

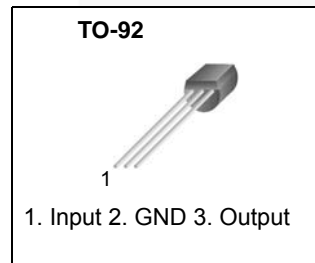
KA75330 Voltage Detector

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

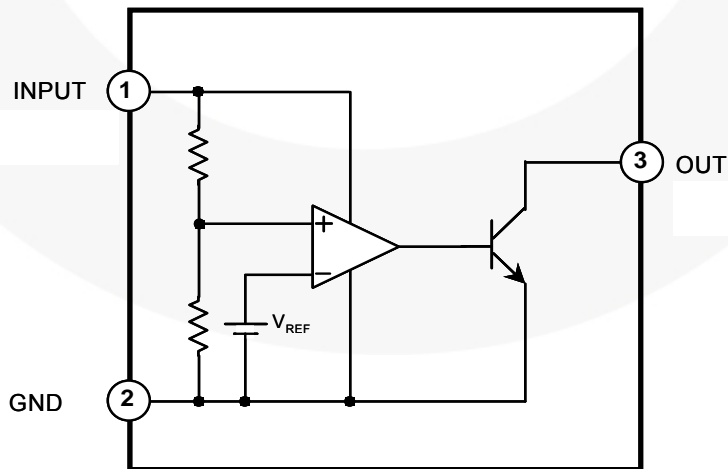


Figure 1. Block Diagram

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.

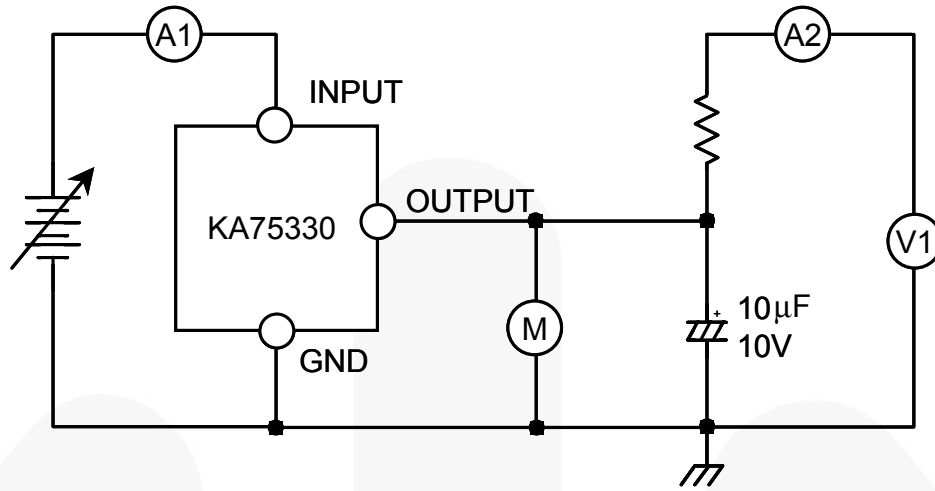


Figure 2. Test Circuit

Test Circuit 2.

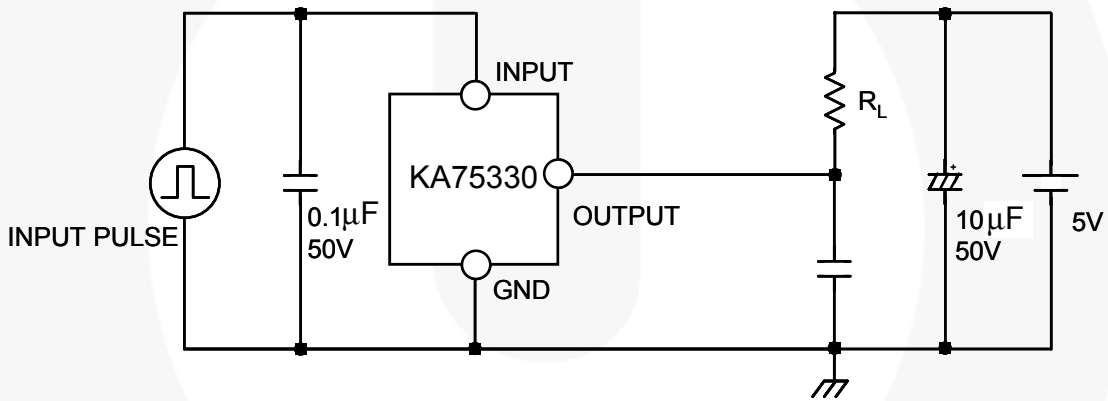


Figure 3. Test Circuit

Test Circuit 3.

