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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

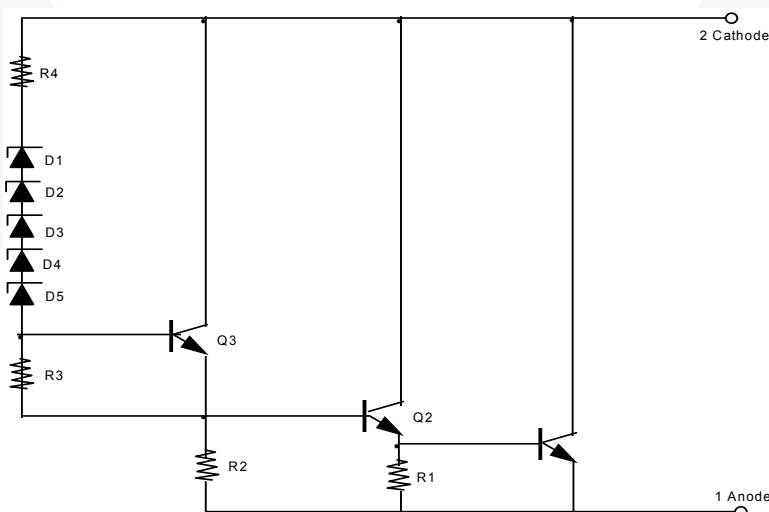


Figure 1. Block Diagram

## 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 | $I_Z = 5\text{ mA}$ ,<br>$T_A = -20\text{ to }75^\circ\text{C}$ | -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

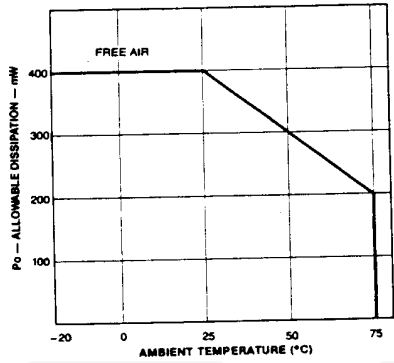


Figure 2. Allowable Dissipation vs. Ambient Temperature

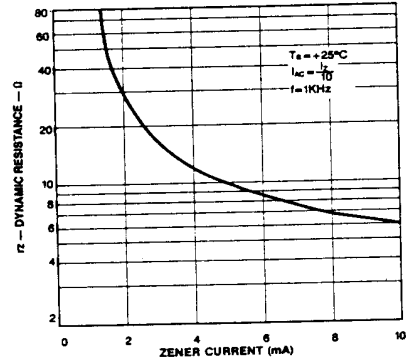


Figure 3. Dynamic Resistance vs. Zener Current

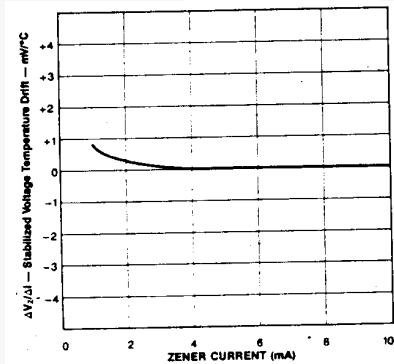


Figure 4. Stabilized Voltage Temperature Drift vs. Zener Current

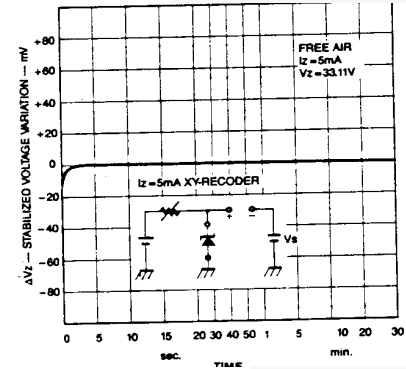


Figure 5. Stabilized Voltage Variation vs. Time

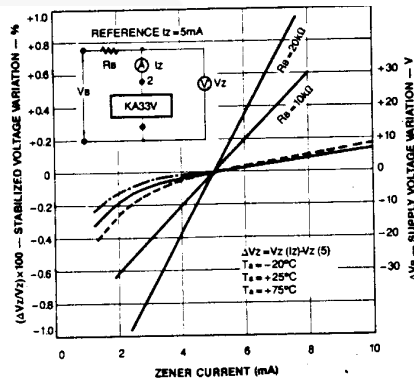


Figure 6. Stabilized Voltage Variation & Supply Voltage Variation vs. Zener Current

