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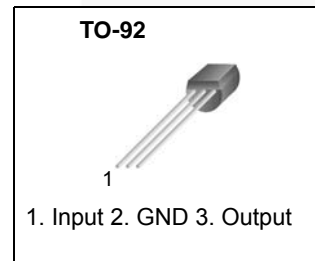
# KA75330 Voltage Detector

## 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

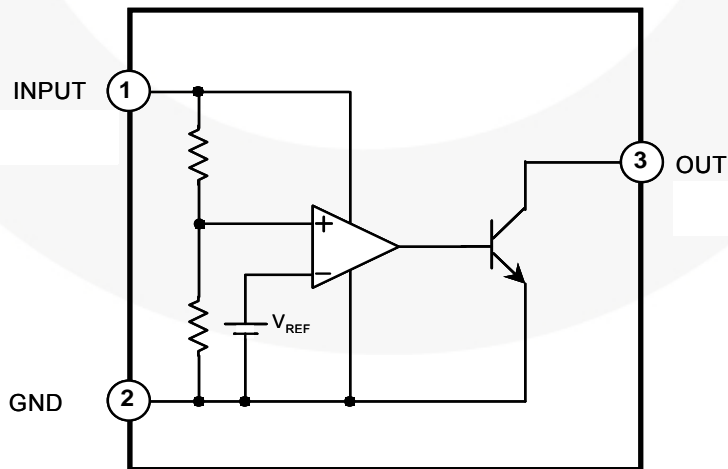


Figure 1. Block Diagram

## 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	$\mu\text{A}$
$V_{HYS}$	Hysteresis Voltage	$R_L = 200 \Omega$	30	50	100	mV
$DV_{DET}/DT$	Detecting Voltage Temperature Coefficient	$R_L = 200 \Omega$		$\pm 0.01$		$\%/^\circ\text{C}$
$I_{CCL}$	Circuit Current (At On Time)	$V_{CC} = V_{DET(MIN)} - 0.05 \text{ V}$		300	500	$\mu\text{A}$
$I_{CCH}$	Circuit Current (At Off Time)	$V_{CC} = 5.25 \text{ V}$		30	50	$\mu\text{A}$
$V_{TH(OPR)}$	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		$\mu\text{s}$
$t_{OH}$	"H" $\pm$ Transmission Delay	$R_L = 1.0 \text{ k}\Omega, C_L = 100 \text{ pF}$		15	20	$\mu\text{s}$
$I_{OLI}$	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.**