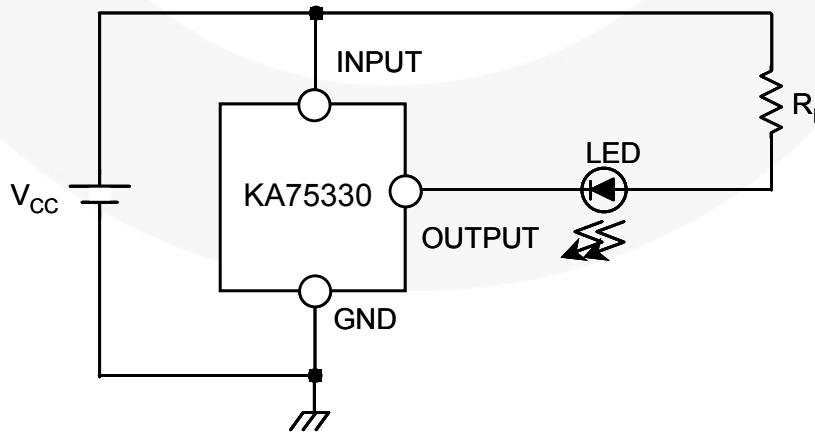


Figure 4. Test Circuit

Application Circuit

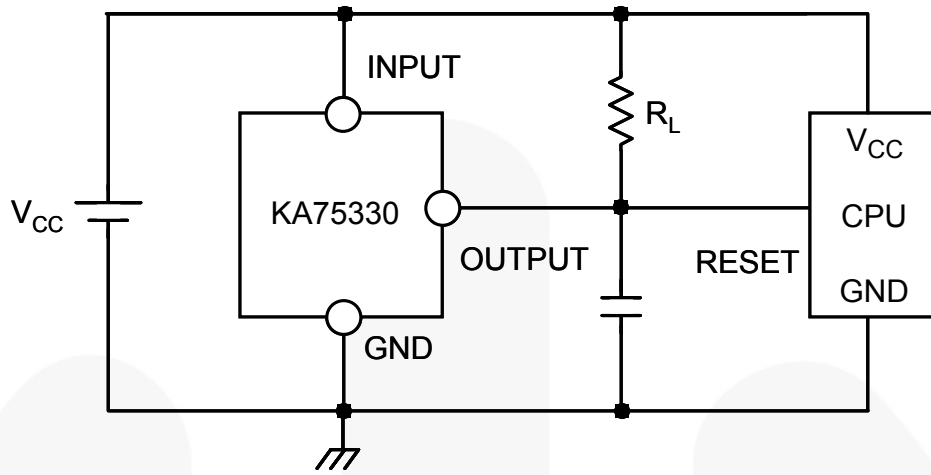
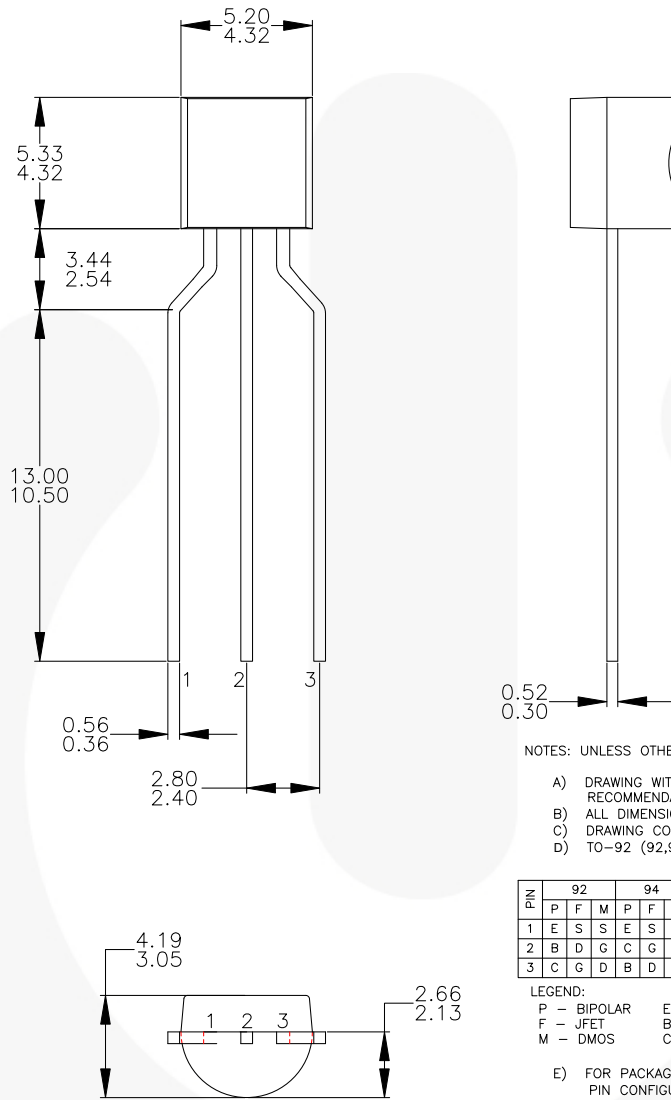


