STR2000 Series

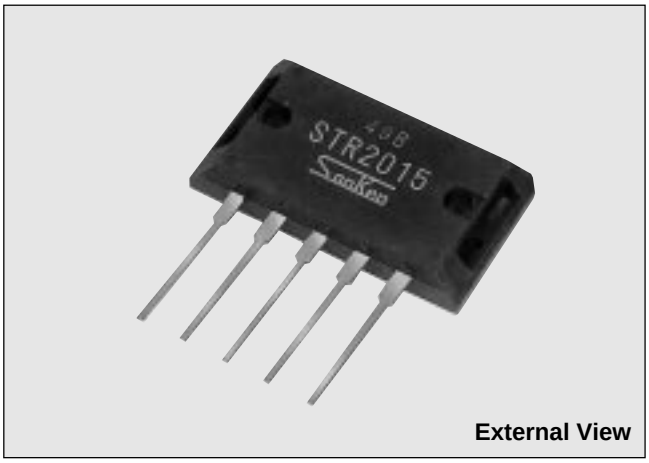
Switching Type —— Chopper • Self Oscillation Type

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

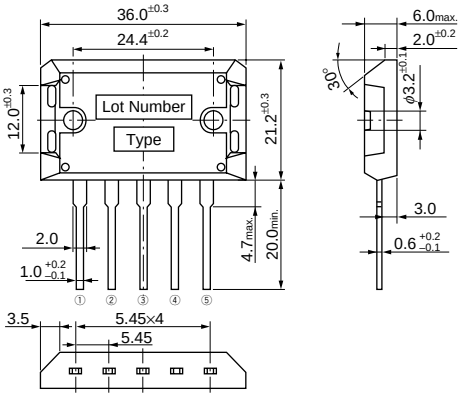
■Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings					Unit
		STR2005	STR2012	STR2013	STR2015	STR2024	
DC Input Voltage	V_{IN}	45				50	V
DC Output Current	I_O	2.0 (pulse 3.0)					A
Power Dissipation	P_D	75 (T_C=25°C)					W
		15 (T_C=100°C)					
Operating Temperature	Top	–20 to +100					°C
Storage Temperature	Tstg	–20 to +125					°C
Thermal Resistance (junction-to-case)	Rth(j-c)	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_{IN}	11		40	18		45	19		45	21		45	30		50	V
	Condition	I_O=1.0A															
Output Voltage	V_O	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_{IN}=20V, I_O=1.0A			V_{IN}=24V, I_O=1.0A						V_{IN}=27V, I_O=1.0A			V_{IN}=35V, I_O=1.0A			
Efficiency	η		72			85			85			85			85		%
	Condition	V_{IN}=20V, I_O=1.0A			V_{IN}=24V, I_O=1.0A						V_{IN}=27V, I_O=1.0A			V_{IN}=35V, I_O=1.0A			
Line Regulation	ΔV_{OLINE}			50			60			60			60			60	mV
	Condition	V_{IN}=15 to 25V, I_O=1.0A			V_{IN}=20 to 28V, I_O=1.0A						V_{IN}=23 to 31V, I_O=1.0A			V_{IN}=30 to 40V, I_O=1.0A			
Load Regulation	ΔV_{OLOAD}			100			100			100			100			100	mV
	Condition	V_{IN}=20V, I_O=0.5 to 1.5A			V_{IN}=24V, I_O=0.5 to 1.5A						V_{IN}=27V, I_O=0.5 to 1.5A			V_{IN}=35V, I_O=0.5 to 1.5A			
Ripple Rejection	R_{REJ}		45			45			45			45			45		dB
	Condition	f=100 to 120Hz															
Switching Frequency	f		25			25			25			25			25		kHz
	Condition	V_{IN}=20V, I_O=1.0A			V_{IN}=24V, I_O=1.0A						V_{IN}=27V, I_O=1.0A			V_{IN}=35V, I_O=1.0A			

■Outline Drawing/Terminal Connections (unit:mm)



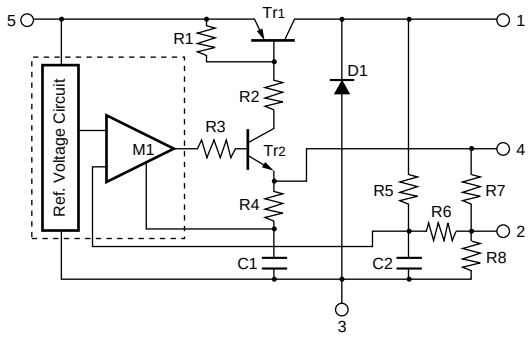
Plastic Mold Package Type
Flammability: UL94V-0

Terminal Connections

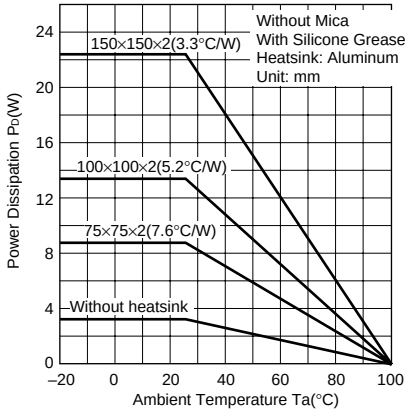
① Switching Output (backside of case)
② Output Voltage Adjustment
③ Ground
④ Output Voltage Detection
⑤ Input

