

STR20000 Series

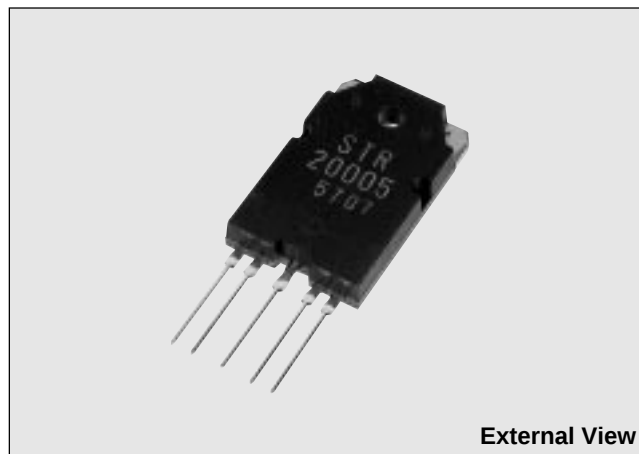
Switching Type — Chopper • Self Oscillation Type

Features

- Requires only 4 external components
- Small size and high efficiency
- Low switching noise
- Variable output voltage
- Use of Sanken semiconductors components ensures high reliability

Applications

- For power supplies in office equipment such as electronic typewriters, printers and copiers
- For power supplies in VCRs, personal CB radios (fixed stations), etc.



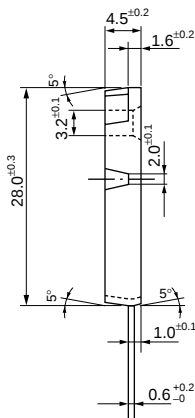
External View

■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
		STR20005	
DC Input Voltage	V _{IN}	45	V
DC Output Current	I _O	2.0 (pulse 3.0)	A
Power Dissipation	P _D	55 (T _C =25°C)	W
		13 (T _C =100°C)	
Operating Temperature	T _{OP}	-20 to +100	°C
Storage Temperature	T _{STG}	-20 to +125	°C
Thermal Resistance (junction-to-case)	R _{th(j-c)}	1.8	°C/W

■ Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Ratings			Unit
		STR20005			
		min	typ	max	
DC Input Voltage Range	V _{IN}	8		40	V
	Condition	I _o =1.0A			
Output Voltage	V _o	5.0	5.1	5.2	V
	Condition	V _{IN} =20V, I _o =1.0A			
Efficiency	η		72		%
	Condition	V _{IN} =20V, I _o =1.0A			
Line Regulation	ΔV _{OLINE}			50	mV
	Condition	V _{IN} =15 to 25V, I _o =1.0A			
Load Regulation	ΔV _{OLOAD}			100	mV
	Condition	V _{IN} =20V, I _o =0.5 to 1.5A			
Ripple Rejection	R _{REJ}		45		dB
	Condition	f=100 to 120Hz			
Switching Frequency	f		30		kHz
	Condition	V _{IN} =20V, I _o =1.0A			

[illegible]

Flammability: UL94V-0

- ① Output Voltage Adjustment
- ② Output Voltage Detection
- ③ Switching Output (backside of case)
- ④ Input
- ⑤ Ground

Note: Dimensions marked with * are measured at the roots of the leads.

The diagram shows a differential pair of NMOS transistors, Tr1 and Tr2, with PMOS load resistors R1 and R2. A current source R3 is connected to the gates of Tr1 and Tr2. The input MIC1 is connected to the gates of Tr1 and Tr2. The output MIC2 is connected to the drains of Tr1 and Tr2. A Start Circuit and Reference Voltage block are also shown.

RU3M forward voltage : 0.7V

Rise Characteristics

$T_a = 25^\circ\text{C}$

The graph plots Output Voltage V_o (V) on the y-axis (0 to 10) against Input Voltage V_{IN} (V) on the x-axis (0 to 20). Four curves are shown for different load currents: I_o (no load), 0A, 1A, and 2A. All curves show a linear increase in V_o as V_{IN} increases, starting from approximately 2V at $V_{IN} = 2V$. The curves reach a plateau at $V_o = 5V$. The plateau is reached at $V_{IN} \approx 6V$ for I_o and 0A, at $V_{IN} \approx 5.5V$ for 1A, and at $V_{IN} \approx 5V$ for 2A.

Input Voltage V_{IN} (V)	Output Voltage V_o (V) for I_o	Output Voltage V_o (V) for 0A	Output Voltage V_o (V) for 1A	Output Voltage V_o (V) for 2A
2	2.0	2.0	2.0	2.0
4	3.0	3.0	3.0	3.0
5	4.0	4.0	4.0	4.5
5.5	4.5	4.5	4.5	5.0
6	5.0	5.0	5.0	5.0
10	5.0	5.0	5.0	5.0
20	5.0	5.0	5.0	5.0

