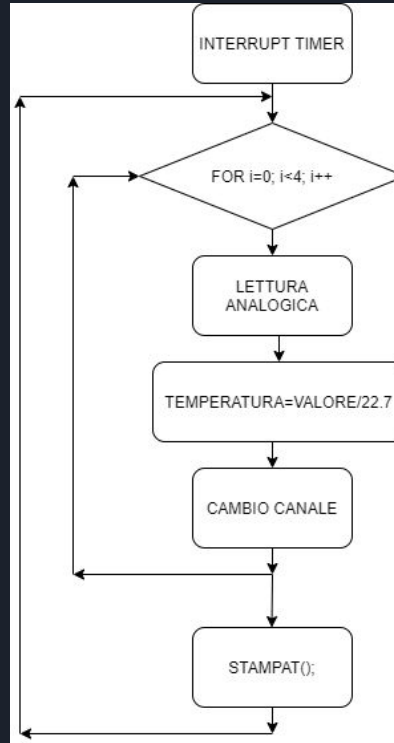
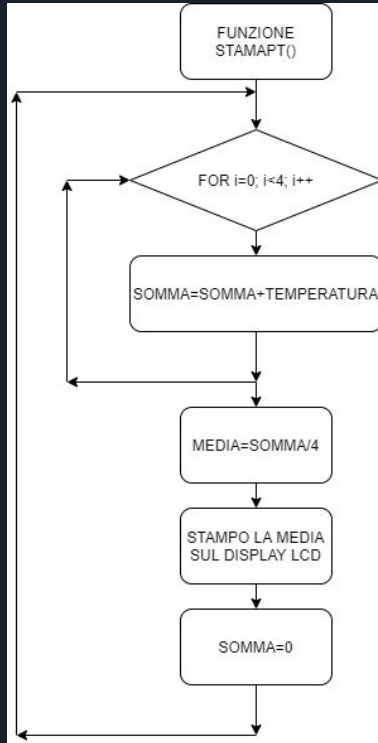




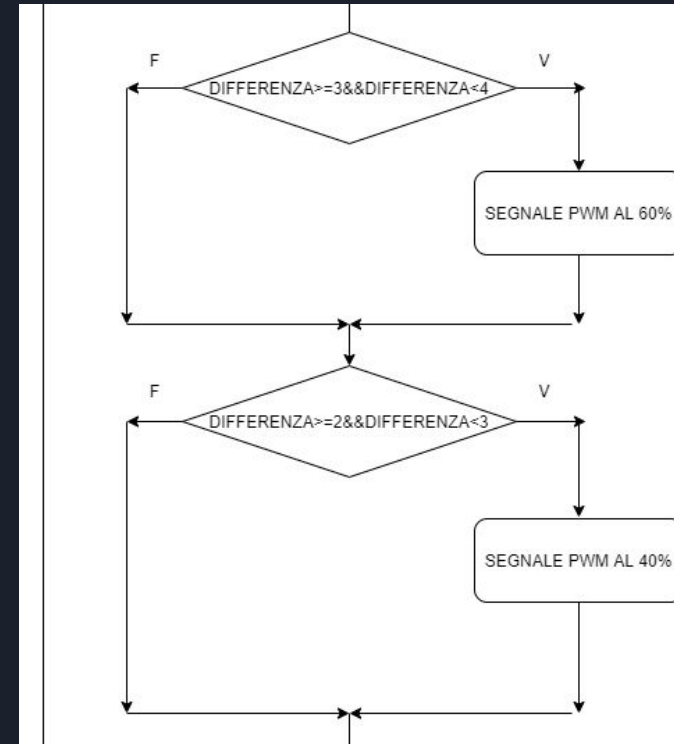
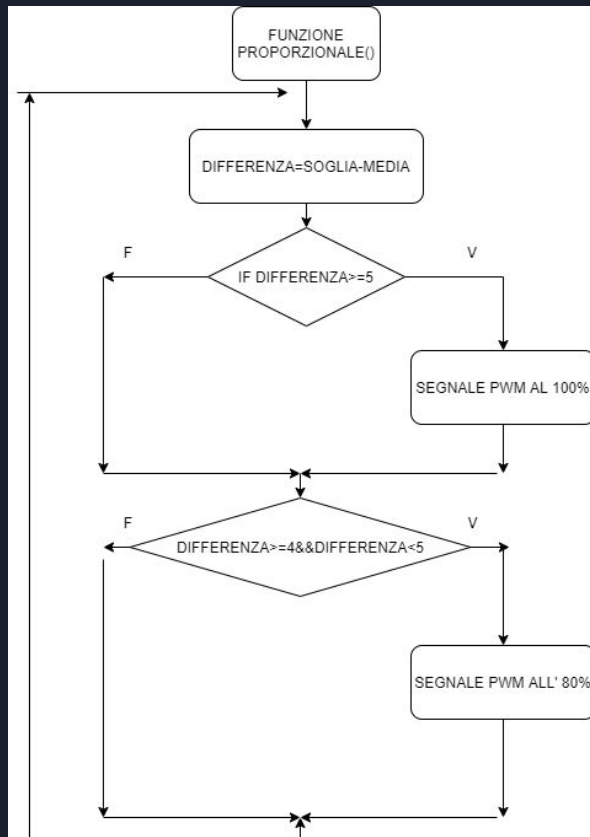
# COMPONENTI