Weight: Approx. 14.5g

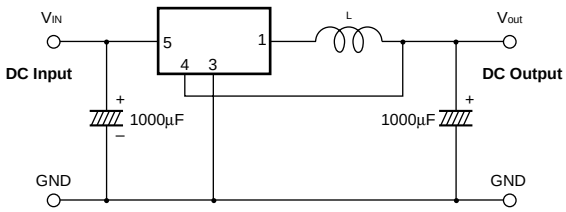
■Block Diagram



■Ta-PD Characteristics

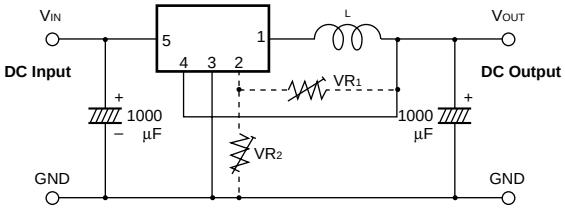


■Standard External Circuit



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

■Variable Output Voltage Circuit

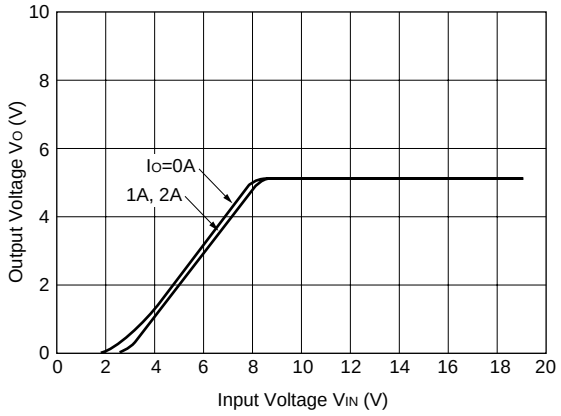


VR1 : VOUT down
VR2 : VOUT up

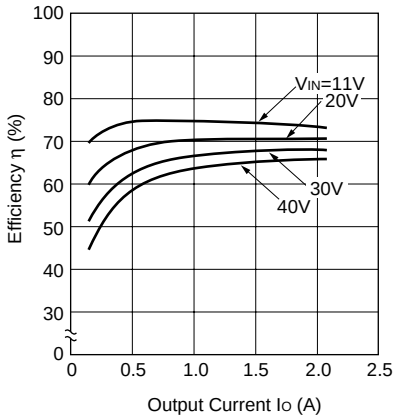
STR2000 Series Typical Characteristics (Ta=25°C)

■STR2005

Rise Characteristics

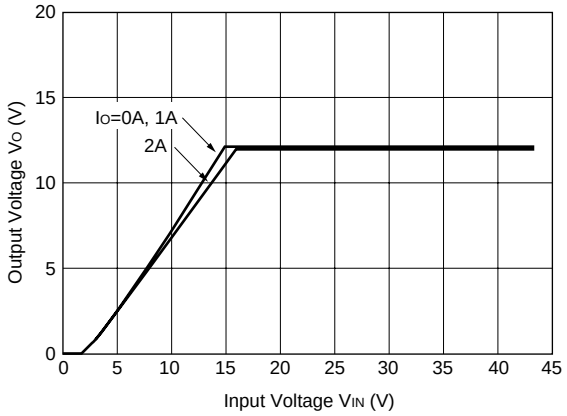


Efficiency Characteristics

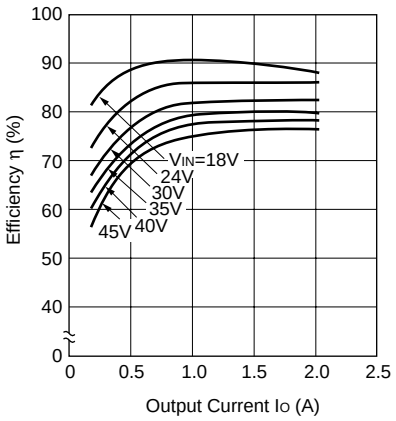


■STR2012

Rise Characteristics

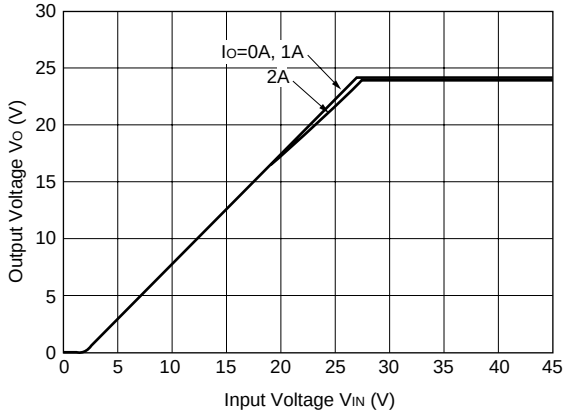
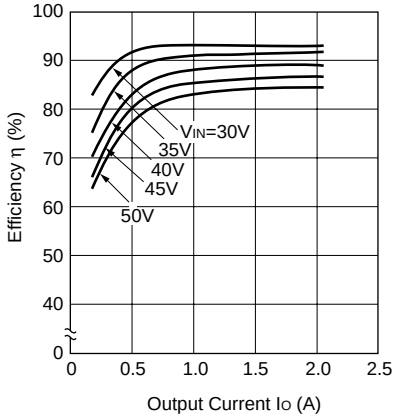


Efficiency Characteristics



■STR2024

Rise Characteristics



Efficiency Characteristics