

SANYO**STK5471**

Thick Film Hybrid IC

Voltage Regulator for VTR

TENTATIVE

Case Outline : 10 pins (See attached case outline drawing.)

Functions : Series regulator

Applications : Voltage regulator for VTR

Features : 3 outputs, output cutoff function

Maximum Ratings at $T_a = 25^\circ\text{C}$

		Vo1	Vo2	Vo3	unit	
Storage Temperature	T_{stg}	→	→	-30 to +105	$^\circ\text{C}$	
Operating Case Temperature	$T_c \text{ max}$	→	→	105	$^\circ\text{C}$	
Maximum DC Input Voltage	$V_{in}(\text{DC}) \text{ max}$	30	30	20	V	
Maximum Output Current*2	$I_o \text{ max}$	Average	1.5	1.5	0.5	A
		Peak	2.5	2.5	0.5	A
Junction Temperature	$T_j \text{ max}$	→	→	150	$^\circ\text{C}$	
Thermal Resistance	θ_{j-c}	4.5	4.5	10	$^\circ\text{C/W}$	

Electrical Characteristics at $T_a = 25^\circ\text{C}$

	Condition	Vo1	Vo2	Vo3	unit
Output Voltage Setting*1	①	12.0 ± 0.3	12.0 ± 0.1	5.3 ± 0.1	V
Ripple Voltage	②	20	5	5	mVp-p max
Output Cutoff Function	3V or greater ON				
	0.6V or less OFF	Without	Without	With	
Temperature Coefficient	③	→	→	0.02	$\% / ^\circ\text{C max}$
Line Regulation	④	80	35	5	mV/V max
Load Regulation	⑤	150	40	100	mV/A max
Minimum Input-Output Voltage Difference	⑥	1.5	1.5	2.7	V max

Condition ① : $V_{in}(\text{DC})1 = 16\text{V}$, $V_{in}(\text{DC})2 = 9\text{V}$, $I_{o1} = I_{o2} = 1\text{A}$, $I_{o3} = 0.5\text{A}$, ($I_{B1} = I_{B2} = 2\text{mA}$)Condition ② : $V_{in}(\text{DC})1 = 16\text{V}$, $V_{in}(\text{DC})2 = 9\text{V}$, $I_{o1} = I_{o2} = 1\text{A}$, $I_{o3} = 0.5\text{A}$, input ripple voltage = 1.5Vp-pCondition ③ : $V_{in}(\text{DC})1 = 14.5\text{V}$ to 22V, $V_{in}(\text{DC})2 = 8.1\text{V}$ to 11V, $I_{o1} = I_{o2} = 1\text{A}$, $I_{o3} = 0.5\text{A}$ Condition ④ : $V_{in}(\text{DC})1 = 16\text{V}$, $V_{in}(\text{DC})2 = 9\text{V}$, $I_{o1} = 0.3\text{A}$ to 1A, $I_{o2} = 0.1\text{A}$ to 1A, $I_{o3} = 0.1\text{A}$ to 0.5ACondition ⑤ : $I_{o1} = I_{o2} = 1\text{A}$, $I_{o3} = 0.5\text{A}$, $I_{B1} = I_{B2} = 2\text{mA}$

*1. Measurement must be made within 1 to 2sec. after input switch ON in the STK5471 Test Circuit.

