

# STR2000 Series

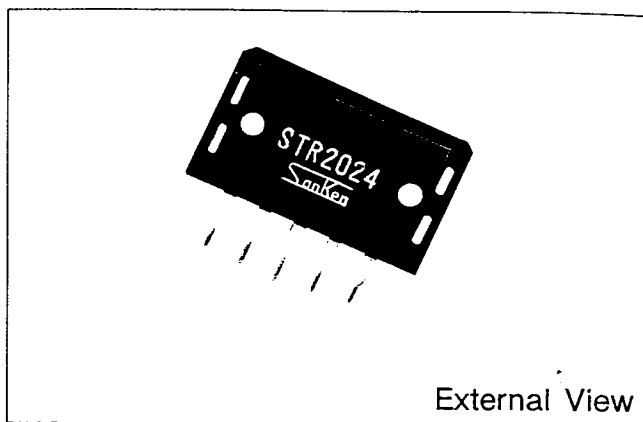
Switching Type — Chopper · Self Oscillation Type

## Features

- Requires very few of external parts
- Compact and highly efficient
- Low switching noise
- Variable output voltage
- High reliability due to use of SANKEN's semiconductor elements

## Applications

- For power supplies in office equipment such as electronic typewriters, printers, and copiers
- For power supplies in VTRs and personal CB radios (fixed station)



External View

## Absolute Maximum Ratings (Ta = 25°C)

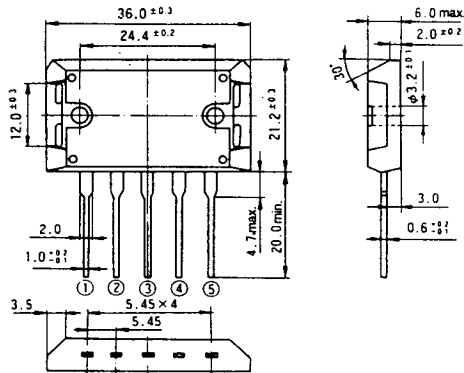
Description	Symbol	Ratings					Unit
		STR2005	STR2012	STR2013	STR2015	STR2024	
DC Input Voltage	V <sub>IN</sub>	45				50	V
DC Output Current	I <sub>o</sub>	2.0 (pulse 3.0)					A
Power Dissipation	P <sub>D</sub>	75 (T <sub>c</sub> = 25°C)					W
		15 (T <sub>c</sub> = 100°C)					
Operating Case Temperature	T <sub>c</sub>	-20 to +100					°C
Storage Temperature	T <sub>stg</sub>	-20 to +125					°C
Thermal Resistance (between junction and case)	R <sub>th(j-c)</sub>	1.25					°C/W

