

ATTN: Paul

STR-D SERIES

SANKEN HYBRID VOLTAGE REGULATOR MODULE

PART NUMBER STR-D10057

Date: February 22, 1988

Specification No.: SSE16935

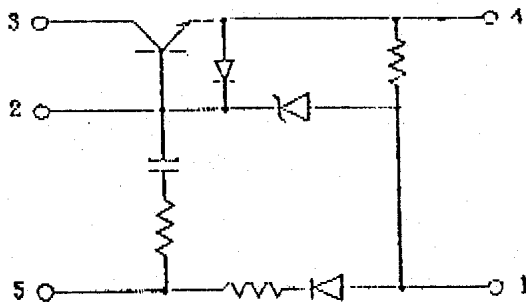
Post-It™ brand fax transmittal memo 7671

To	From
Fax #	

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. V<sub>OUT</sub> ( )
- 2. BASE
- 3. INPUT (C)
- 4. EARTH (E)
- 5. DRIVE INPUT

3. Outline Drawing, Marking, and Pin Connections

Refer to Figure 1.

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

## 5. Absolute Maximum Ratings

Description	Symbol	Unit	Rating
Maximum Peak Input Voltage	$V_{IN}$	V	900
Input Current	$I_{IN}$	A	1.5 (Pulse 3.0)
Maximum Power Dissipation	$P_D$	W	20 ( $T_{c_1} = 100^{\circ}C$ ) (* NOTE 1)
Operating Temperature	$T_c$	$^{\circ}C$	-20 - +125 ( $T_{c_2}$ ) (* NOTE 2)
Storage Temperature	$T_{stg}$	$^{\circ}C$	-30 - +125
Power Transistor Junction Temperature	$T_J$	$^{\circ}C$	+150
Output Current	$I_o$	A	0.4 ( $V_o = 12V$ )

