

# STR2000 Series

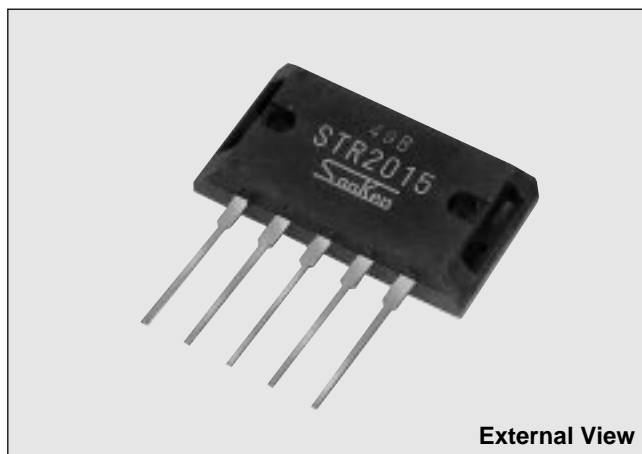
**Switching Type** — Chopper • Self Oscillation Type

## Features

- Requires only 3 external components
- Small size and high efficiency
- Low switching noise
- Variable output voltage
- Use of SANKEN's semiconductor elements ensures high reliability

## Applications

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



External View

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

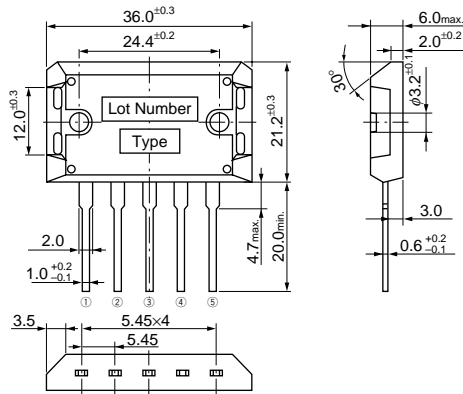
Parameter	Symbol	Ratings					Unit
		STR2005	STR2012	STR2013	STR2015	STR2024	
DC Input Voltage	V <sub>IN</sub>	45				50	V
DC Output Current	I <sub>o</sub>	2.0 (pulse 3.0)					A
Power Dissipation	P <sub>D</sub>	75 (T <sub>C</sub> =25°C)					W
		15 (T <sub>C</sub> =100°C)					
Operating Temperature	T <sub>op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

## ■ Electrical Characteristics (Ta=25°C)

Parameter	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>OLINE</sub>			50			60			60			60			60	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>OLOAD</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															
Switching Frequency	f		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			

# STR2000 Series

## ■ Outline Drawing/Terminal Connections (unit:mm)



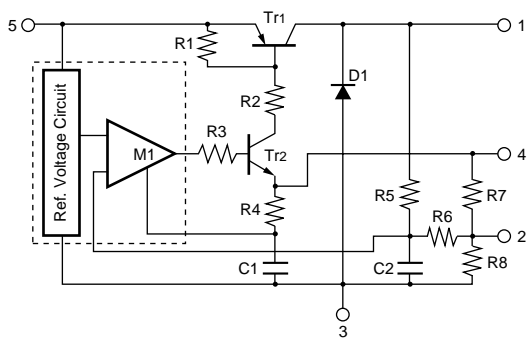
Plastic Mold Package Type  
Flammability: UL94V-0

### Terminal Connections

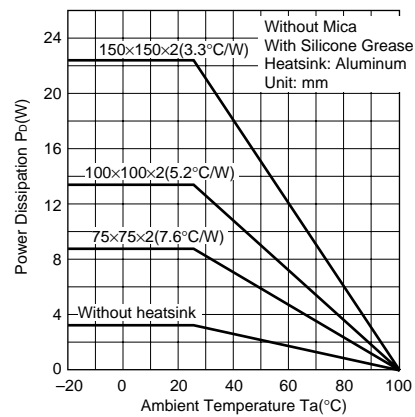
- ① Switching Output (backside of case)
- ② Output Voltage Adjustment
- ③ Ground
- ④ Output Voltage Detection
- ⑤ Input

