



# STK4121V

## AF Power Amplifier (Split Power Supply) (15 W + 15 W min, THD = 0.08 %)

### Features

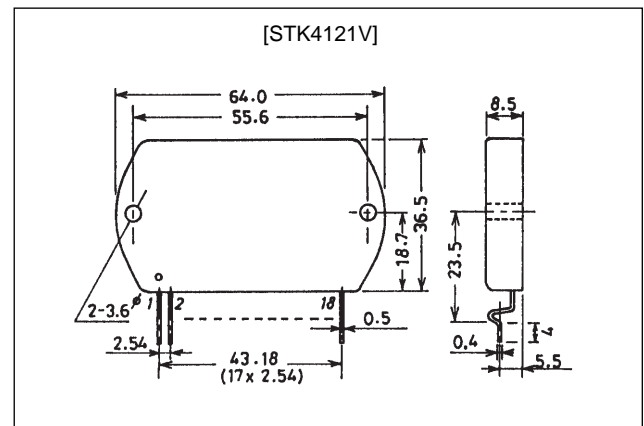
- Built-in muting circuit cuts off various kinds of pop noises.
- Current mirror circuit provides low distortion (THD = 0.08%).
- Pin compatible with the STK4102II series, forming a series of products with output powers from 15 W/ch to 120 W/ch.

Specified Transformer Power Supply (RP-22 equivalent)

### Package Dimensions

unit: mm

4040



### Specifications

#### Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC}$ max		$\pm 32$	V
Thermal resistance	$\theta_{j-c}$		2.6	°C/W
Junction temperature	$T_j$ max		150	°C
Operating substrate temperature	$T_c$		125	°C
Storage temperature	$T_{stg}$		-30 to +125	°C
Available time for load short circuit	$t_s$	$V_{CC} = \pm 21.5$ V, $R_L = 8 \Omega$ , $f = 50$ Hz, $P_O = 15$ W	2	s

#### Recommended Operating Conditions at Ta = 25°C

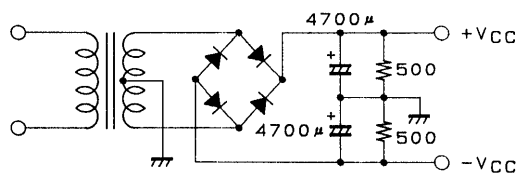
Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	$V_{CC}$		$\pm 21.5$	V
Load resistance	$R_L$		8	$\Omega$

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### Operating Characteristics

at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = \pm 21.5\text{ V}$ ,  $R_L = 8\ \Omega$ ,  $R_g = 600\ \Omega$ ,  $V_G = 40\ \text{dB}$ ,  $R_L$ : non-inductive load

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	$I_{CCO}$	$V_{CC} = \pm 26\text{ V}$	20	40	100	mA
Output power	$P_O(1)$	THD = 0.08%, $f = 20\text{ Hz to } 20\text{ kHz}$	15			W
	$P_O(2)$	$V_{CC} = \pm 18\text{ V}$ , THD = 0.2%, $R_L = 4\ \Omega$ , $f = 1\text{ kHz}$	15			W
Total harmonic distortion	THD	$P_O = 1.0\text{ W}$ , $f = 1\text{ kHz}$			0.08	%
Frequency response	$f_L, f_H$	$P_O = 1.0\text{ W}$ , $+0_{-3}\text{ dB}$		20 to 50 k		Hz
Input impedance	$r_i$	$P_O = 1.0\text{ W}$ , $f = 1\text{ kHz}$		55		k $\Omega$
Output noise voltage	$V_{NO}$	$V_{CC} = \pm 26\text{ V}$ , $R_g = 10\text{ k}\Omega$			1.2	mVrms
Neutral voltage	$V_N$	$V_{CC} = \pm 26\text{ V}$	-70	0	+70	mV
Muting voltage	$V_M$		-2	-5	-10	V