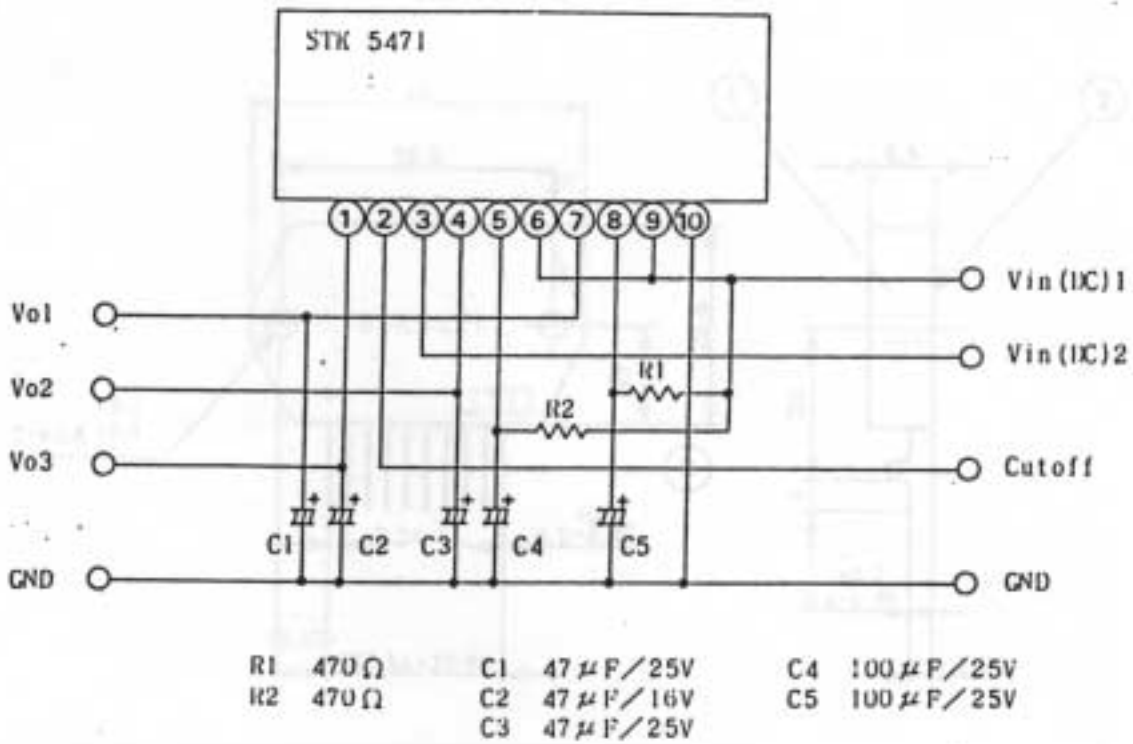
*2. Peak current : For 1.0sec. max ($V_{in}(\text{DC})1 = 15.7\text{V}$, $V_{in}(\text{DC})2 = 9\text{V}$)

Specifications and information herein are subject to change without notice.

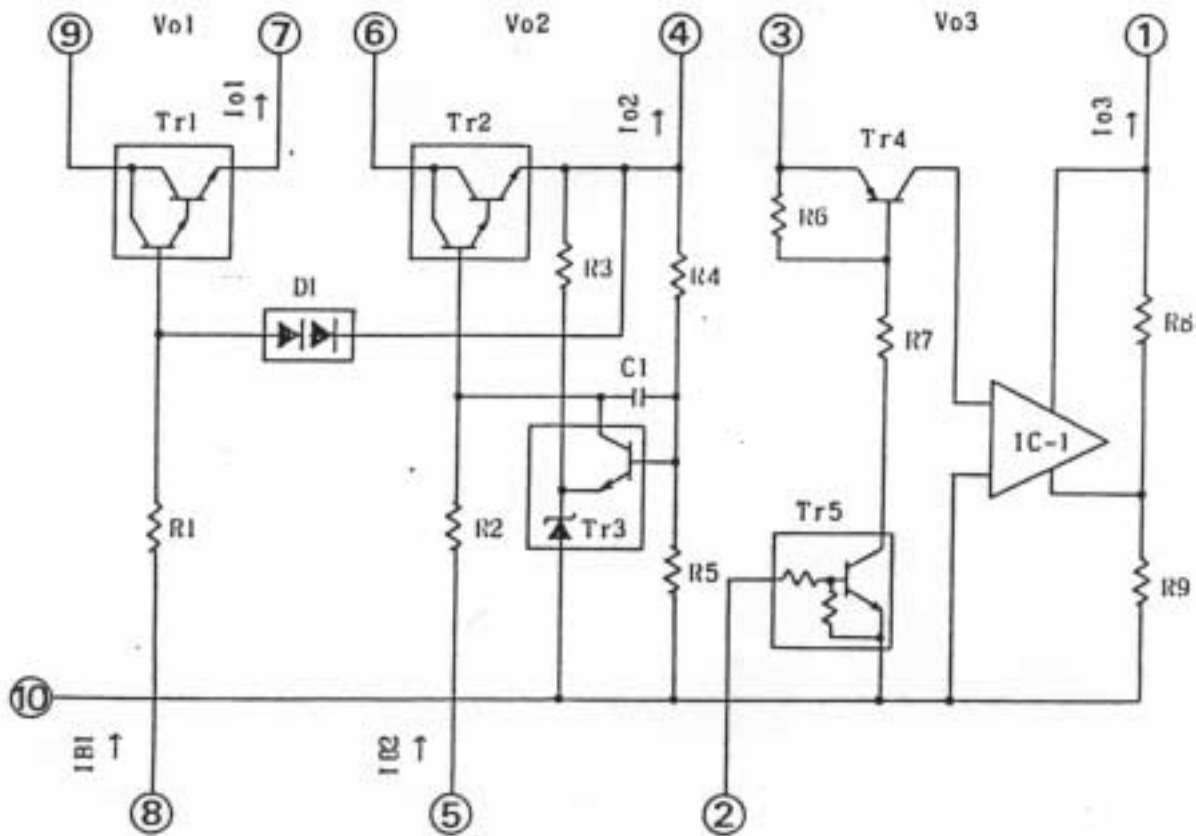
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STK5471 Test Circuit

