



# STK4131V

## AF Power Amplifier (Split Power Supply) (20 W + 20 W min, THD = 0.08%)

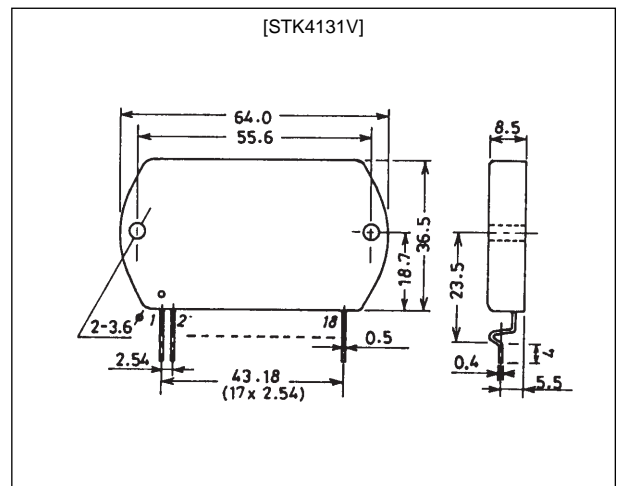
### Features

- 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.

### Package Dimensions

unit : mm

4040



### Specifications

#### Maximum Ratings at Ta = 25°C

Parameter	Symbol	Condition	Rating	Unit
Maximum supply voltage	$V_{CC \text{ max}}$		$\pm 37$	V
Thermal resistance	$\theta_{j-c}$		2.6	°C/W
Junction temperature	$T_j \text{ max}$		150	°C
Operating case temperature	$T_c$		125	°C
Storage temperature	$T_{stg}$		-30 to +125	°C
Available time for load shorted	$t_s$	$V_{CC} = \pm 24.5 \text{ V}, R_L = 8 \Omega, f = 50 \text{ Hz}, P_O = 20 \text{ W}$	2	s

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

Parameter	Symbol	Condition	Rating	Unit
Recommended supply voltage	$V_{CC}$		$\pm 24.5$	V
Load resistance	$R_L$		8	$\Omega$

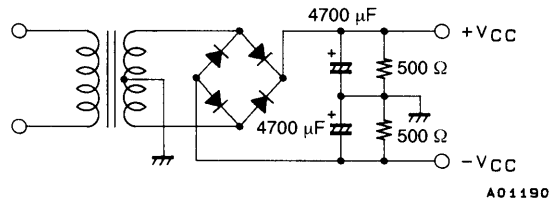
#### Operating Characteristics

at Ta = 25°C,  $V_{CC} = \pm 24.5 \text{ V}, R_L = 8 \Omega, R_g = 600 \Omega, V_G = 40 \text{ dB}, R_L$ : non-inductive load

Parameter	Symbol	Condition	Rating			Unit
			min	typ	max	
Quiescent current	$I_{CCO}$	$V_{CC} = \pm 29.5 \text{ V}$	20	40	100	mA
Output power	$P_O (1)$	THD = 0.08%, $f = 20 \text{ Hz to } 20 \text{ kHz}$	20			W
	$P_O (2)$	$V_{CC} = \pm 21.5 \text{ V}, \text{THD} = 0.2\%, R_L = 4 \Omega, f = 1 \text{ kHz}$	20			W
Total harmonic distortion	THD	$P_O = 1 \text{ W}, f = 1 \text{ kHz}$			0.08	%
Frequency response	$f_L, f_H$	$P_O = 1 \text{ W}, \begin{matrix} +0 \\ -3 \end{matrix} \text{ dB}$		20 to 50 k		Hz
Input resistance	$r_i$	$P_O = 1 \text{ W}, f = 1 \text{ kHz}$		55		k $\Omega$
Output noise voltage	$V_{NO}$	$V_{CC} = \pm 29.5 \text{ V}, R_g = 10 \text{ k}\Omega$			1.2	mVrms
Neutral voltage	$V_N$	$V_{CC} = \pm 29.5 \text{ V}$	-70	0	+70	mV
Muting voltage	$V_M$		-2	-5	-10	V