## Test Circuit

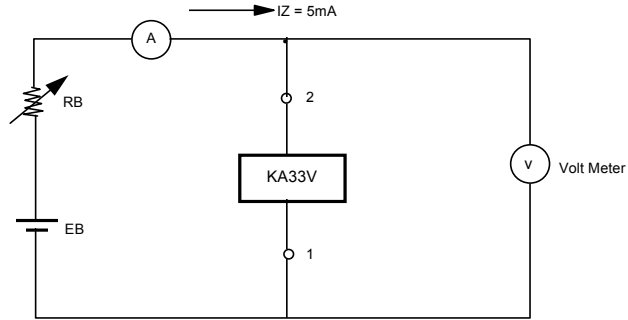


Figure 7. Measuring Circuit for Stabilized Voltage  $V_Z$

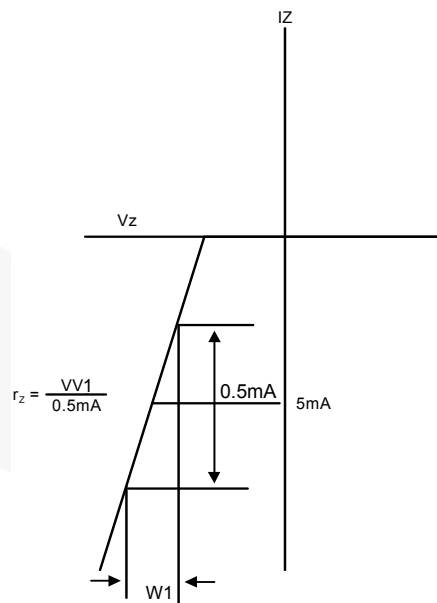
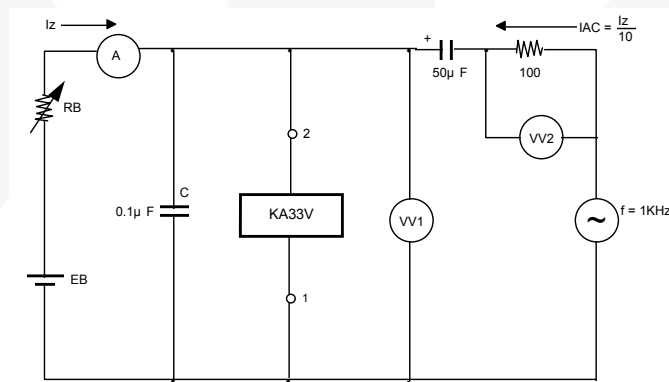


