



# 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	$V_{CC\text{ max}}$		$\pm 50$	V
Thermal resistance	$\theta_{j-c}$		1.8	$^\circ\text{C}/\text{W}$
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	$V_{CC}$		$\pm 35$	V
Load resistance	$R_L$		8	$\Omega$

### 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 $\Omega$
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

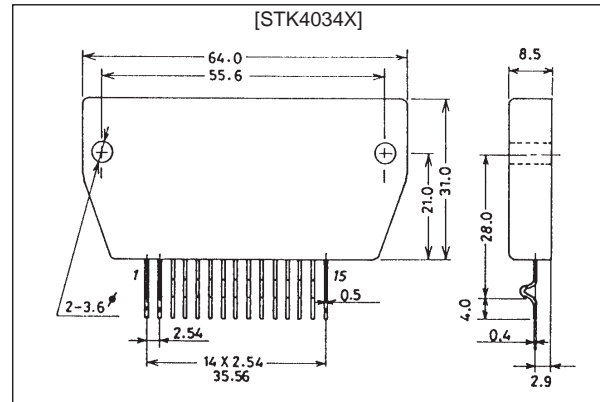
Note: Use a constant-voltage power supply as the test power supply unless otherwise specified.

\* 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.

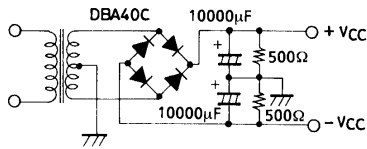
### Package Dimensions

unit: mm

4062

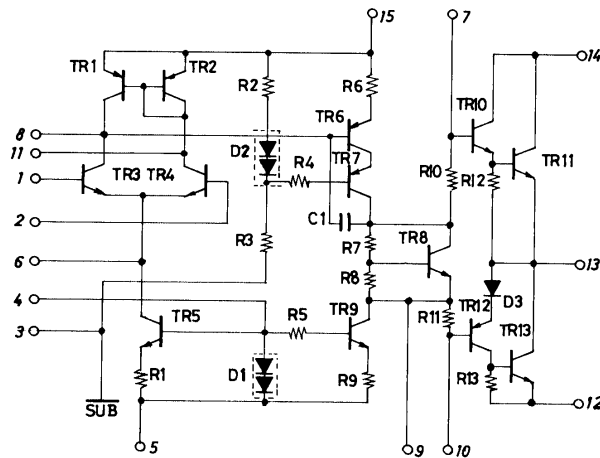


# STK4034X

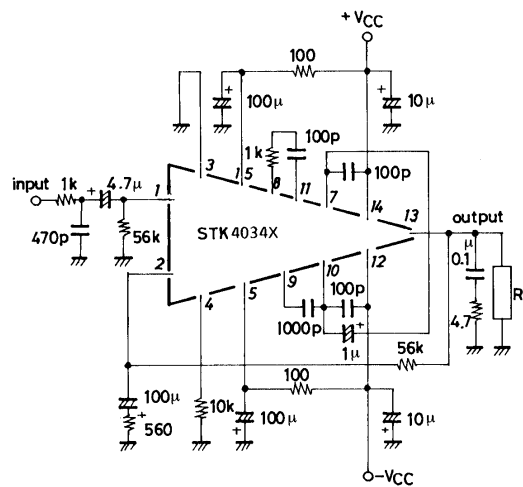


Specified Transformer Power Supply  
(MG-200 equivalent)

## Equivalent Circuit



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



Unit (resistance: Ω, capacitance: F)

- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
  - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
  - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of October, 1996. Specifications and information herein are subject to change without notice.