

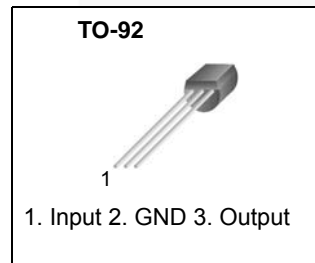
KA75330 Voltage Detector

Features

- Detects Against Error Operations at Power On/Off
- Resets Function for Low-Voltage Microprocessor
- Checks Low-Battery

Description

The KA75330 prevents the system error where the supply voltage is below the normal level at the time when the power is on and instantaneous power off in systems.



Ordering Information

| Part Number | Operating Temperature Range | Top Mark | Package | Packing Method |
|-------------|-----------------------------|----------|---------|----------------|
| KA75330ZTA | -25 ~ +85°C | KA75330 | TO-92 | Ammo |

Block Diagram

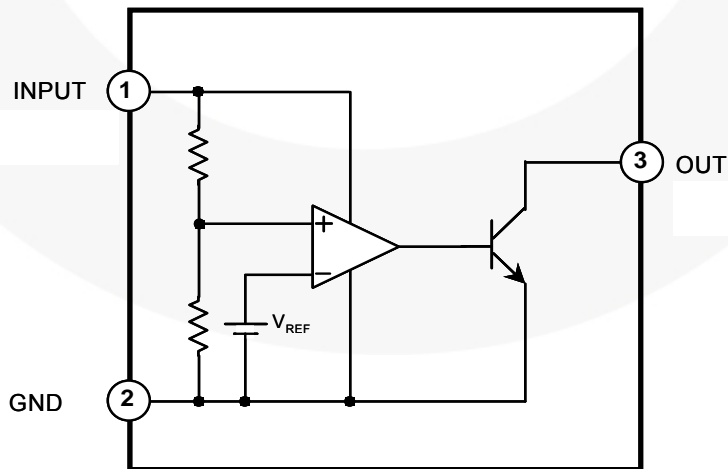


Figure 1. Block Diagram

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Value | Unit |
|---------------|---|---------------------------|---------------------|
| V_{CC} | Supply Voltage | 0.3 ~ +15.0 | V |
| V_{DET} | Detecting Voltage | 3.3 | V |
| V_{HYS} | Hysteresis Voltage | 50 | mV |
| T_{OPR} | Operating Temperature | -25 ~ +85 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | -50 ~ +150 | $^\circ\text{C}$ |
| P_D | Power Dissipation (TO-92) | 200 | mW |
| DV_{DET}/DT | Detecting Voltage Temperature Coefficient | $R_L = 200 \Omega, +0.01$ | $\%/^\circ\text{C}$ |

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|---------------|---|--|------|------------|------|---------------------|
| V_{DET} | Detecting Voltage | $R_L = 200 \Omega, V_{OL} \leq 0.4 \text{ V}$ | 3.15 | 3.30 | 3.45 | V |
| V_{OL} | Low Output Voltage | $R_L = 200 \Omega$ | | | 0.4 | V |
| I_{LKG} | Output Leakage Current | $V_{CC} = 15 \text{ V}$ | | | 0.1 | μA |
| V_{HYS} | Hysteresis Voltage | $R_L = 200 \Omega$ | 30 | 50 | 100 | mV |
| DV_{DET}/DT | Detecting Voltage Temperature Coefficient | $R_L = 200 \Omega$ | | ± 0.01 | | $\%/^\circ\text{C}$ |
| I_{CCL} | Circuit Current (At On Time) | $V_{CC} = V_{DET(MIN)} - 0.05 \text{ V}$ | | 300 | 500 | μA |
| I_{CCH} | Circuit Current (At Off Time) | $V_{CC} = 5.25 \text{ V}$ | | 30 | 50 | μA |
| $V_{TH(OPR)}$ | Threshold Operating Voltage | $R_L = 200 \Omega, V_{OL} \leq 0.4 \text{ V}$ | | 0.8 | 1.0 | V |
| t_{OL} | "L" \pm Transmission Delay | $R_L = 1.0 \text{ k}\Omega, C_L = 100 \text{ pF}$ | 0.6 | 10 | | μs |
| t_{OH} | "H" \pm Transmission Delay | $R_L = 1.0 \text{ k}\Omega, C_L = 100 \text{ pF}$ | | 15 | 20 | μs |
| I_{OLI} | Output Current (At On Time) | $V_{CC} = V_{DET(MIN)} - 0.05 \text{ V}, T_A = 25^\circ\text{C}$ | 10 | 20 | 30 | mA |
| I_{OLII} | Output Current (At On Time) | $V_{CC} = V_{DET(MIN)} - 0.05 \text{ V}, T_A = -25 \sim +85^\circ\text{C}$ | 8 | 16 | 30 | mA |

Test Circuit 1.