Figure 8. Measuring Circuit for Dynamic Resistance

## Typical Application

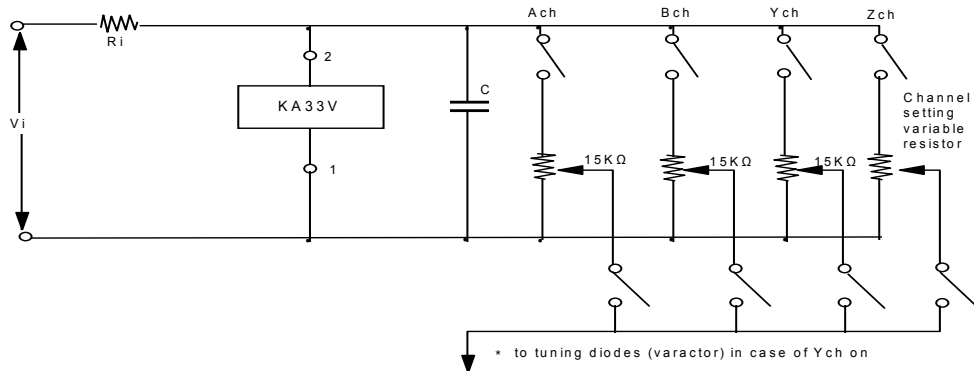


Figure 9. Electronic Tuner

### 1) UHF Tuner

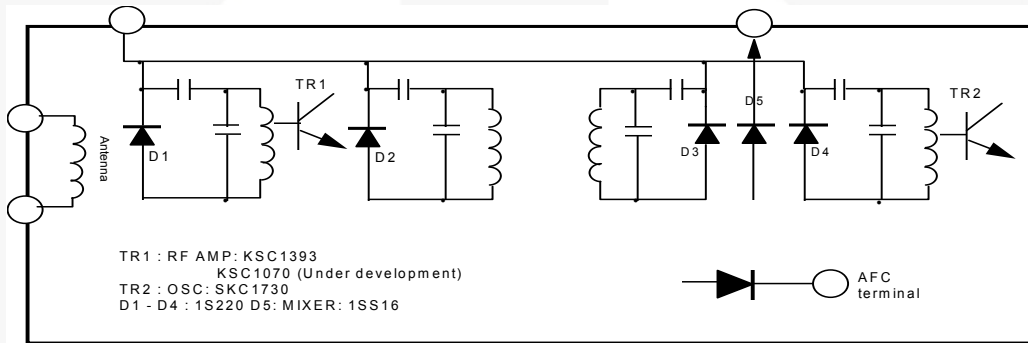


Figure 10. UHF Tuner

### 2) VHF Tuner

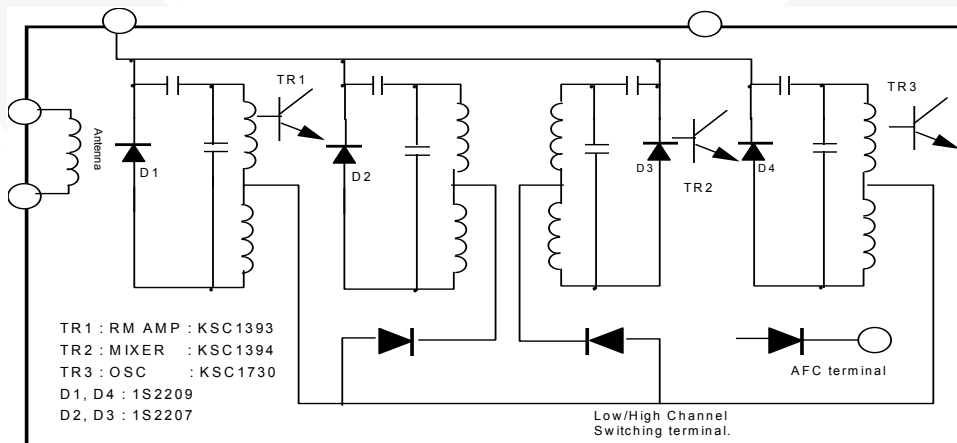
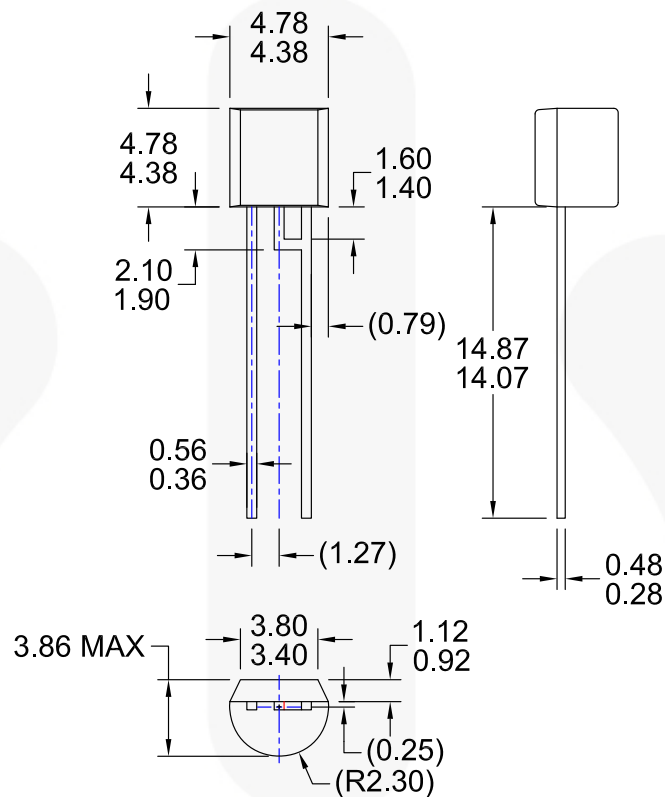


Figure 11. VHF Tuner

## Physical Dimensions

## TO-92 2L



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B) ALL DIMENSIONS ARE IN MILLIMETERS.

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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