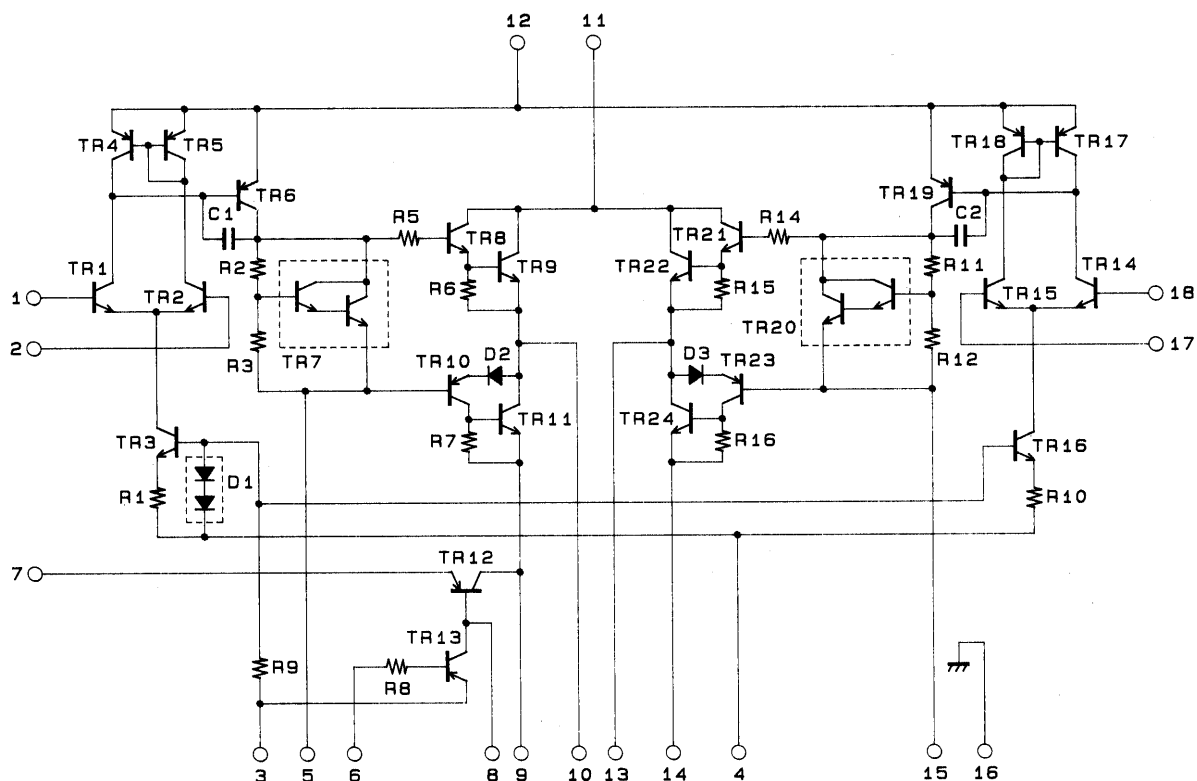
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Unit ( resistance:  $\Omega$ , capacitance:F)

#### Notes

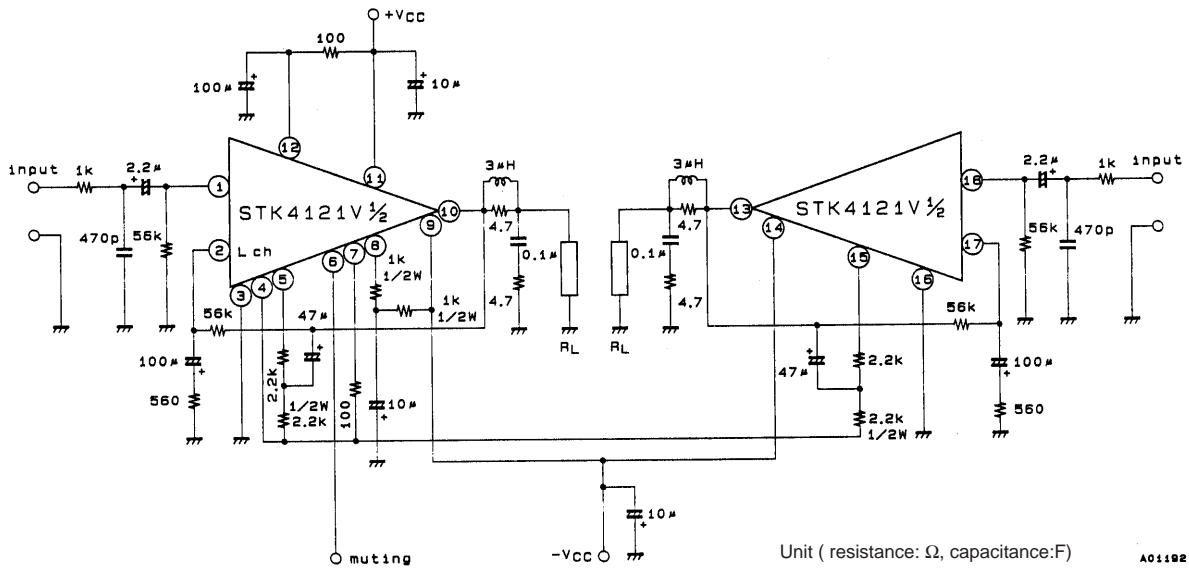
- Use a constant voltage power supply for the test power supply unless otherwise noted.
- Use the transformer power supply shown in the figure above when measuring the available time for load short circuit and the output noise voltage.
- The output noise voltage is the peak value measured with an averaging rms scale volt meter (VTVM). A 50 Hz AC stabilized power supply should be used to eliminate the effects of AC primary line flicker noise when an AC power supply is used.

#### Equivalent Circuit



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Sample Application Circuit: 15 W (minimum) 2-channel AF power amplifier



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