Weight: Approx. 14.5g

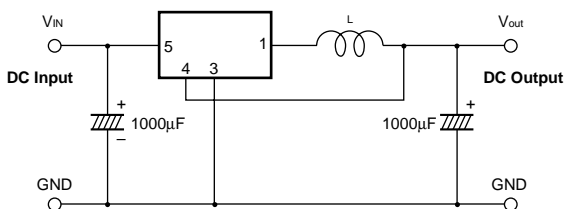
## ■ Block Diagram



## ■ Ta-PD Characteristics

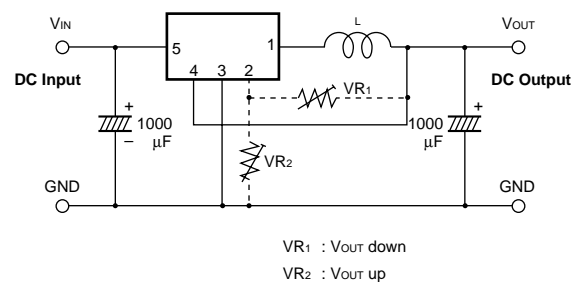


## ■ Standard External Circuit



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

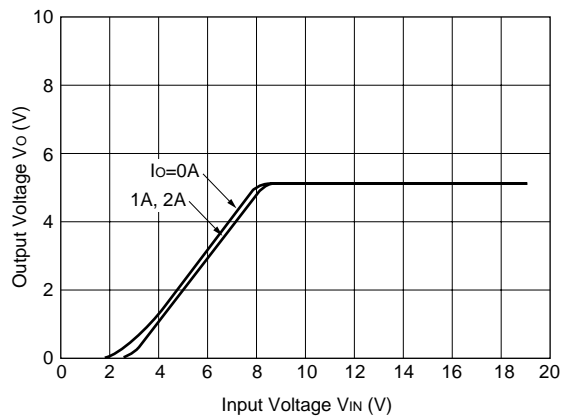
## ■ Variable Output Voltage Circuit



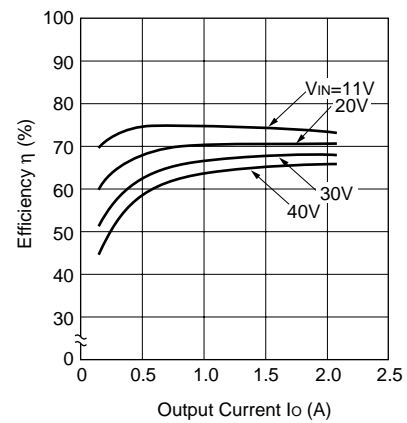
## STR2000 Series Typical Characteristics ( $T_a=25^\circ\text{C}$ )

### ■ STR2005

Rise Characteristics

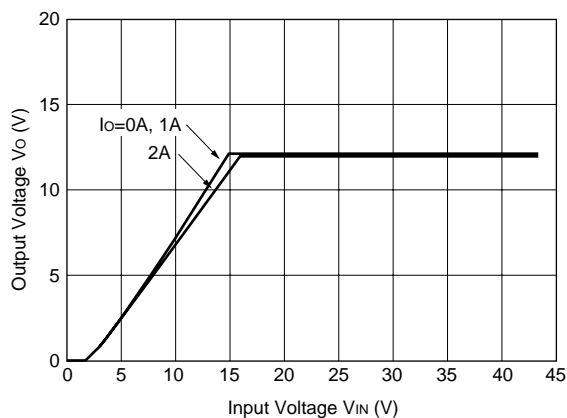


Efficiency Characteristics

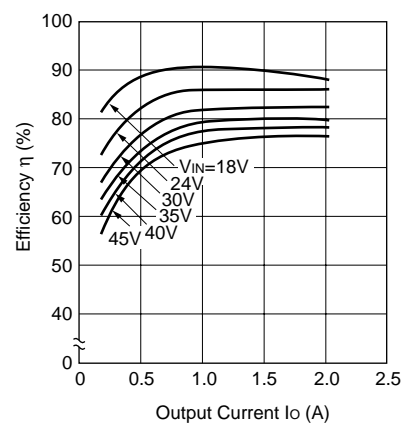


### ■ STR2012

Rise Characteristics

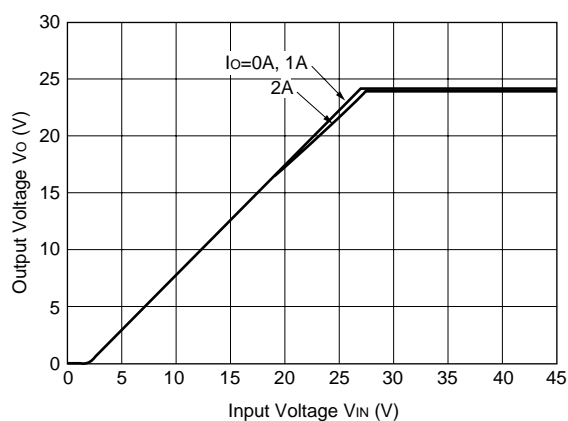


Efficiency Characteristics



### ■ STR2024

Rise Characteristics



Efficiency Characteristics

