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# KA33V Voltage Stabilizer

## Features

- Low Temperature Coefficient
- Low Dynamic Resistance
- Typical Reference Voltage 33 V

## Description

The KA33V is a monolithic integrated voltage stabilizer designed as voltage supplier for electronic tuners.

TO-92



1. Anode 2. Cathode

## Ordering Information

Product Number	Operating Temperature Range	Top Mark	Package	Packing Method
KA33VBU	-20 to +75°C	KA33V	TO-92 2L	Bulk
KA33VTA				Ammo

## Block Diagram

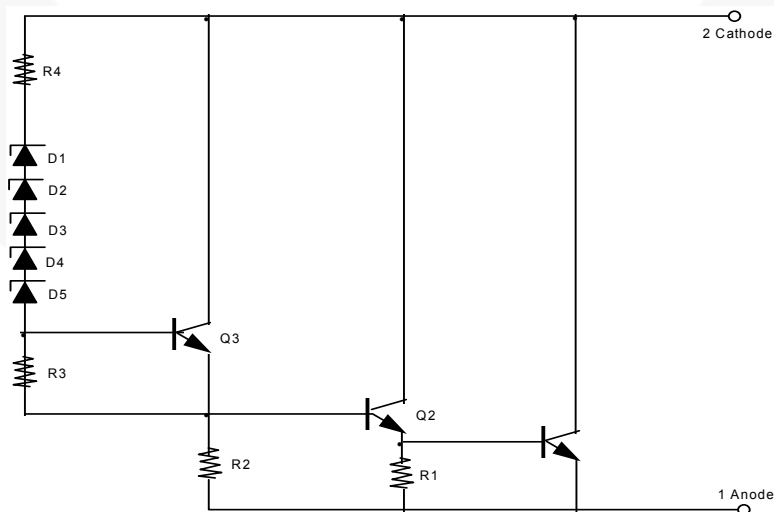


Figure 1. Block Diagram

## 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
$I_Z$	Zener Current	10	mA
$P_D$	Power Dissipation ( $T_A = 75^\circ\text{C}$ )	200	mW
$T_{OPR}$	Operating Ambient Temperature Range	-20 to 75	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-40 to 125	$^\circ\text{C}$

## Electrical Characteristics

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$V_Z$	Stabilized Voltage	$I_Z = 5\text{ mA}$	31		35	V
$\Delta V_Z/\Delta T$	Stabilized Voltage Temperature Drift	$I_Z = 5\text{ mA}$ , $T_A = -20\text{ to }75^\circ\text{C}$	-1	0	1	mV/ $^\circ\text{C}$
$R_Z$	Dynamic Resistance	$I_Z = 5\text{ mA}$ , $f = 1\text{ kHz}$		10	25	

