



SANKEN ELECTRIC COMPANY, LTD.

S P E C I F I C A T I O N S

Sanken Hybrid Voltage Regulator Module, STR Series  
Sanken Part No: STR54041

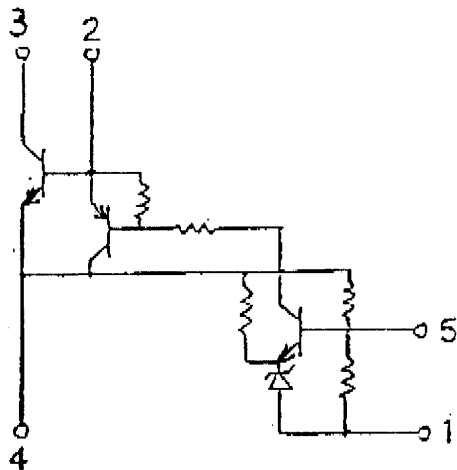
Messrs :

Date : October 8, 1985  
Specification No. : ES85044

1. Features:

- a. Hybrid Voltage Regulator Module incorporated triple diffused planar transistor chips
- b. Transfer Molded
- c. For TV Switch Mode Power Supply
- d. Fixed Output Voltage

2. Equivalent Circuit



- 1. Vout SENSE (-)
- 2. BASE DRIVE (B)
- 3. IN PUT (C)
- 4. EARTH (E)
- 5. Vo CONT

3. Outline Drawing, Marking and Pin Connections

Refer to Figure 1

- 4. The type number and lot number shall be legitimately marked by white color.



## 5. Absolute Maximum Ratings

| Description                           | Symbol    | Unit             | Ratings                         |
|---------------------------------------|-----------|------------------|---------------------------------|
| Maximum Peak Input Voltage            | $V_{IN}$  | V                | 900                             |
| Input Current                         | $I_{IN}$  | A                | 6 (Pulse 12)                    |
| Maximum Power Dissipation             | $P_D$     | W                | 27 ( $T_c=100^\circ\text{C}$ )* |
| Operating Temperature                 | $T_{op}$  | $^\circ\text{C}$ | -20-+125 ( $T_c$ )              |
| Storage Temperature                   | $T_{stg}$ | $^\circ\text{C}$ | -30-+125                        |
| Power Transistor Junction Temperature | $T_j$     | $^\circ\text{C}$ | +150                            |

\* Recommendation Case Temperature  $T_{op}(T_c)=100^\circ\text{C}$  Max

## Suggested Silicone Grease

C746: SHIN-ETSU CHEMICAL INDUSTRY CO., LTD.  
C747: SHIN-ETSU CHEMICAL INDUSTRY CO., LTD.  
YG6260: TOSHIBA SILICONE CO., LTD.  
SC102: TORAY SILICONE CO., LTD.



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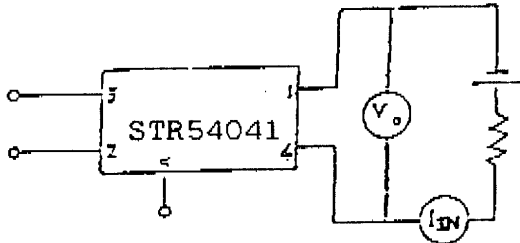
6. Electrical Characteristics 1

| Description                                 |                  | Conditions   | Ratings              |                   |
|---|------------------|--|----------------------|-------------------|
| Fixed Output Voltage<br>(Detecting Voltage) |                  | $I_{IN}=7mA$ , Measurement<br>Circuit 1                                    | $41.8 \pm 0.5V$      |                   |
| Output Voltage<br>Temperature Coefficient   |                  | $T_C = -20 \text{--} +100^\circ C$ , $I_{IN}=7mA$<br>Measurement Circuit 1 | $\pm 2.0mV/^\circ C$ |                   |
| Power Transistor<br>Characteristics         | $V_{CE(sat)}$    | $I_C=2A$ , $I_B=0.4A$  | 1.0V Max             |                   |
|   | $h_{FE}$         | $V_{CE}=4V$ , $I_C=1A$   | Min 10<br>Max 30     |                   |
|   | $I_{CEX}$        | $V_{CE}=900V$ , $V_{BE}=-1.5V$   | 1.0mA Max            |                   |
|   | $V_{BE(sat)}$    | $I_C=2A$ , $I_B=0.4A$  | 1.5V Max             |                   |
|   | $R_{\theta j-c}$ | Between Junction and<br>Stem Upper Surface                                 | 1.8 $^\circ C/W$     |                   |
|   | Switching Time   | Measurement Circuit 2  | $t_s$                | 7 $\mu sec$ Max   |
|   |                  |  | $t_f$                | 1.0 $\mu sec$ Max |

