

SANKEN ELECTRIC COMPANY, LTD.

SANKEN SWITCHING REGULATOR HYBRID IC

Type : STR-S5141G

1. Scope:

The present specifications shall only apply to Sanken Switching Regulator Hybrid IC, type STR-S5141G.

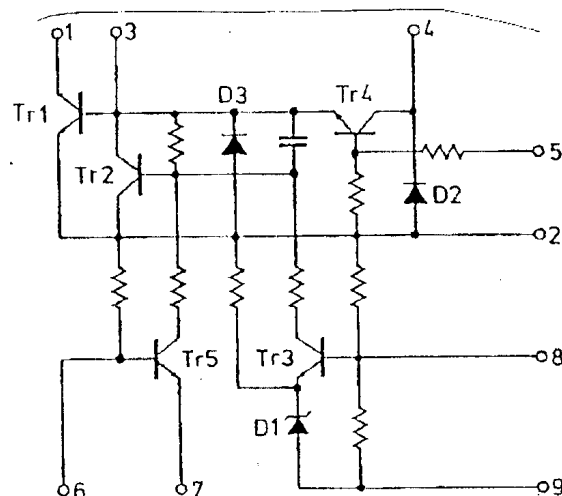
2. General:

2.1 Category: Hybrid IC

2.2 Construction: Hybrid IC based on the Silicon 3-layer Planar Transistor. Drive Circuit and Reference Voltage Circuit are built in.

2.3 Application: Switching Regulator for R.C.C. type TV.

2.4 Equivalent Circuit:



- | | |
|-------------------------------|------------|
| 1. Collector | Power |
| 2. Emitter/Common | Transistor |
| 3. Base | Transistor |
| 4. Drive | |
| 5. Control | |
| 6. Current Detector (B) | |
| 7. Earth/Current Detector (E) | |
| 8. V_{ref} Control | |
| 9. V_{ref} (-) | |

3. Appearance and Outline Drawings:

3.1 Appearance

The body shall be clean and shall not bear any stain, rust or flaw.

3.2 Outline Drawings

Refer to Page 3.

4. Marking

The type number and lot number shall be legitimately be marked by laser printing.
Refer to Page 3.

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5. Absolute Maximum Ratings (Ta=25°C)

Description	Symbol	Rating	Unit	Conditions
T _{r1} Collector-Emitter Voltage	V _{CEX}	500	V	※1
Applied Voltage of pin #2-#4	V ₂₋₄	12	V	
Applied Voltage of pin #2-#5	V ₂₋₅	12	V	
Applied Voltage of pin #7-#6	V ₇₋₆	5	V	
T _{r1} Collector Current	I _c (T _{r1})	10	A	Pulse 20 ※2
T _{r4} Collector Current	I _c (T _{r4})	500	mA	
D ₂ Forward Current	I _{IN} (D ₂)	500	mA	
Maximum Power Dissipation	P _D	3.2	W	Without Heatsink
		2.7		T _{GI} =100°C ※3
T _{r1} Junction Temperature	T _J	+150	°C	
Operating Frame Temperature	T _{G2}	-20~+125	°C	※4
Storage Temperature	T _{STG}	-30~+125	°C	
Maximum Output Current	I _O	1.7	A	V _O = 115V ※5

※1 : Reference value V_{CEO} = 400V Min.

※2 : Pulse condition is similar to what the bias ASO curve regulates.

※3 : T_{GI}: The temperature of resin which is below the Power Transistor.

※4 : T_{G2}: Denotes the temperature of internal frame. Recommended T_{G2}=100°C Max.

※5 : Please refer to the Application Circuit of P.4

6. Electrical Characteristic (Ta=25°C) ★:Characteristic of T₁

Description	Symbol	Rating	Unit	Condition
Reference Voltage	V _{REF}	41.8±0.3	V	I _{IN} =7mA, Circuit #1
Temperature Coefficient of Reference Voltage		±2 Typ.	mV/°C	T _c =-20~+100°C I _{IN} =7mA, Circuit #1
Collector Saturation Voltage★	V _{CE} (SAT)	0.5 Max.	V	I _c =6A, I _B =1.2A
Collector Cut-off Voltage ★	I _{CEX}	1 Max.	mA	V _{CE} =500V, V _{BE} =-1.5V
Base-Emitter Saturation Voltage ★	V _{BE} (SAT)	1.5 Max.	V	I _c =6A, I _B =1.2A
DC Current Gain ★	h _{FE}	15~40		V _{CE} =4V, I _C =1A
Thermal Resistance ★	θ _{J-G2}	0.7	°C/W	Between Junction and Internal Frame
Switching Time ★	t _{on}	10 Max.	μs	Circuit #2
	t _r	0.6 Max.	μs	Circuit #2

Date: July 25, 1990

Specification No.: SSE-17137E

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