Typical Performance Characteristics

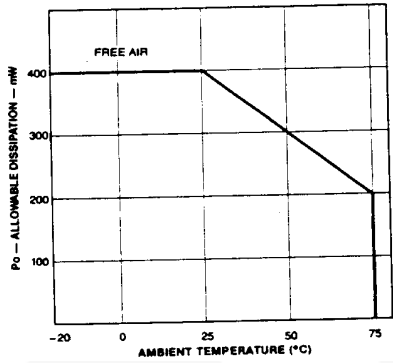


Figure 2. Allowable Dissipation vs. Ambient Temperature

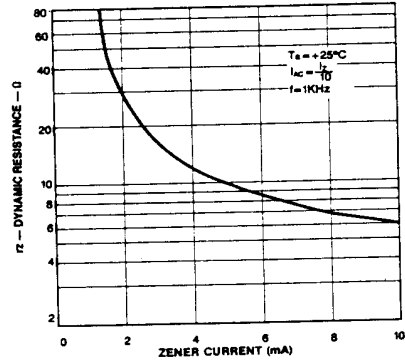


Figure 3. Dynamic Resistance vs. Zener Current

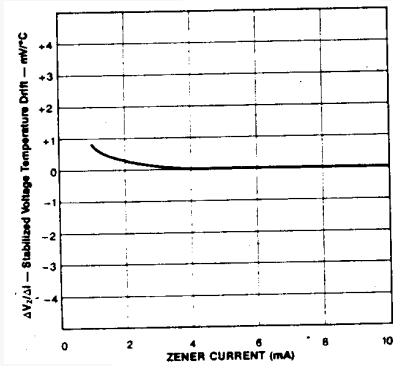


Figure 4. Stabilized Voltage Temperature Drift vs. Zener Current

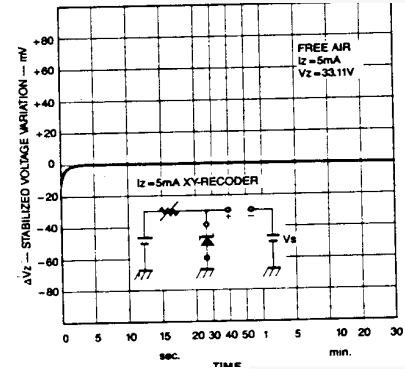


Figure 5. Stabilized Voltage Variation vs. Time

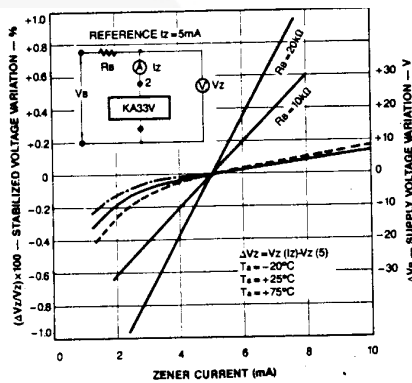


Figure 6. Stabilized Voltage Variation & Supply Voltage Variation vs. Zener Current

Test Circuit

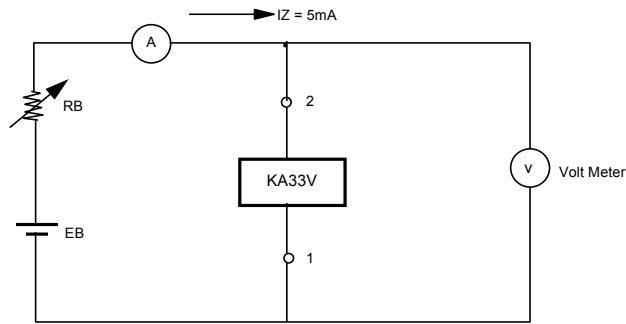


Figure 7. Measuring Circuit for Stabilized Voltage  $V_z$

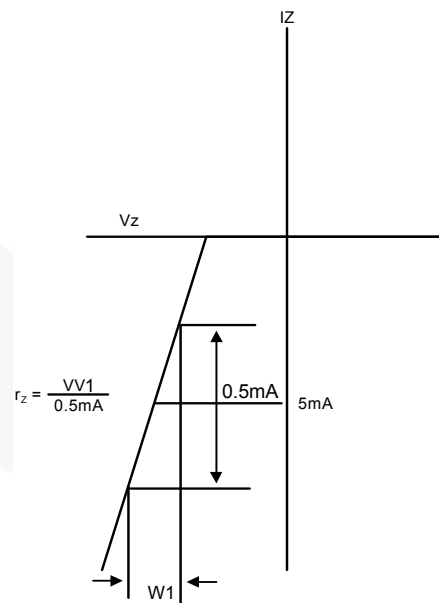
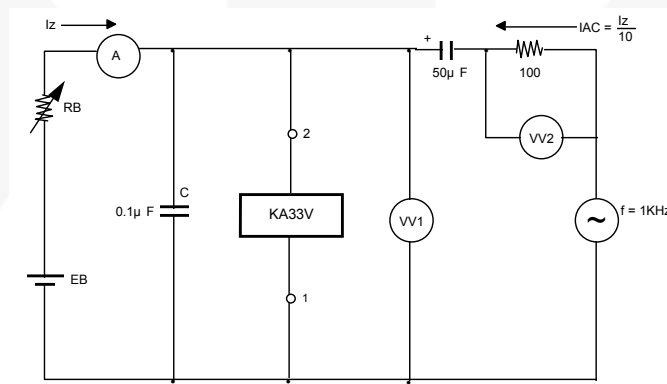


