



# SANKEN ELECTRIC COMPANY, LTD.

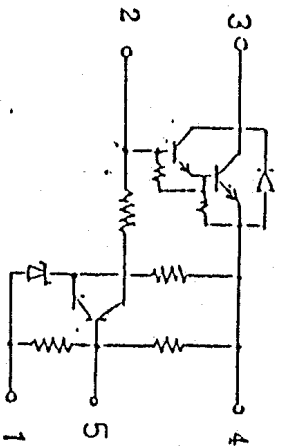
## S P E C I F I C A T I O N

SanKen Hybrid IC Voltage Regulator STR30000 Series

Date : December 2, 1986  
Specification No. : SSE-15051

1. Features:
  - A. Hybrid IC Voltage Regulator incorporated triple diffused planar darlington transistor
  - B. For Line-Operated CTV
  - C. Fixed Output Voltage

### 2. Equivalent Circuit



1. Common
  2. Base
  3. Input
  4. Output
  5. Blank
- \* STR30110 has pin No.5 for output voltage adjustment.

3. Outline Drawings, Marking and Pin connections are as per attached Fig.-1.

4. The type number, voltage 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	200
Maximum Output Current	$I_O$	A	1.0
Maximum Power Dissipation	$P_D$	W	27 ( $T_c=100^{\circ}C$ )
Operating Temperature	$T_{op}$	$^{\circ}C$	-20 $\sim$ +125( $T_c$ )
Storage Temperature	$T_{stg}$	$^{\circ}C$	-30 $\sim$ +125
Junction Temperature of Power Transistor	$T_j$	$^{\circ}C$	+150 Max

\*1. Recommended Case Temperature :  $T_c(op)=100^{\circ}C$



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## 6. Electrical Characteristics $T_a = 25^{\circ}\text{C}$

Description	Conditions	Ratings
Fixed Output Voltage (Measuring Circuit 1 and 2)	See the Table	See the Table **
Line Regulation (Measuring Circuit 1)	"	"
Load Regulation (Measuring Circuit 1)	"	"
Output Voltage Temperature Coefficient	"	"
In-Out Saturation Voltage ( $V_{CE(sat)}$ )	$I_C = 1.0\text{A}$ , $I_B = 10\text{mA}$	1.5V Max
In-Out Breakdown Voltage ( $V_{CEO}$ )	$I_{CEO} = 10\text{mA}$ , $I_B = 0\text{A}$	200V Min
DC Current Gain ( $h_{FE}$ )	$I_C = 1.0\text{A}$ , $V_{CE} = 4\text{V}$	1,500 ~ 6,500
Thermal Resistance ( $R_{th(j-c)}$ )	Junction and Copper plate of IC	1.8 $^{\circ}\text{C/W}$
In-Out Leak Current ( $I_{CEO}$ )	$V_{CE}$ (Pin 3-4)=200V Pin 1, 2 and 5 open	100 $\mu\text{A}$ Max
Reverse Surge Current Between Pin 4 and 2	$t = 65\text{msec}$	300mA Max

\*\* The fixed output voltage is to be measured at 5 seconds  
passed after power switch turned on.  
When the output voltage at the measuring circuit 1 is  
deviated from the specified, it is to be judged by the  
measuring circuit 2.

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.

Table

Description \ Type No.		STR30110	STR30112	STR30113	STR30115	STR30120	STR30123	STR30125	STR30130	STR30134	STR30135
1	Specified Voltage:	110±0.8V	112±0.8V	113±0.8V	115±0.8V	120±0.8V	123±0.8V	125±0.8V	130±0.8V	134±0.8V	135±0.8V
	Conditions 1 (Measuring Circuit 2)	$I_{IN} = 5.9 \text{ mA}$				$I_{IN} = 7.2 \text{ mA}$			$I_{IN} = 6.9 \text{ mA}$		
	Conditions 2 (Measuring Circuit 1)	$V_{IN} = 134 \text{ V (DC)}, I_o = 0.5 \text{ A}$				$V_{IN} = 161 \text{ V (DC)}, I_o = 0.5 \text{ A}$					
2	Specified Regulation	$\Delta 2.4 \text{ V Max}$									
	Conditions (Measuring Circuit 1)	$V_{IN} = 125 \sim 150 \text{ V (DC)}$ $I_o = 0.5 \text{ A}$				$V_{IN} = 145 \sim 170 \text{ V (DC)}$ $I_o = 0.5 \text{ A}$			$V_{IN} = 150 \sim 175 \text{ V (DC)}$ $I_o = 0.5 \text{ A}$		
3	Specified Regulation	$\Delta 0.5 \text{ V Max}$									
	Conditions (Measuring Circuit 1)	$V_{IN} = 134 \text{ V (DC)}$ $I_o = 0.25 \sim 0.5 \text{ A}$				$V_{IN} = 161 \text{ V (DC)}$ $I_o = 0.25 \sim 0.5 \text{ A}$					
4	Specified Coefficient	$\pm 0 \text{ mV}/^\circ\text{C typ}$									
	Conditions (Measuring Circuit 1)	$V_{IN} = 134 \text{ V (DC)}, I_o = 0.5 \text{ A}$ $T_o = -20 \sim 100^\circ\text{C}$				$V_{IN} = 161 \text{ V (DC)}, I_o = 0.5 \text{ A}$ $T_o = -20 \sim 100^\circ\text{C}$					
Value of resistors used in Measuring Circuit 1		$R_3 = 10 \text{ K}\Omega$ $R_4 = 220 \text{ K}\Omega$			$R_3 = 10 \text{ K}\Omega$ $R_4 = 330 \text{ K}\Omega$		$R_3 = 12 \text{ K}\Omega$ $R_4 = 220 \text{ K}\Omega$		$R_3 = 12 \text{ K}\Omega$ $R_4 = 330 \text{ K}\Omega$		