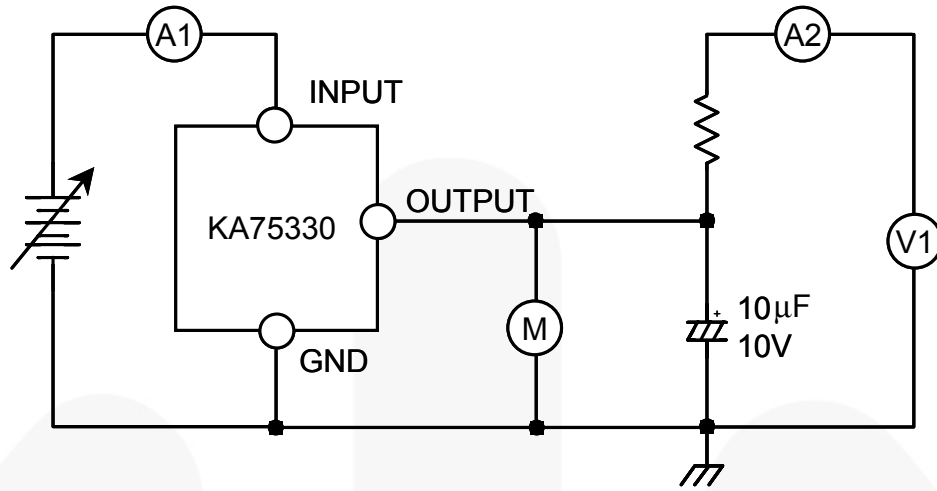


Figure 2. Test Circuit

Test Circuit 2.

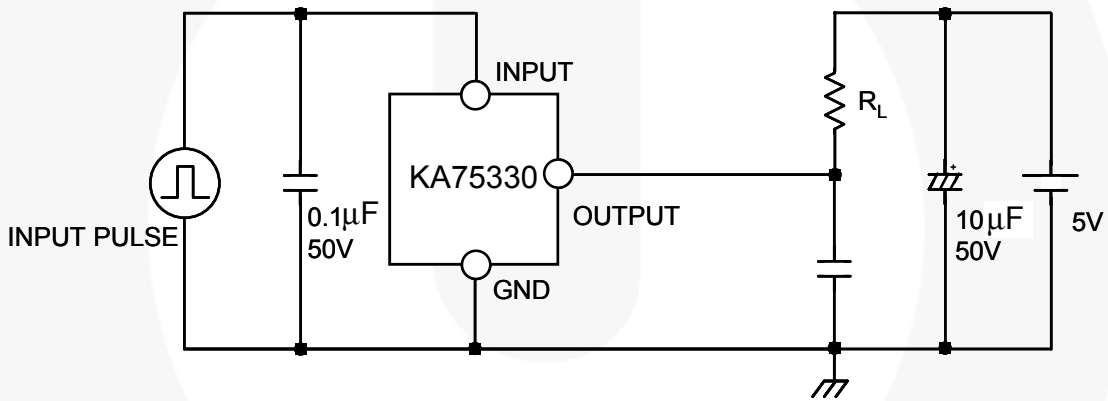


Figure 3. Test Circuit

Test Circuit 3.