- **SENSORI DI TEMPERATURA LM35 X4** → Utilizzati per rilevare la temperatura
- **RESISTENZE (220, 22K, 2.2K)** → Utilizzate per il guadagno dell' amplificatore ( $R=2.2K$ ;  $R_f=22K+220$ )
- **RESISTENZA (10K)** → Parte del filtro passa-basso
- **AMPLIFICATORE OPERAZIONALE MCP601** → Utilizzato per amplificare il segnale
- **ARDUINO UNO** → Microcontrollore
- **CONDENSATORE (1.6uF)** → Parte del filtro passa-basso

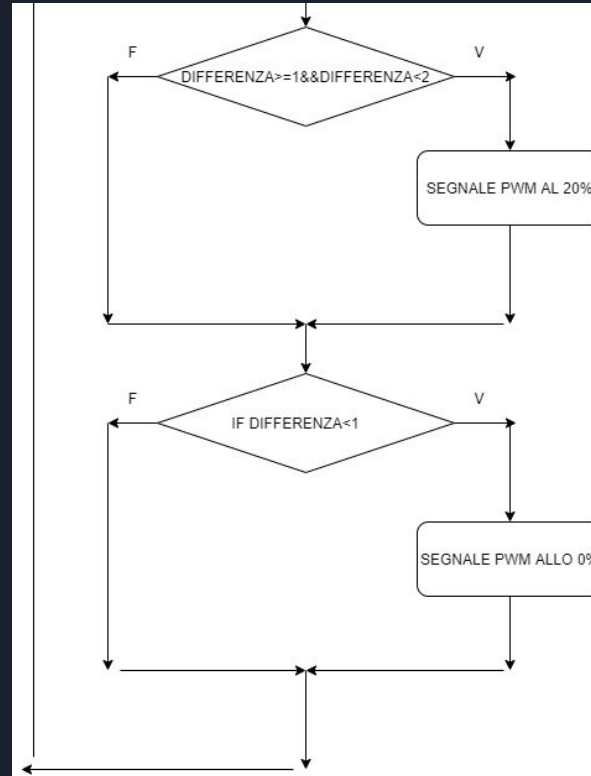
# FLOWCHART



# FLOWCHART

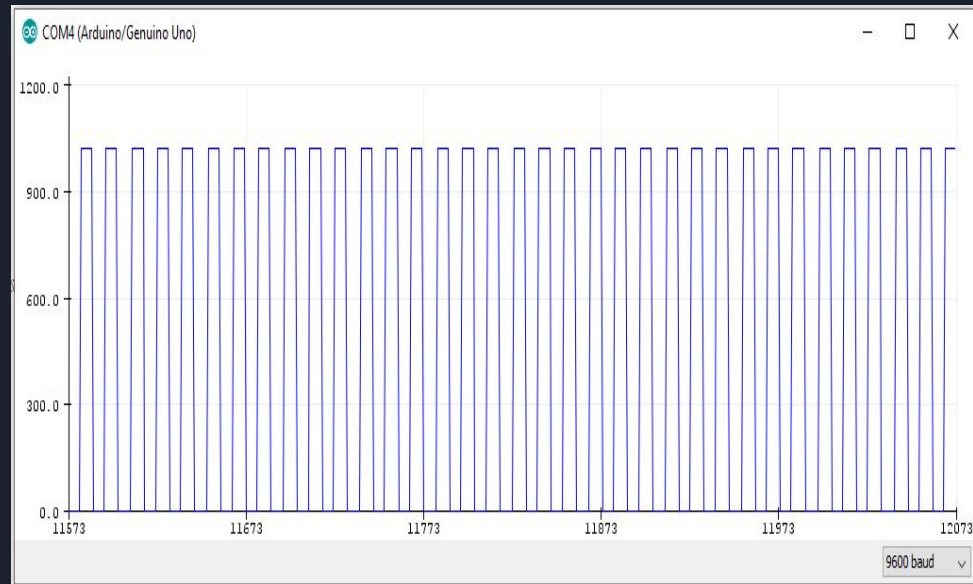
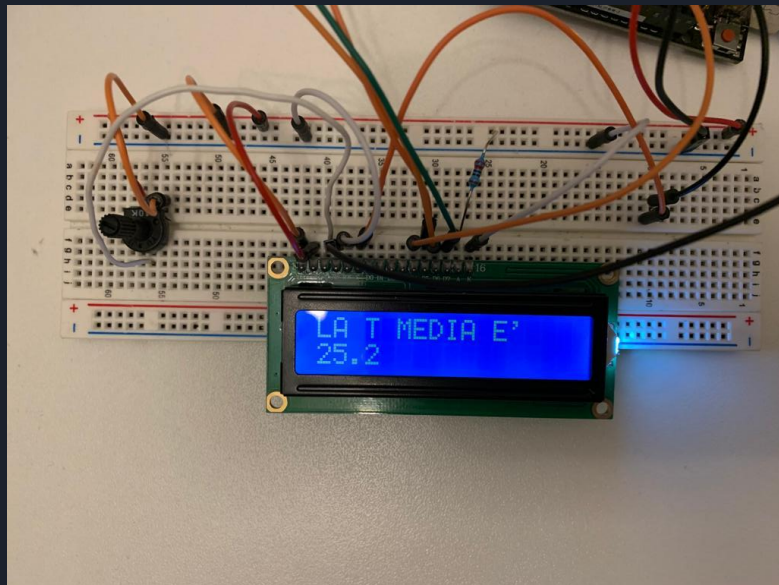