\* NOTE 1:  $T_{c_1}$  - Temperature was measured directly on the plastic case under transistor die.

\* NOTE 2: Recommendation case temperature  $T_{c_1}$  ( $T_{c_2}$ ) = 100 $^{\circ}C$  Max.  
( $T_{c_2}$ : Internal flame temperature)

Electrical Characteristics

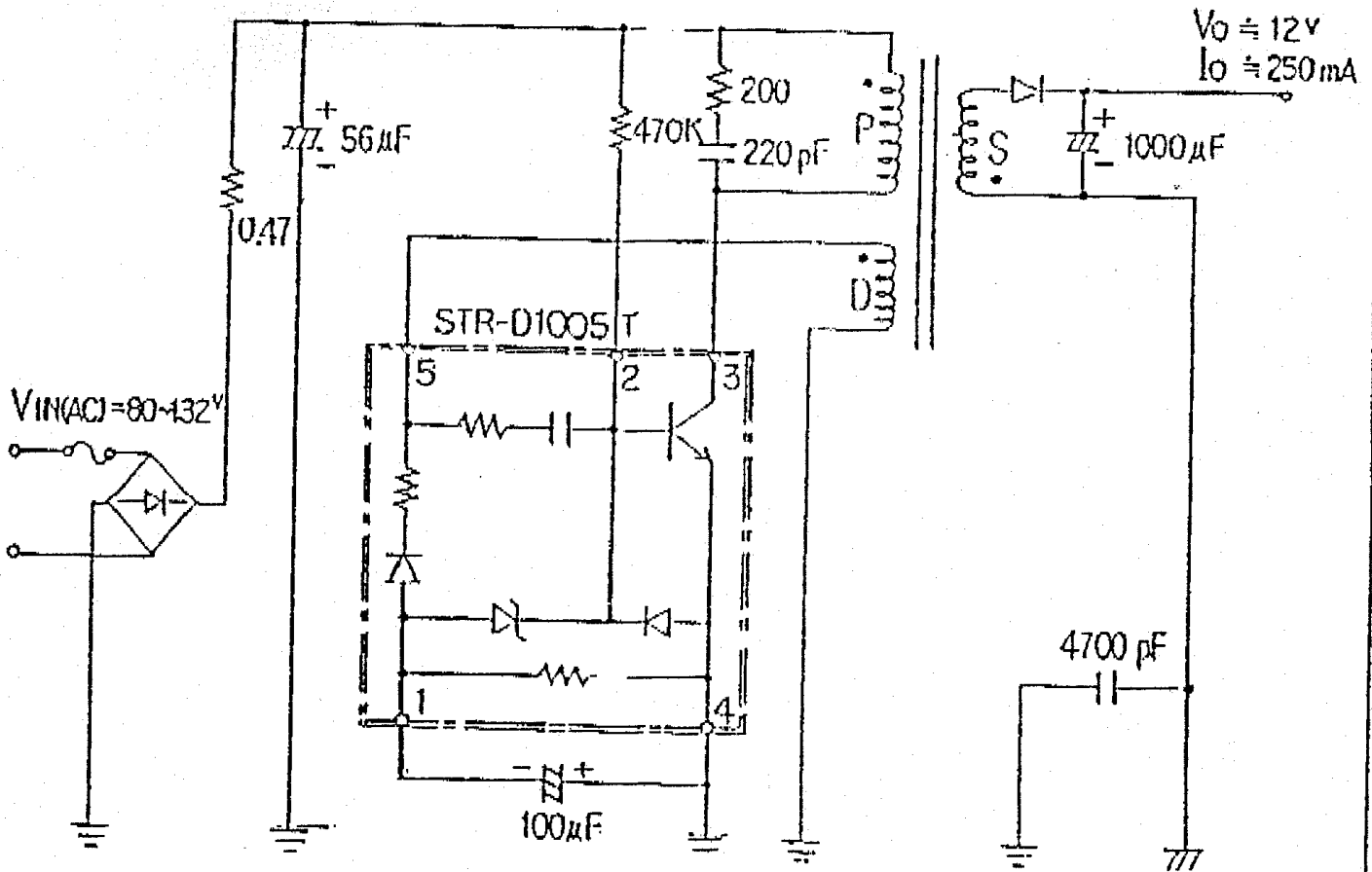
Description	Symbol	Conditions	Ratings
Fixed Reference Voltage (Detecting Voltage)	VREF	I <sub>IN</sub> = 17mA Measurement Circuit 1	5.35 ± 0.20V
Collector - Emitter (Saturation Voltage)	V <sub>CE(SAT)</sub>	I <sub>C</sub> = 300mA, I <sub>B</sub> = 50mA	1.0V Max.
DC Gain	h <sub>FE</sub>	V <sub>CE</sub> = 4V, I <sub>C</sub> = 100mA	15 Min/45 Max
Collector Cut Off Current	I <sub>CEX</sub>	V <sub>CE</sub> = 800V, V <sub>BE</sub> = -1.5V	1.0mA Max
Base Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	I <sub>C</sub> = 300mA, I <sub>B</sub> = 50mA	1.5V Max
Thermal Resistance	θ <sub>jc</sub>	Between Junction & Stem Upper Surface	1.8 °C/W Max
Switching Time		See Test Circuit 2	t <sub>s</sub> 7μsec Max
			t <sub>f</sub> 1.0μsec Max