Figure 5. Application Circuit



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

Package drawings are provided as a service to customers considering Fairchild components. Drawings may change in any manner without notice. Please note the revision and/or date on the drawing and contact a Fairchild Semiconductor representative to verify or obtain the most recent revision. Package specifications do not expand the terms of Fairchild's worldwide terms and conditions, specifically the warranty therein, which covers Fairchild products.

Always visit Fairchild Semiconductor's online packaging area for the most recent package drawings:

<http://www.fairchildsemi.com/packaging/>


For current tape and reel specifications, visit Fairchild Semiconductor's online packaging area:

http://www.fairchildsemi.com/products/discrete/pdf/to92_tr.pdf



TRADEMARKS

The following includes registered and unregistered trademarks and service marks, owned by Fairchild Semiconductor and/or its global subsidiaries, and is not intended to be an exhaustive list of all such trademarks.

- | | | | |
|--|--|--|---|
| 2Cool™ | F-PFS™ | PowerTrench® | The Power Franchise® |
| AccuPower™ | FRFET® | PowerXS™ | the power franchise |
| AX-CAP™* | Global Power Resource SM | Programmable Active Droop™ | TinyBoost™ |
| BitSiC™ | GreenBridge™ | QFET® | TinyBuck™ |
| Build it Now™ | Green FPS™ | QS™ | TinyCalc™ |
| CorePLUS™ | Green FPS™ e-Series™ | Quiet Series™ | TinyLogic® |
| CorePOWER™ | Gmax™ | RapidConfigure™ | TINYOPTO™ |
| 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™ |
| EcoSPARK® | MICROCOUPLER™ | Solutions for Your Success™ | TRUECURRENT®* |
| EfficientMax™ | MicroFET™ | SPM® | µSerDes™ |
| ESBC™ | MicroPak™ | STEALTH™ |  SerDes™ |
|  Fairchild® | MicroPak2™ | SuperFET® | UHC ^{®2} |
| Fairchild Semiconductor® | MillerDrive™ | SuperSOT™-3 | Ultra FRFET™ |
| FACT Quiet Series™ | MotionMax™ | SuperSOT™-6 | UniFET™ |
| FACT® | mW saver™ | SuperSOT™-8 | VCX™ |
| FAST® | OptoHiT™ | SupreMOS® | VisualMax™ |
| FastvCore™ | OPTOLOGIC® | SyncFET™ | VoltagePlus™ |
| FETBench™ | OPTOPLANAR® | Sync-Lock™ | XS™ |
| FPS™ | |  SYSTEM GENERAL®* | |

* Trademarks of System General Corporation, used under license by Fairchild Semiconductor.

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support, device, or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

ANTI-COUNTERFEITING POLICY

Fairchild Semiconductor Corporation's Anti-Counterfeiting Policy. Fairchild's Anti-Counterfeiting Policy is also stated on our external website, www.fairchildsemi.com, under Sales Support.

Counterfeiting of semiconductor parts is a growing problem in the industry. All manufacturers of semiconductor products are experiencing counterfeiting of their parts. Customers who inadvertently purchase counterfeit parts experience many problems such as loss of brand reputation, substandard performance, failed applications, and increased cost of production and manufacturing delays. Fairchild is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. Fairchild strongly encourages customers to purchase Fairchild parts either directly from Fairchild or from Authorized Fairchild Distributors who are listed by country on our web page cited above. Products customers buy either from Fairchild directly or from Authorized Fairchild Distributors are genuine parts, have full traceability, meet Fairchild's quality standards for handling and storage and provide access to Fairchild's full range of up-to-date technical and product information. Fairchild and our Authorized Distributors will stand behind all warranties and will appropriately address any warranty issues that may arise. Fairchild will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources. Fairchild is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative / In Design	Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

Rev. I63

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Fairchild Semiconductor:

[KA75420ZTA](#) [KA75270MTF](#) [KA75250MTF](#) [KA75270ZTA](#) [KA75360ZTA](#) [KA75450ZTA](#) [KA75310MTF](#)
[KA75290MTF](#) [KA75420ZBU](#)