# FLOWCHART

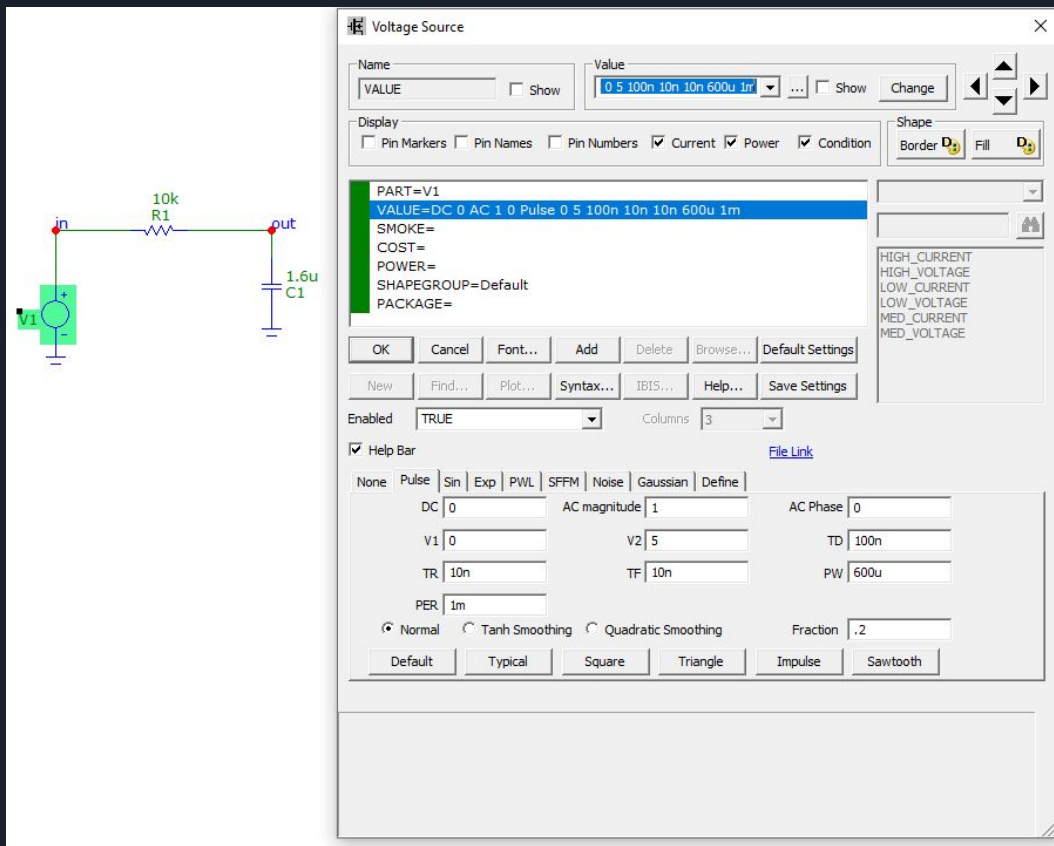




# FOTO



# FILTRAGGIO PWM



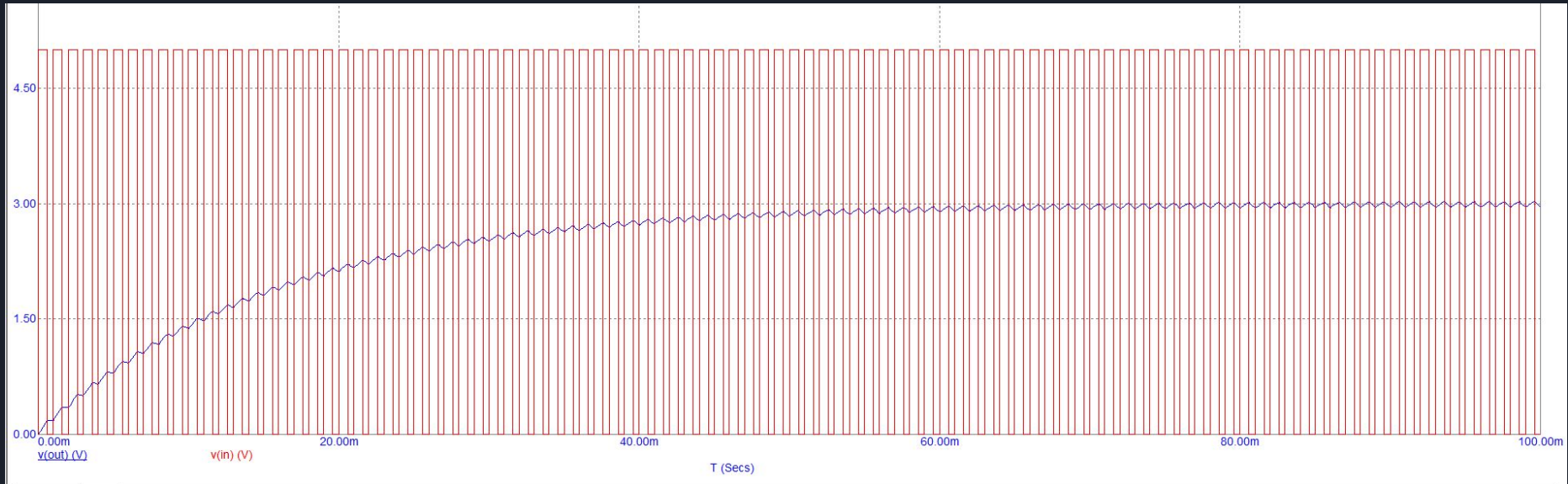
The image displays a circuit diagram and the 'Voltage Source' dialog box in a simulation software.

**Circuit Diagram:** A voltage source **V1** is connected in series with a resistor **R1** (10k) and a capacitor **C1** (1.6u). The input is labeled 'in' and the output is labeled 'out'.

**Voltage Source Dialog Box:**

- Name:** VALUE
- Value:** 0 5 100n 10n 10n 600u 1m
- Display:** ☐ Pin Markers ☐ Pin Names ☐ Pin Numbers ☒ Current ☒ Power ☒ Condition
- Shape:** Border ☒ Fill ☒
- Properties:**
  - PART=V1
  - VALUE=DC 0 AC 1 0 Pulse 0 5 100n 10n 10n 600u 1m
  - SMOKE=
  - COST=
  - POWER=
  - SHAPEGROUP=Default
  - PACKAGE=
- Buttons:** OK, Cancel, Font..., Add, Delete, Browse..., Default Settings, New, Find..., Plot..., Syntax..., IBIS..., Help..., Save Settings
- Enabled:** TRUE
- Columns:** 3
- Help Bar:** ☒ [File Link](#)
- Waveform Selection:** None | Pulse | Sin | Exp | PWL | SFFM | Noise | Gaussian | Define
- Parameters:**
  - DC: 0
  - AC magnitude: 1
  - AC Phase: 0
  - V1: 0
  - V2: 5
  - TD: 100n
  - TR: 10n
  - TF: 10n
  - PW: 600u
  - PER: 1m
  - Fraction: .2
- Smoothing:** ☒ Normal ☐ Tanh Smoothing ☐ Quadratic Smoothing
- Waveform Style:** Default | Typical | Square | Triangle | Impulse | Sawtooth

# FILTRAGGIO PWM



FINE