Characteristics

Suggested Silicone Grease

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

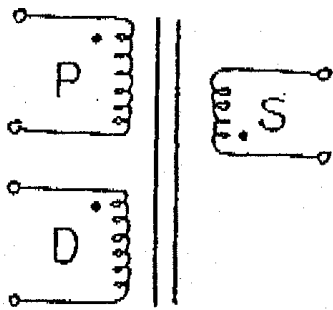
# 7. Application Circuit



CORE SIZE : EE-16

GAP(CENTER) : 0.2mm

$L_p \approx 6.4\text{mH}$



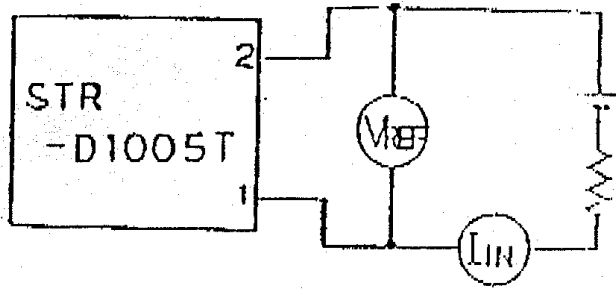
P :  $\phi$  0.18 220 T

D :  $\phi$  0.18 9 T

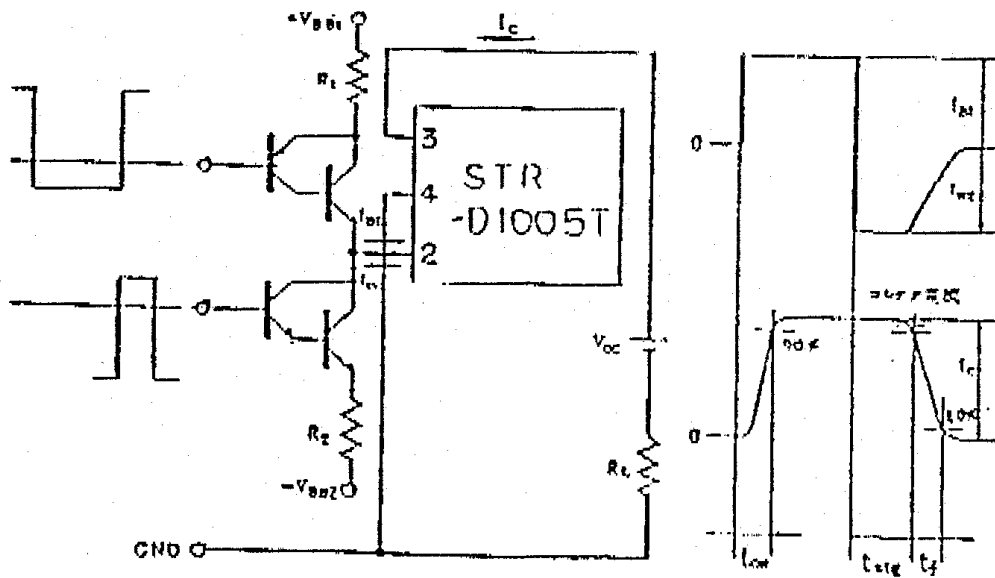
S :  $\phi$  0.26 21 T

OUTPUT VOLTAGE  $V_o$  CAN BE VARIED BY CHANGING TRANSFORMER TURN RATIOS.

Measurement Circuit 1.



Measurement Circuit 2.

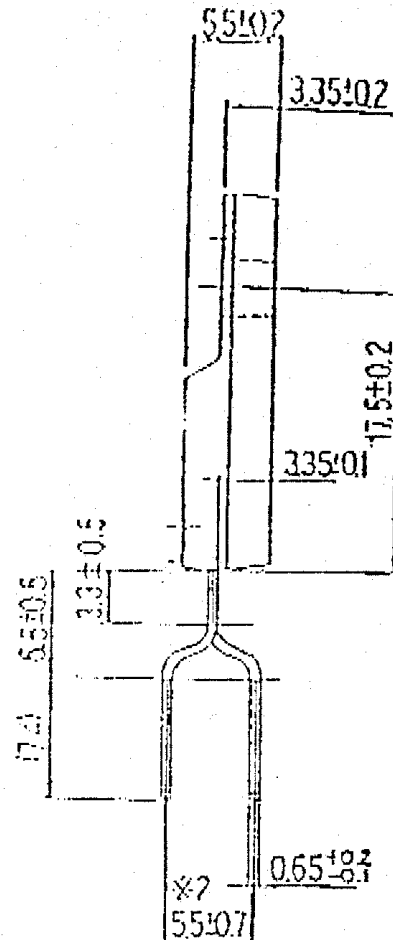
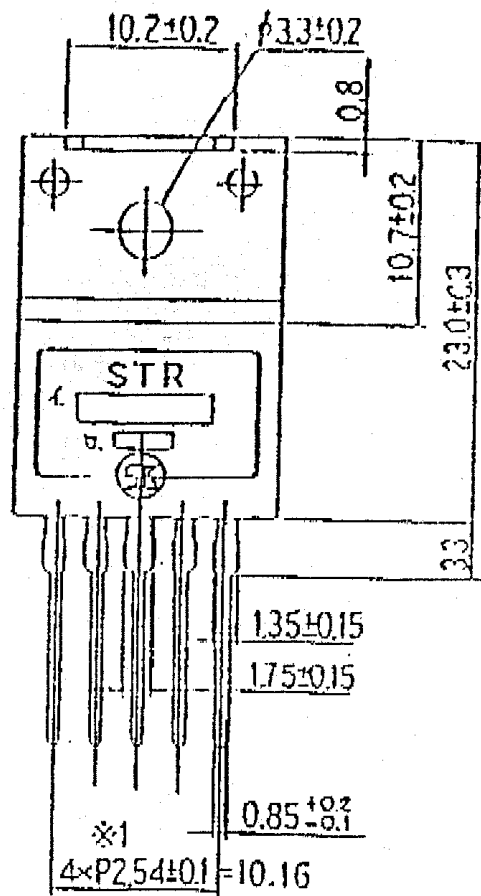


$$I_C = 300 \text{ mA}$$

$$R_L = 333 \Omega$$

$$I_{B1} = 50 \text{ mA}$$

$$I_{B2} = 100 \text{ mA}$$



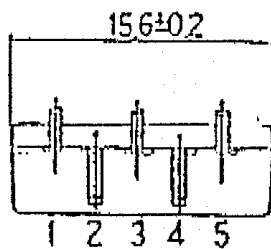
A. Type Number : D1005 T

B. Lot Number

1st letter: The last numerical figure of calendar year

2nd letter: Month (1 to 9 for Jan to Sep.,  
0 for Oct.,  
N for Nov.,  
D for Dec.)

3rd, 4th letter: Date



1. V<sub>cc</sub> (-)
2. BASE
3. INPUT (C)
4. EARTH (E)
5. DRIVE INPUT

FIGURE 1