Figure 8. Measuring Circuit for Dynamic Resistance

Typical Application

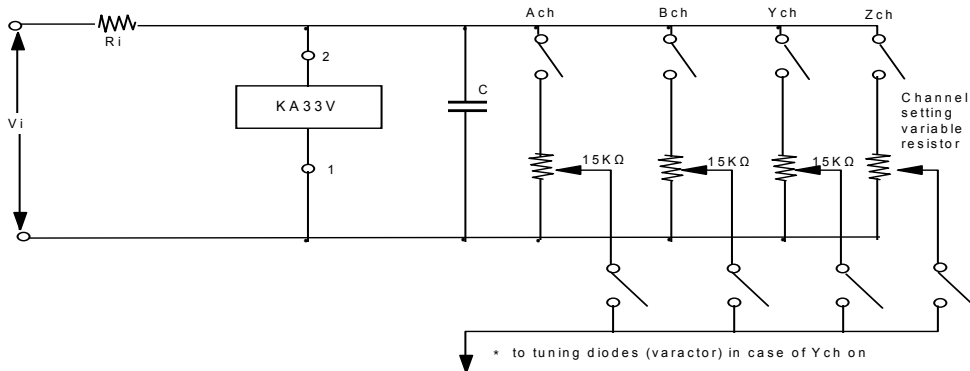


Figure 9. Electronic Tuner

1) UHF Tuner

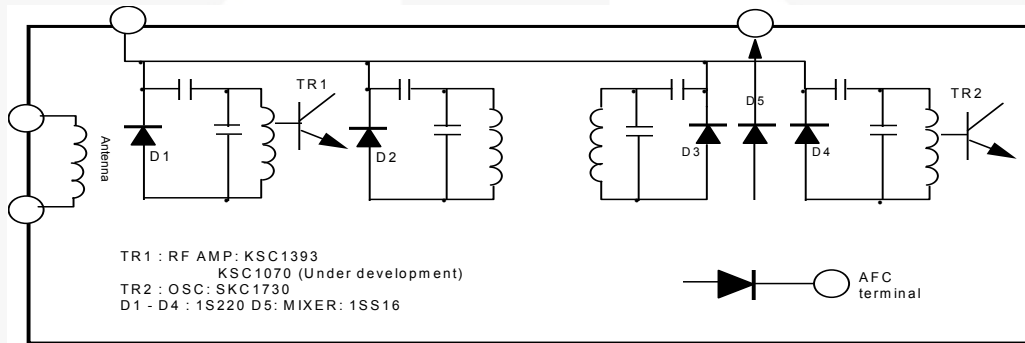


Figure 10. UHF Tuner

2) VHF Tuner

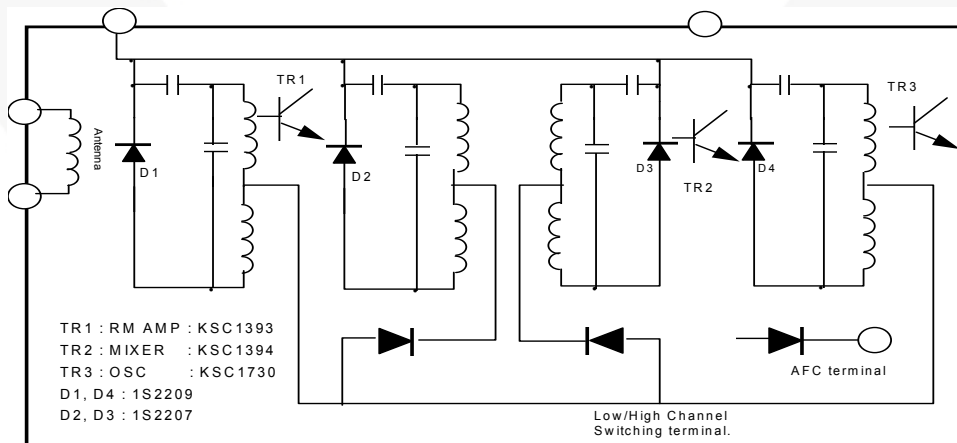
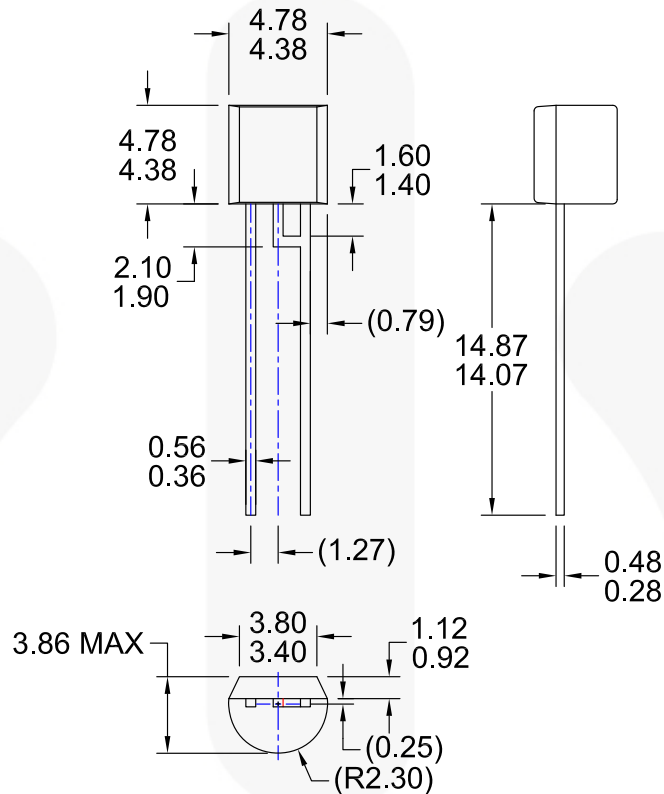


Figure 11. VHF Tuner

## Physical Dimensions

## TO-92 2L



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 C) DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.  
 D) FORMERLY NAMED BD6864  
 E) DRAWING FILE NAME: MKT-ZA02AREV1

**Figure 12. 2-LEAD, TO-92, JOINED TERMINAL (ACTIVE)**

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| BitSiC™                  | Global Power Resource <sup>SM</sup>            | Programmable Active Droop™            | TinyBuck™        |
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| CorePLUS™                | Green FPS™                                     | QS™                                   | TinyLogic®       |
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