LAB Measurements:

ROOM TEMPERATURE — BUZZER OFF

Supply Voltage

VCC = 5.02 V

Reference Voltage — LM393 Pin 3

VREF = 2.39 V

Thermistor Voltage — LM393 Pin 2

VTH = 2.50 V

LM393 Output — Pin 1

VOUT = 0.09V V

2N2222 Base

VB = 0.08V V

2N2222 Collector

VC = 5.03V V

WARM THE THERMISTOR

VTH When Buzzer Turns On

VTH = 2.28 V

BUZZER ON

LM393 Output — Pin 1

VOUT = 1.46 V

2N2222 Base

VB = 0.73 V

2N2222 Collector

VC = 0.03 V

BASE CURRENT

Voltage Across R4 - 1 kΩ Base Resistor

VR4 = VOUT − VB

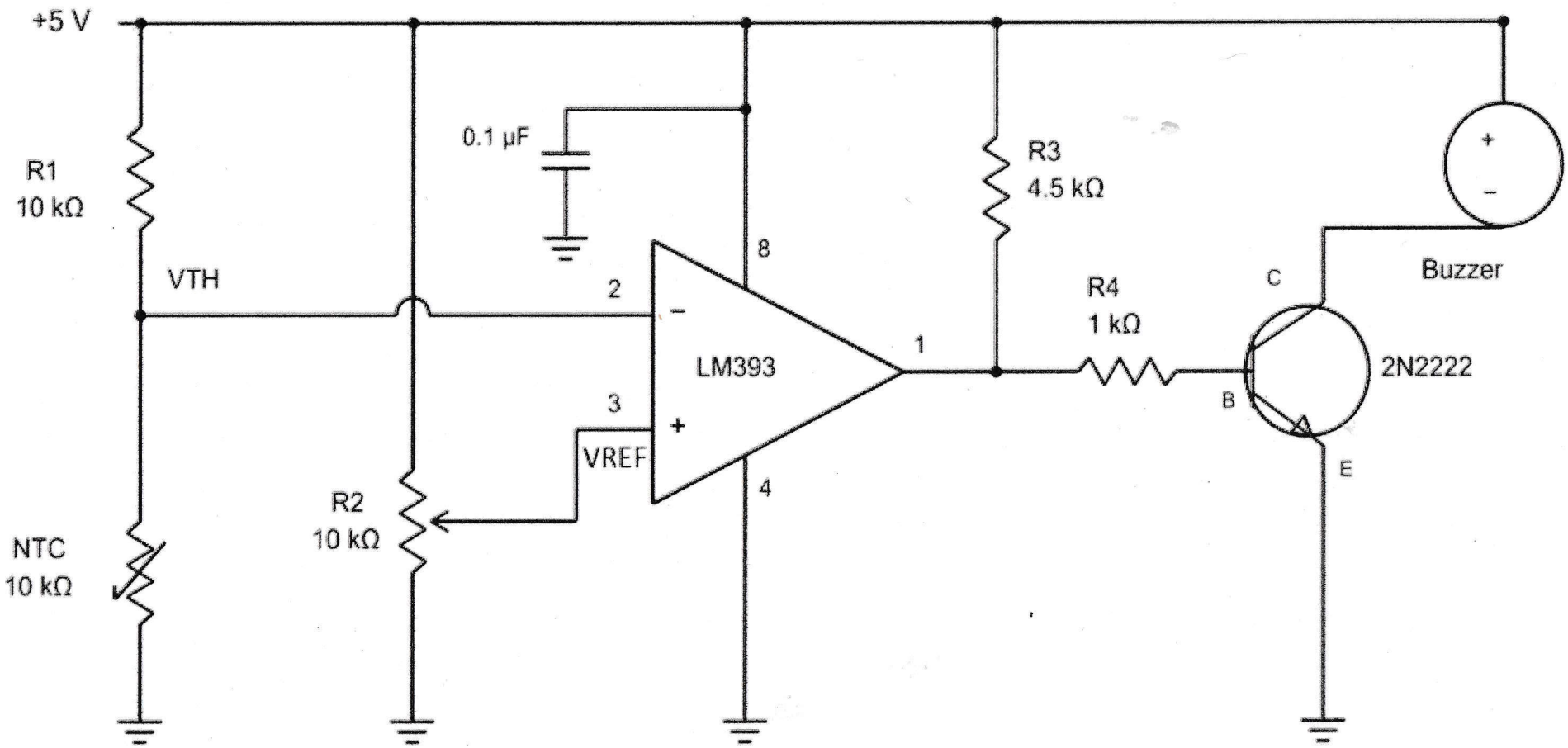
VR4 = 0.74 V

Base Current

IB = VR4 ÷ 1 kΩ

IB = 0.72 mA

Calculated = 0.75mA



All ground symbols are connected.