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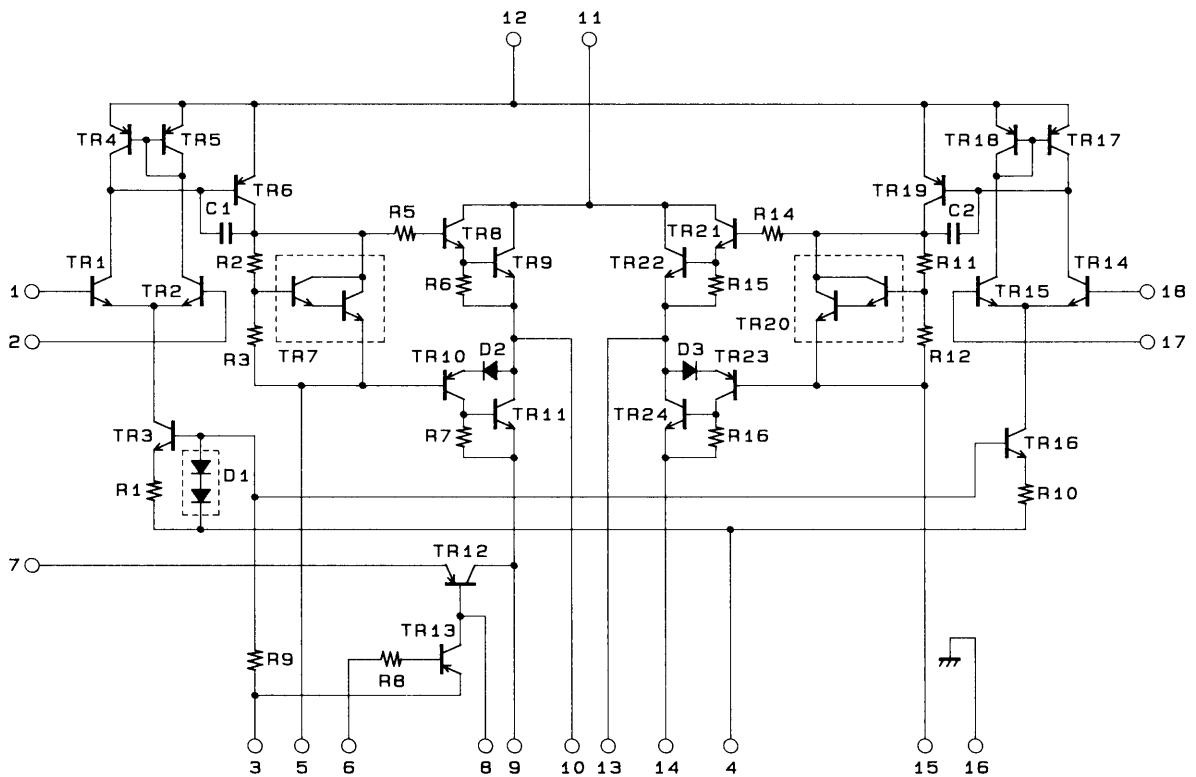


**Specified Transformer Power Supply (RP-25 equivalent)**

**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 shorted 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.

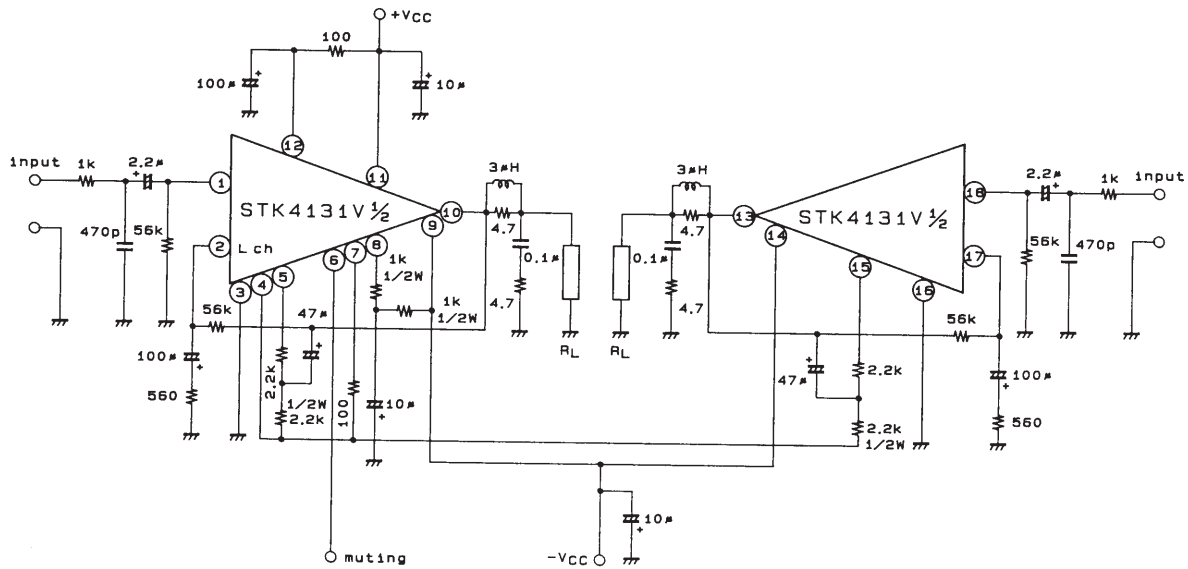
**Equivalent Circuit**



A01191

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### Sample Application Circuit: 20 W (minimum) 2-channel AF power amplifier



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

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