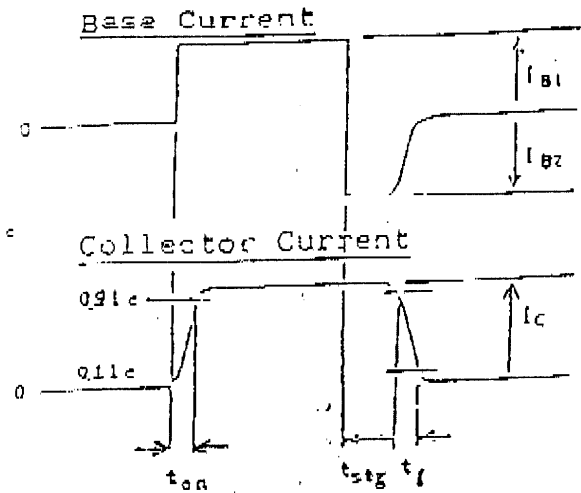
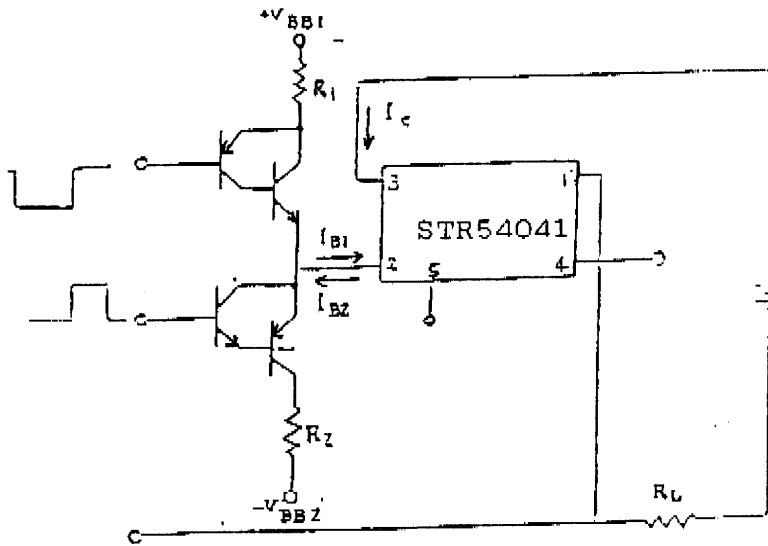


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Measurement Circuit 1.



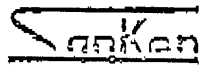
Measurement Circuit 2



$I_c = 2A$  ,  $R_L = 50\Omega$   
 $I_{B1} = 300mA$  ,  $I_{B2} = 1.0A$

7. Electrical Characteristics 2

| Description     | Conditions  | Ratings                |
|-----------------|---|------------------------|
| Output Voltage  | $V_{IN} = 220V$ , $I_o = 0.5A$<br>Actual Working Circuit 1.           | $114.5 \pm 1.5V$       |
| Line Regulation | $V_{IN} = 180 \sim 280V$ , $I_o = 0.5A$<br>Actual Working Circuit 1   | Initial Value $\pm 1V$ |
| Load Regulation | $V_{IN} = 220V$ , $I_o = 0.3A \sim 0.5A$<br>Actual Working Circuit 1. | Initial Value $\pm 2V$ |



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Actual Working Circuit 1.  
(Reference Circuit Diagram)

