



# STK7561J

## Chopper Type Parallel 2-Output Voltage Regulator

### Applications

- Serial printers, line printers, office automation equipment.
- Floppy disk units, portable VCRs.

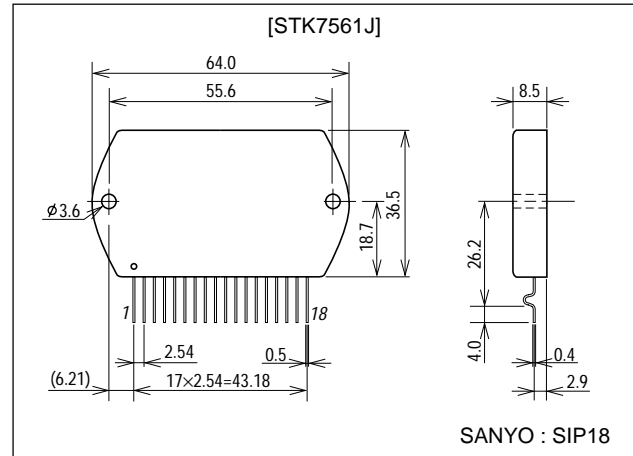
### Features

- 2 outputs for microcomputer power supply (5V) and motor drive power supply (12V) and capable of delivering 2 regulated voltage outputs form 1 rectifier.
- Chopper type permitting high efficiency, and separate excitation type oscillator common to 2 outputs causing no beat trouble.
- Independent overcurrent protectors for 2 outputs (Foldback characteristics)
- External signal-used output cutoff function (Output 2).
- High-precision setting of output voltage eliminating the need to use a variable resistor for adjustment.
- One input/output GND line making it possible for other negative voltage to be used jointly.
- A negative voltage regulator (-5V, -12V, etc.) can be connected externally.
- Output voltage, output current constituting a series.

### Package Dimensions

unit:mm

4050



### Specifications

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

Parameter	Symbol	Conditions	Output1	Output2	Unit
Maximum DC Input Voltage	$V_{in(DC) \max}$		50	50	V
Maximum Output Current	$I_O \max$	$A_v$	5	2	A
		$P_k$	6	4	A
Thermal Resistance	$\theta_{j-c}$		2.7	4.7	$^\circ\text{C/W}$
Operating Case Temperature	$T_c$			105	$^\circ\text{C}$
Junction Temperature	$T_j$			150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$			-30 to +105	$^\circ\text{C}$

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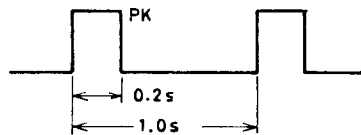
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## Operating Characteristics at $T_a = 25^\circ\text{C}$

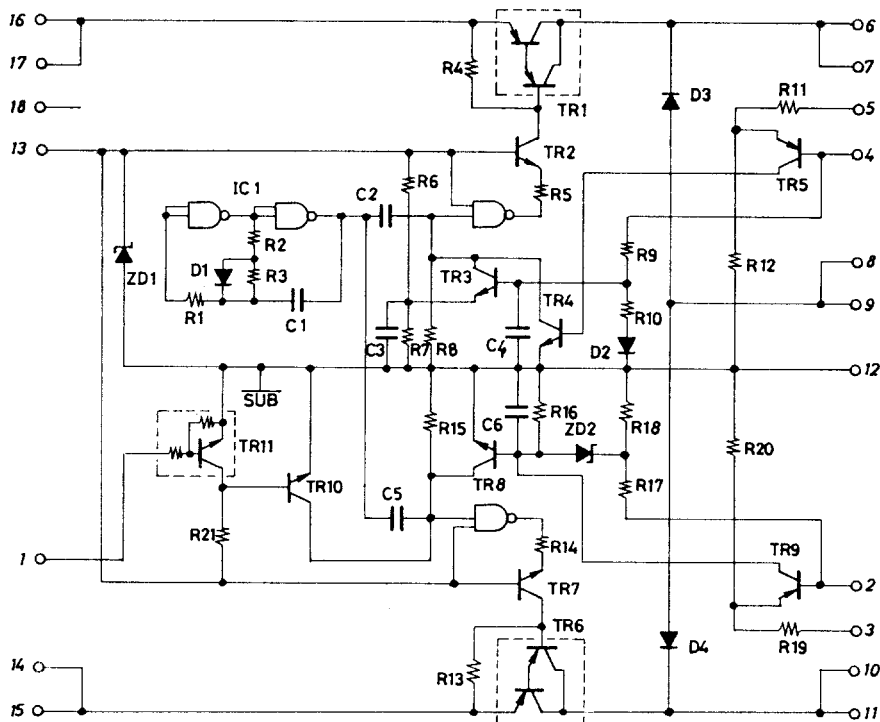
Parameter	Conditions	Output 1			Output 2			Unit
		Ratings			Ratings			
		min	typ	max	min	typ	max	
Output Voltage	Condition 1	4.9	5.0	5.1	11.8	12.0	12.2	V
Ripple Voltage	Condition 1			5			20	mVrms
Line Regulation	Condition 2			25			20	mV/V
Load Regulation	Condition 3			80			40	mV/A
Overcurrent Trip Start Current	Condition 4	6			4			A
Efficiency	Condition 5	70% typ at outputs 1, 2 operating mode						
Operating Frequency	Condition 1	35kHz typ at outputs 1, 2 operating mode						
Cutoff Voltage	Condition 1				3V or more ON			
					1V or less OFF			
Temperature Coefficient	Condition 1				-0.025		-0.01	%/°C