## Electrical Characteristics (Ta = 25°C)

Description	Symbol	Ratings															Unit
		STR2005			STR2012			STR2013			STR2015			STR2024			
		min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	
DC Input Voltage Range	V <sub>IN</sub>	11		40	18		45	19		45	21		45	30		50	V
	Condition	I <sub>o</sub> = 1.0A															
Output Voltage	V <sub>o</sub>	5.0	5.1	5.2	11.8	12.0	12.2	12.8	13.0	13.2	14.8	15.0	15.2	23.7	24.0	24.3	V
	Condition	V <sub>IN</sub> = 20V, I <sub>o</sub> = 1.0A			V <sub>IN</sub> = 24V, I <sub>o</sub> = 1.0A						V <sub>IN</sub> = 27V, I <sub>o</sub> = 1.0A			V <sub>IN</sub> = 35V, I <sub>o</sub> = 1.0A			
Efficiency	η		72			85			85			85			85	%	
	Condition	V <sub>IN</sub> = 20V, I <sub>o</sub> = 1.0A			V <sub>IN</sub> = 24V, I <sub>o</sub> = 1.0A						V <sub>IN</sub> = 27V, I <sub>o</sub> = 1.0A			V <sub>IN</sub> = 35V, I <sub>o</sub> = 1.0A			
Line Regulation	ΔV <sub>LINE</sub>			50			60			60			60			80	mV
	Condition	V <sub>IN</sub> = 15 to 25V, I <sub>o</sub> = 1.0A			V <sub>IN</sub> = 20 to 28V, I <sub>o</sub> = 1.0A						V <sub>IN</sub> = 23 to 31V, I <sub>o</sub> = 1.0A			V <sub>IN</sub> = 30 to 40V, I <sub>o</sub> = 1.0A			
Load Regulation	ΔV <sub>LOAD</sub>			100			100			100			100			100	mV
	Condition	V <sub>IN</sub> = 20V, I <sub>o</sub> = 0.5 to 1.5A			V <sub>IN</sub> = 24V, I <sub>o</sub> = 0.5 to 1.5A						V <sub>IN</sub> = 27V, I <sub>o</sub> = 0.5 to 1.5A			V <sub>IN</sub> = 35V, I <sub>o</sub> = 0.5 to 1.5A			
Ripple Rejection	R <sub>REJ</sub>		45			45			45			45			45	dB	
	Condition	f = 100 to 120Hz															
Oscillation Frequency	f <sub>osc</sub>		25			25			25			25			25	kHz	
	Condition	V <sub>IN</sub> = 20V, I <sub>o</sub> = 1.0A			V <sub>IN</sub> = 24V, I <sub>o</sub> = 1.0A						V <sub>IN</sub> = 27V, I <sub>o</sub> = 1.0A			V <sub>IN</sub> = 35V, I <sub>o</sub> = 1.0A			

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## Outline Drawing/Pin Connections (unit: mm)



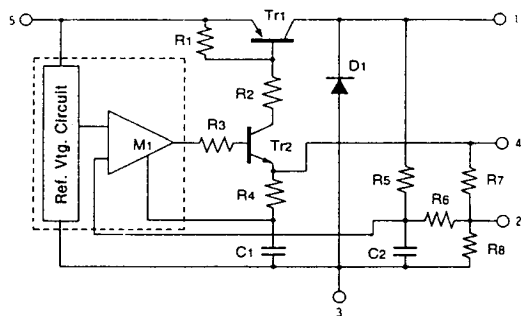
**Plastic Mold Package Type**  
**Flammability: UL94V-O or equivalent**

### Pin Connections

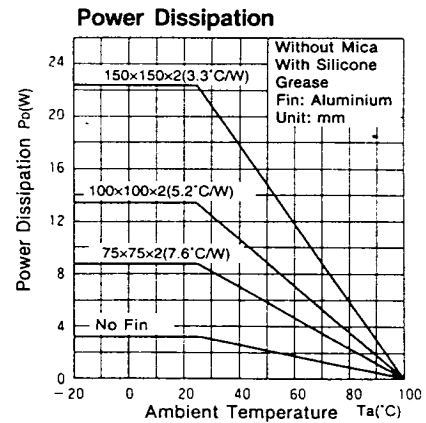
- ① Switching Output (backside of case)
- ② Fixed Voltage Adjustment
- ③ Ground
- ④ Output Voltage Detection
- ⑤ Input

Weight: Approx. 14.5 g

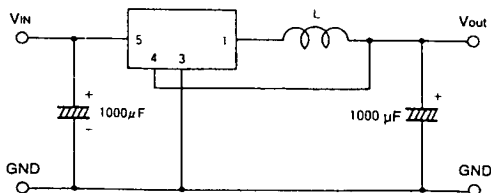
## Equivalent Circuit



## Typical Operating Characteristics

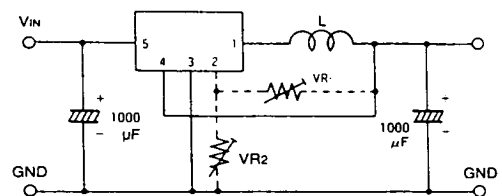


## External Circuit



Type	Inductance L
STR2005	200 µH
STR2012	300 µH
STR2013	300 µH
STR2015	350 µH
STR2024	400 µH

## Output Voltage Variable Circuit



VR1 : Vout down  
 VR2 : Vout up