

S1854 IS A REGULATOR DRIVER FOR LINE OPERATED TV, WHICH ARE BUILT UP OF ERROR AMPLIFIER TRANSISTOR, STANDARD VOLTAGE ZENER DIODE AND POLY-SILICON RESISTORS ON MONOLITHIC CHIP.

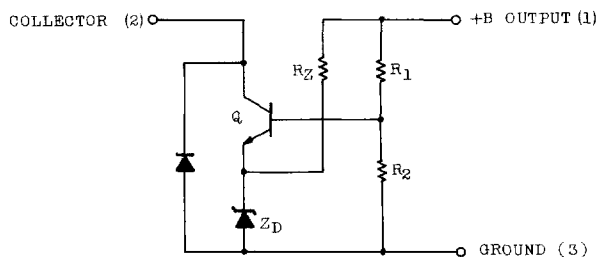
## FEATURES:

- Possible to Eliminate the Output Voltage Adjustment of Regulator Stage In Line Operated TV, Combined with the Usual Power Transistors.
- High Voltage ( $V_{CGO} \geq 150V$ )
- Excellent Temperature Characteristics of Regulated Output Voltage.

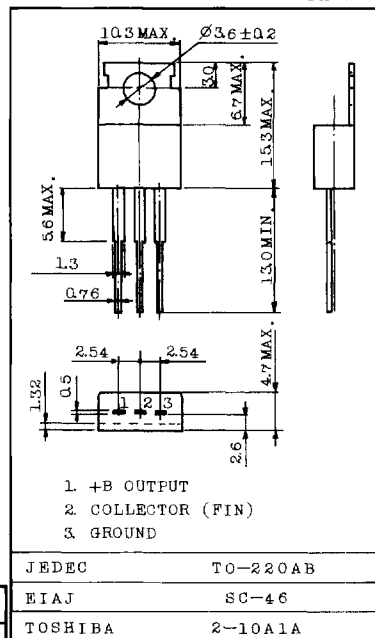
MAXIMUM RATINGS ( $T_a=25^\circ C$ )

| CHARACTERISTIC                 | SYMBOL    | RATING    | UNIT       |
|--------------------------------|-----------|-----------|------------|
| Collector to Ground Voltage    | $V_{CGO}$ | 150       | V          |
| Collector to +B Output Voltage | $V_{CBO}$ | 150       | V          |
| +B Output to Ground Voltage    | $V_{BGO}$ | 120       | V          |
| Collector Current              | $I_C$     | 50        | mA         |
| Power Dissipation              | $P_D$     | 1.5       | W          |
| Junction Temperature           | $T_j$     | 150       | $^\circ C$ |
| Storage Temperature            | $T_{stg}$ | -55 ~ 150 | $^\circ C$ |
| Operating Temperature Range    | $T_{opr}$ | -25 ~ 75  | $^\circ C$ |

## EQUIVALENT CIRCUIT



Unit in mm

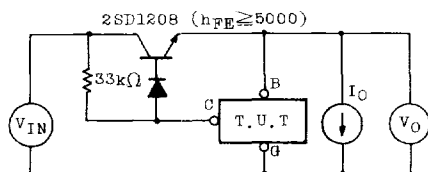


Weight : 1.9g

ELECTRICAL CHARACTERISTICS ( Unless otherwise specified,  $T_c=25^{\circ}\text{C}$  )

| CHARACTERISTIC                                      | SYMBOL        | TEST CONDITION                                                                                    | MIN.  | TYP. | MAX.      | UNIT                          |
|-----------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------|-------|------|-----------|-------------------------------|
| Collector to Ground Breakdown Voltage               | $V_{(BR)CGO}$ | $I_C=1\text{mA}$ , $I_B=0$                                                                        | 150   | -    | -         | V                             |
| Collector Cut-off Current                           | $I_{CGO}$     | $V_{CG}=120\text{V}$ , $V_{BG}=0$                                                                 | -     | -    | 1.0       | $\mu\text{A}$                 |
| Regulated Output Voltage                            | $V_O$         | $V_{IN}=150\text{V}$<br>$I_O=10\text{mA}$ , (Note 1)                                              | 112.5 | -    | 117.5     | V                             |
| Temperature Coefficient of Regulated Output Voltage | $rV_O$        | $V_{IN}=120\text{V}$ , $I_O=10\text{mA}$<br>$T_c=25^{\circ}\text{C}, 75^{\circ}\text{C}$ (Note 2) | -     | -    | $\pm 100$ | $\text{PPM}/^{\circ}\text{C}$ |
| Regulation                                          | $\Delta V_O$  | $V_{IN}=120\text{V}$ , $150\text{V}$<br>$I_O=10\text{mA}$ (Note 3)                                | -     | -    | 1.5       | V                             |
| Zener Voltage (Reference Inly)                      | $V_Z$         | $I_Z=1\text{mA}$                                                                                  | -     | 6.0  | -         | V                             |
| Resistance of $R_1$ (Reference Only)                | $R_1$         | $I_{R1}=1\text{mA}$                                                                               | -     | 36   | -         | $\text{k}\Omega$              |
| Resistance of $R_2$ (Reference Only)                | $R_2$         | $I_{R2}=1\text{mA}$                                                                               | -     | 2.2  | -         | $\text{k}\Omega$              |
| Resistance of $R_Z$ (Reference Only)                | $R_Z$         | $I_{RZ}=1\text{mA}$                                                                               | -     | 40   | -         | $\text{k}\Omega$              |
| DC Current Gain of Q (Reference Only)               | $h_{FE}$      | $V_{CE}=80\text{V}$ , $I_C=2\text{mA}$                                                            | -     | 200  | -         | -                             |
| Transition Frequency of Q                           | $f_T$         | $V_{CE}=10\text{V}$ , $I_C=10\text{mA}$                                                           | -     | 120  | -         | $\text{MHz}$                  |

Note 1 : TEST METHOD



Note 2 :  $rV_O = \frac{V_O(75^{\circ}\text{C}) - V_O(25^{\circ}\text{C})}{V_O(25^{\circ}\text{C}) \times 50} \times 10^6$  (PPM/ $^{\circ}\text{C}$ ) where  $V_O(75^{\circ}\text{C})$  ;  $V_O$  at  $T_c=75^{\circ}\text{C}$   
 $V_O(25^{\circ}\text{C})$  ;  $V_O$  at  $T_c=25^{\circ}\text{C}$

Note 3 :  $\Delta V_O(150\text{V}) - V_O(120\text{V})$  where  $V_O(120\text{V})$  ;  $V_O$  at  $V_{IN}=120\text{V}$   
 $V_O(150\text{V})$  ;  $V_O$  at  $V_{IN}=150\text{V}$

## APPLICATION CIRCUIT