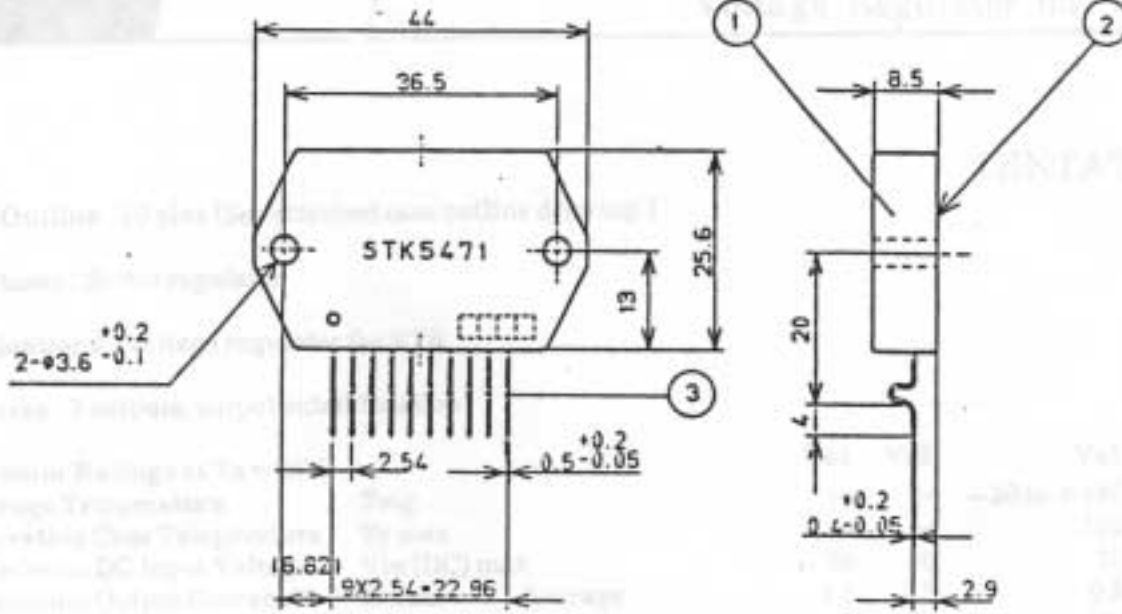


STK5471 Internal Equivalent Circuit



STK5471

Case Outline (unit: mm)



The application circuit diagrams and circuit constants herein are included as an example and provide no guarantee for designing equipment to be mass-produced. The information herein is believed to be accurate and reliable. However, no responsibility is assumed by SANYO for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

Supply Voltage	3V	2.8V to 3.6V	10V to 15V	5V to 15V
Supply Voltage	3V	2.8V	5V	5V to 15V
Input Current	2V or greater ON	—	—	—
Input Current	3.3V at 300μA OFF	—	—	—
Temperature Coefficient	3V	—	—	—
—	3V	—	—	—
—	3V	—	—	—
—	3V	—	—	—

- Condition 1: V_{DD}(CM) = 10V, V_{DD}(DC) = 3V, I_{DD} = I_{DD}(CM) + I_{DD}(DC), I_{DD} = 0.5A, 0.1V to 0.2V
- Condition 2: V_{DD}(CM) = 15V, V_{DD}(DC) = 2V, I_{DD} = I_{DD}(CM) + I_{DD}(DC), I_{DD} = 0.4A, 0.1V to 0.2V
- Condition 3: V_{DD}(CM) = 14.7V, V_{DD}(DC) = 2.2V, V_{DD}(DC) = 0.1V to 0.2V, I_{DD} = 0.4A, 0.1V to 0.2V
- Condition 4: V_{DD}(CM) = 14V, V_{DD}(DC) = 2.2V, V_{DD}(DC) = 0.1V to 0.2V, I_{DD} = 0.4A, 0.1V to 0.2V
- Condition 5: V_{DD}(CM) = 14.7V, V_{DD}(DC) = 2.2V, V_{DD}(DC) = 0.1V to 0.2V, I_{DD} = 0.4A, 0.1V to 0.2V

- 1) Measurement with 3-wire method. I_{DD} is 200μA when input is ON in the condition of the condition.
- 2) Test current for 1000ms, measurement time is 1V, V_{DD}(DC) = 0V.