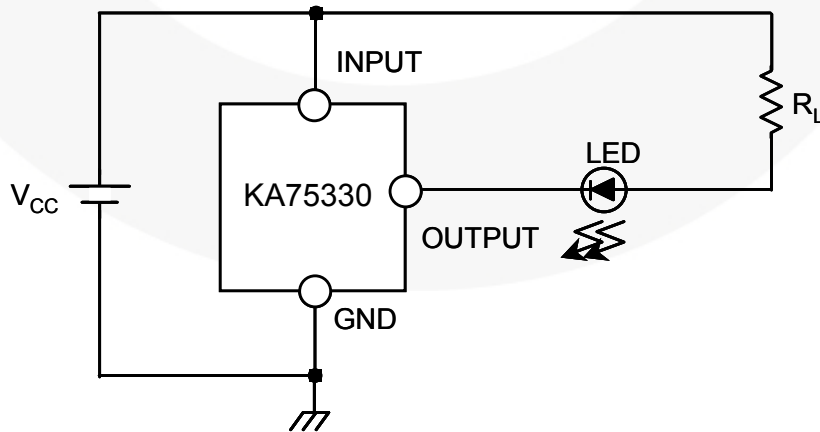


Figure 4. Test Circuit

Application Circuit

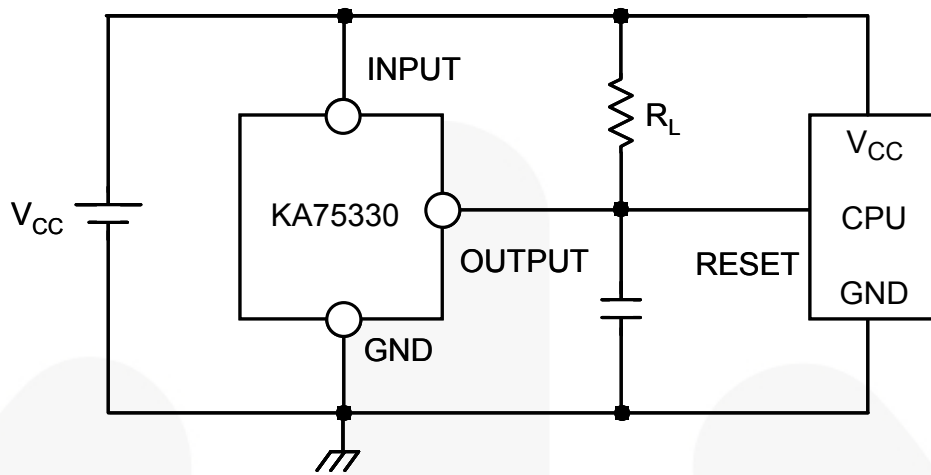
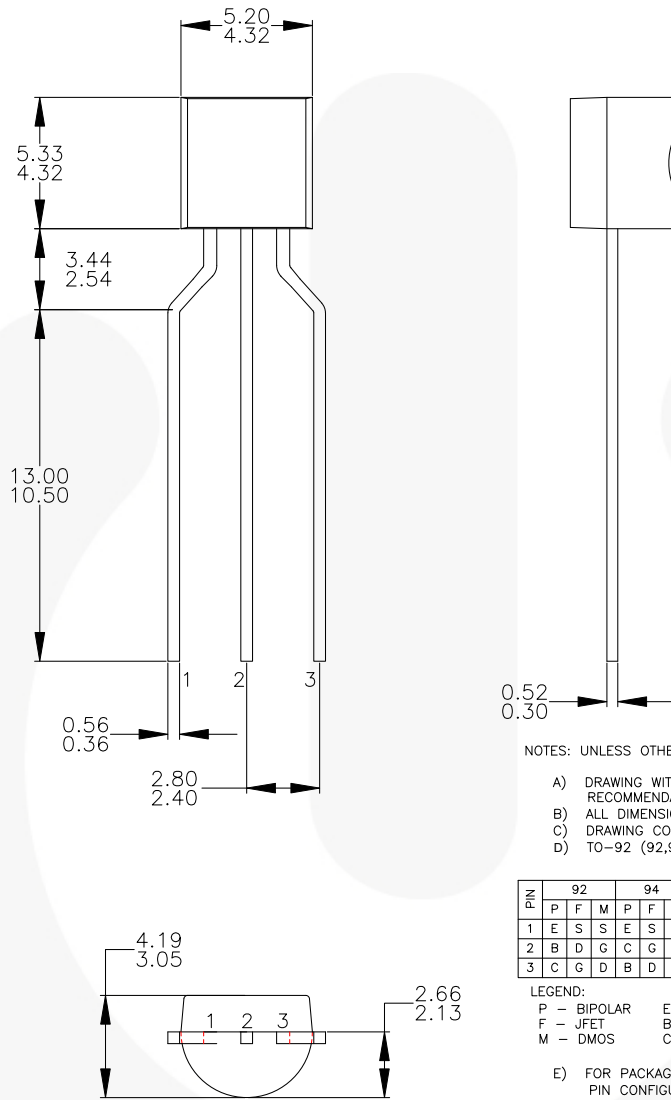


Figure 5. Application Circuit



Physical Dimensions

TO-92 Ammo Type



NOTES: UNLESS OTHERWISE SPECIFIED

- A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DRAWING CONFORMS TO ASME Y14.5M-1994.
- D) TO-92 (92,94,96,97,98) PIN CONFIGURATION:

| PIN | 92 | | | 94 | | | 96 | | | 97 | | | 98 | | |
|-----|----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|
| | P | F | M | P | F | M | B | F | M | P | F | M | P | F | M |
| 1 | E | S | S | E | S | S | B | D | G | C | G | D | C | G | D |
| 2 | B | D | G | C | G | D | E | S | S | B | D | G | E | S | S |
| 3 | C | G | D | B | D | G | C | G | D | E | S | S | B | D | G |

LEGEND:

- P - BIPOLAR
- F - JFET
- M - DMOS
- E - EMITTER
- B - BASE
- C - COLLECTOR
- D - DRAIN
- S - SOURCE
- G - GATE

- E) FOR PACKAGE 92, 94, 96, 97 AND 98: PIN CONFIGURATION DRAIN "D" AND SOURCE "S" ARE INTERCHANGEABLE AT JFET "F" OPTION.
- F) DRAWING FILENAME: MKT-ZA03FREV2.

Figure 6. 3-Lead, TO-92, Molded, 0.200 in Line Spacing Lead Form

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