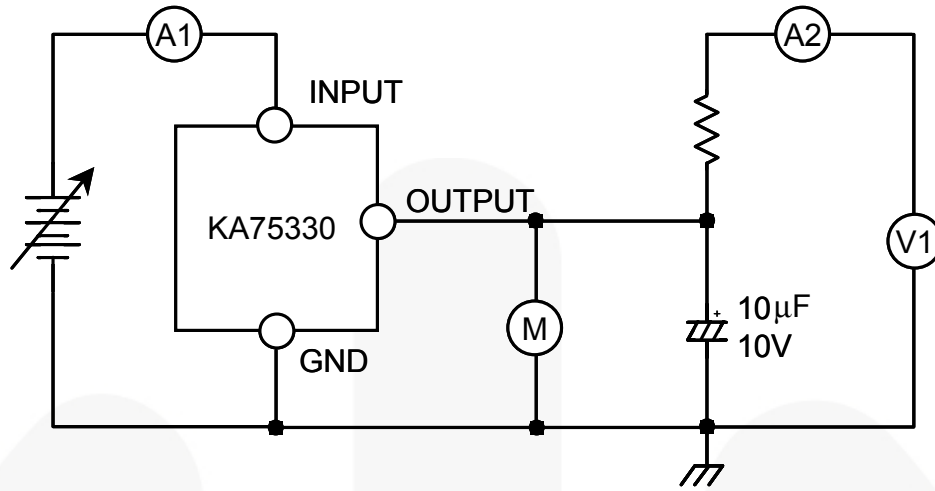


Figure 2. Test Circuit

**Test Circuit 2.**

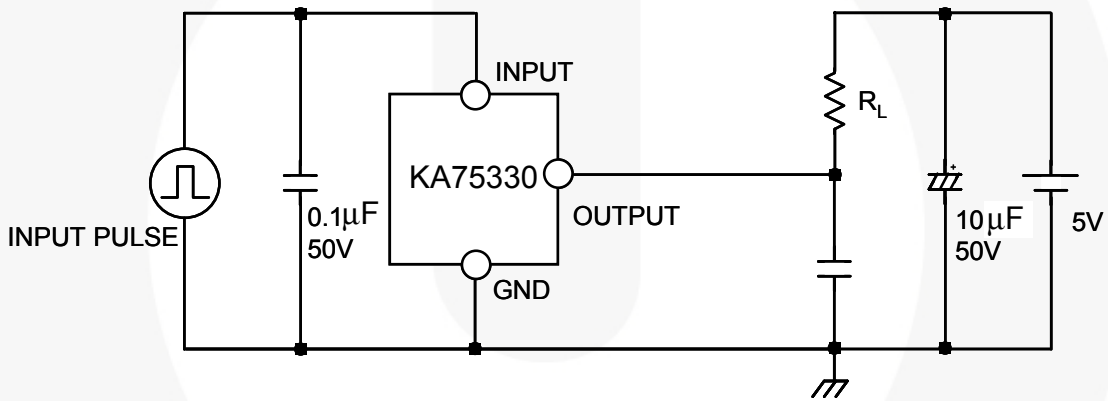


Figure 3. Test Circuit

**Test Circuit 3.**

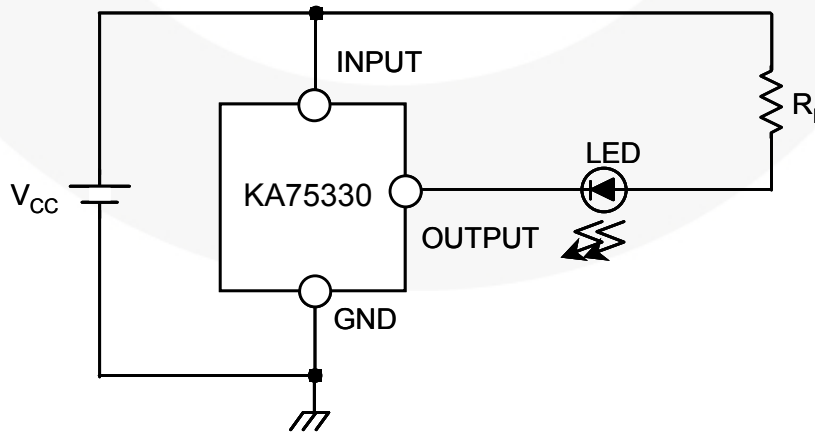


Figure 4. Test Circuit

### Application Circuit

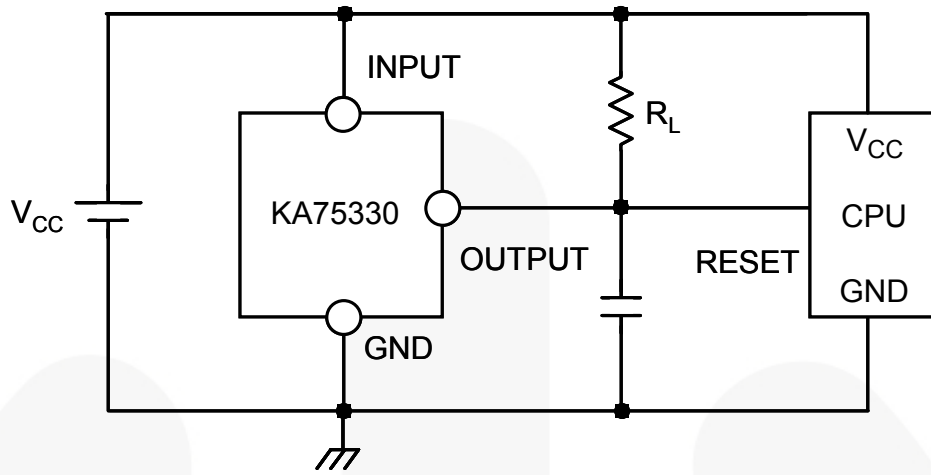
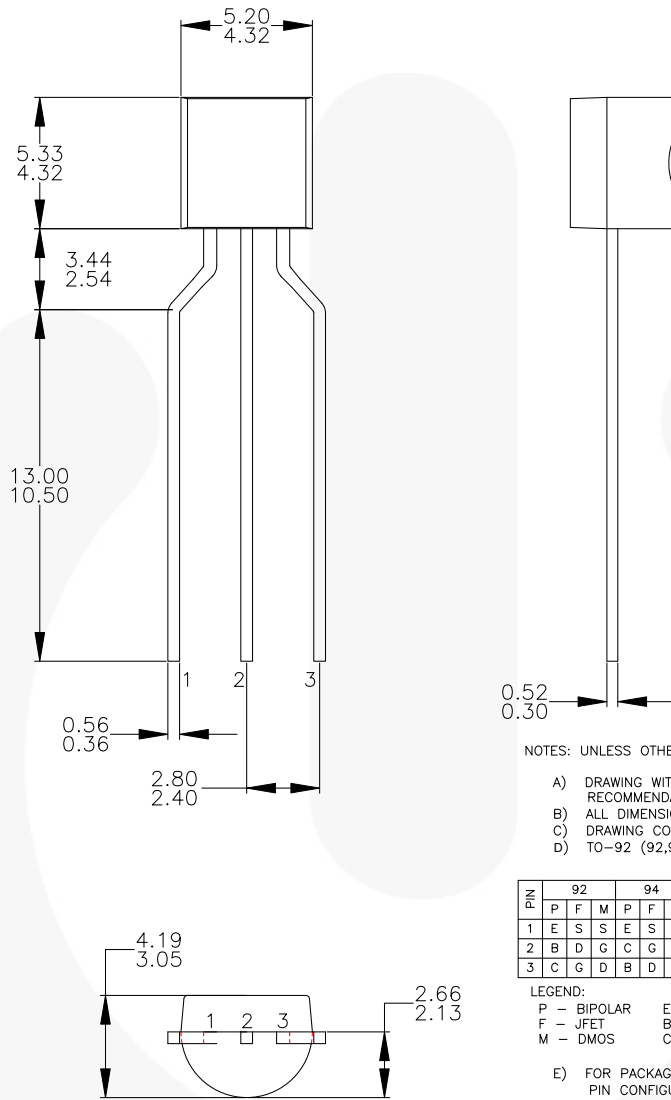


Figure 5. Application Circuit



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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| CROSSVOLT™                                                                                   | GTO™                                           |  ™                | TinyPower™                                                                                  |
| CTL™                                                                                         | IntelliMAX™                                    | Saving our world, 1mW/W/kW at a time™                                                              | TinyPWM™                                                                                    |
| Current Transfer Logic™                                                                      | ISOPLANAR™                                     | SignalWise™                                                                                        | TinyWire™                                                                                   |
| DEUXPEED®                                                                                    | Making Small Speakers Sound Louder and Better™ | SmartMax™                                                                                          | TranSiC™                                                                                    |
| Dual Cool™                                                                                   | MegaBuck™                                      | SMART START™                                                                                       | TriFault Detect™                                                                            |
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|  Fairchild® | MicroPak2™                                     | SuperFET®                                                                                          | UHC <sup>®2</sup>                                                                           |
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| FACT®                                                                                        | mW saver™                                      | SuperSOT™-8                                                                                        | VCX™                                                                                        |
| FAST®                                                                                        | OptoHiT™                                       | SupreMOS®                                                                                          | VisualMax™                                                                                  |
| FastvCore™                                                                                   | OPTOLOGIC®                                     | SyncFET™                                                                                           | VoltagePlus™                                                                                |
| FETBench™                                                                                    | OPTOPLANAR®                                    | Sync-Lock™                                                                                         | XS™                                                                                         |
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