



STK4034X

AF Power Amplifier (Split Power Supply) (45 W min, THD = 0.008%)

Features

- Miniature package allows audio sets to be made slimmer.
- Pin-compatible amplifiers with outputs of 30 to 100 W are available.
- Facilitates thermal design of slim stereo sets by distributing the heat dissipating ICs in the set.
- Current mirror circuit application reduces distortion to 0.008%.
- Supports the design of supplementary electronic circuits (thermal shutdown, load short protection, and pop noise muting at power on and off).

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC\text{ max}}$		± 50	V
Thermal resistance	θ_{j-c}		1.8	$^\circ\text{C/W}$
Junction temperature	T_j		150	$^\circ\text{C}$
Operating substrate temperature	T_c		125	$^\circ\text{C}$
Storage temperature	T_{stg}		-30 to $+125$	$^\circ\text{C}$
Available time for load shorted	t_{S^*}	$V_{CC} = \pm 35\text{ V}$, $R_L = 8\ \Omega$, $f = 50\text{ Hz}$, $P_O = 45\text{ W}$	2	s

Note: Use a constant-voltage power supply as the test power supply unless otherwise specified.

* Use the transformer power supply shown on the next page when measuring the available time for load shorted and the output noise voltage.

Recommended Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		± 35	V
Load resistance	R_L		8	Ω

Operating Characteristics

at $T_a = 25^\circ\text{C}$, $V_{CC} = \pm 35\text{ V}$, $R_L = 8\ \Omega$, $V_G = 40\text{ dB}$, $R_g = 600\ \Omega$, 100 k LPF ON, R_L (noninductive load)

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	I_{CCO}	$V_{CC} = \pm 41\text{ V}$	15		120	mA
Output power	$P_O(1)$	THD = 0.008%, $f = 20\text{ Hz}$ to 20 kHz	45			W
	$P_O(2)$	$V_{CC} = \pm 31\text{ V}$, THD = 0.04%, $R_L = 4\ \Omega$, $f = 1\text{ kHz}$	50			
Total harmonic distortion	THD	$P_O = 1.0\text{ W}$, $f = 1\text{ kHz}$			0.008	%
Frequency response	f_L, f_H	$P_O = 1.0\text{ W}$, $+0_{-3}\text{ dB}$		20 to 50 k		Hz
Input resistance	r_i	$P_O = 1.0\text{ W}$, $f = 1\text{ kHz}$		55		k Ω
Output noise voltage	V_{NO}^*	$V_{CC} = \pm 41\text{ V}$, $R_g = 10\text{ k}\Omega$			1.2	mVrms
Neutral voltage	V_N	$V_{CC} = \pm 41\text{ V}$	-70	0	+70	mV

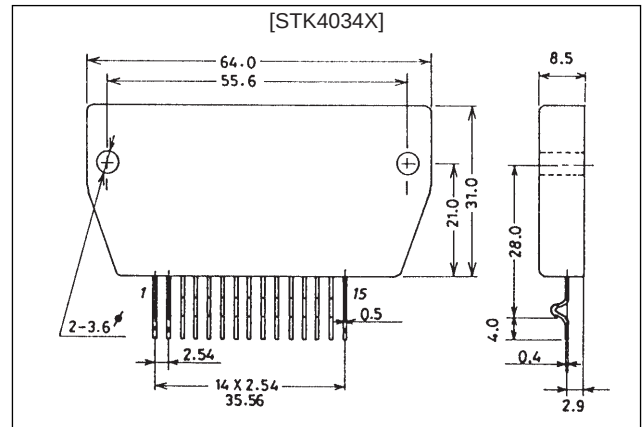
Note: Use a constant-voltage power supply as the test power supply unless otherwise specified.

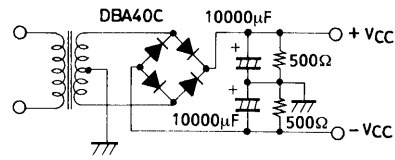
* The output noise voltage is the peak value measured with an averaging rms scale volt meter. The noise voltage waveform should not include pulse noise.

Package Dimensions

unit: mm

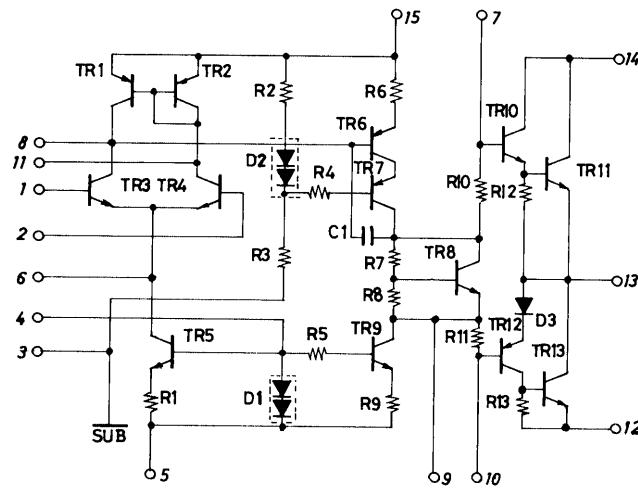
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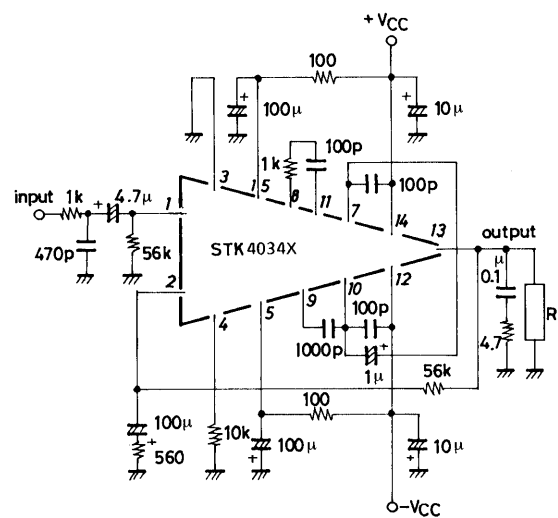


**Specified Transformer Power Supply
(MG-200 equivalent)**

Equivalent Circuit



Sample Application Circuit: Single Channel 45 W (minimum) AF Power Amplifier



Unit (resistance: Ω, capacitance: F)

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