(Note) Condition 1 :  $V_{in(DC)}=25\text{V}, 5\text{V1A}, 12\text{V1A}$   
 Condition 2 :  $V_{in(DC)}=20\text{ to }30\text{V}, 5\text{V1A}, 12\text{V1A}$   
 Condition 3 Output 1 :  $V_{in(DC)}=25\text{V}, 5\text{V1A to }6\text{A}$   
 Output 2 :  $V_{in(DC)}=25\text{V}, 12\text{V1 to }4\text{A}$   
 Condition 4 :  $V_{in(DC)}=25\text{V}$   
 Condition 5 :  $V_{in(DC)}=25\text{V}, 5\text{V2.5A}, 12\text{V1A}$

## Definition of Peak Current



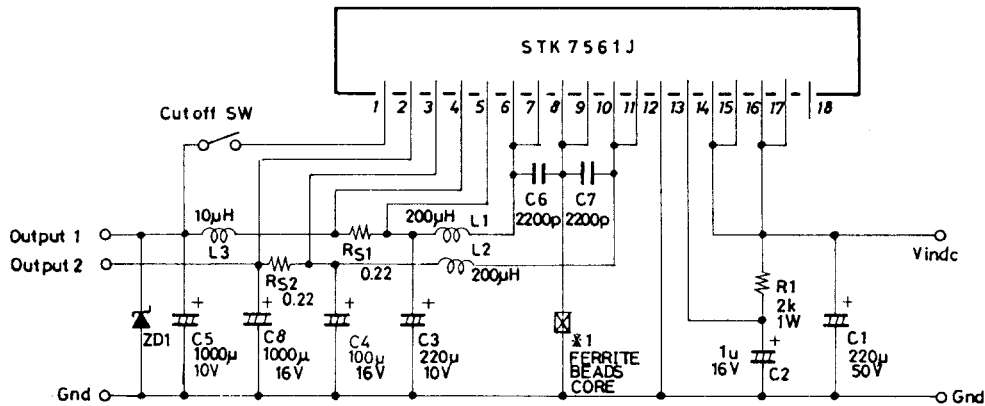
## Equivalent Circuit



- Since pin 12 is grounded to the substrate, noise may be affected when a heat sink is connected to the FG (Frame Ground), GND line, etc.  
 In this case, bring the heat sink to floating state or use an insulating sheet.

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## Test Circuit



ZD1 : Vz ≒ 6.8V/D.H.D. type (for overvoltage protection)  
Unit (resistance: Ω, capacitance: F)

- \* The N.C. pin (pin 18) must not be used as a relay pin for other line, pin.
- \* Pins connected inside the IC (6-7, 8-9, 10-11, 14-15, 16-17) must be also connected on the printed circuit board.

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