

**STK4038X**

## AF Power Amplifier (Split Power Supply) (60W min, THD = 0.008%)

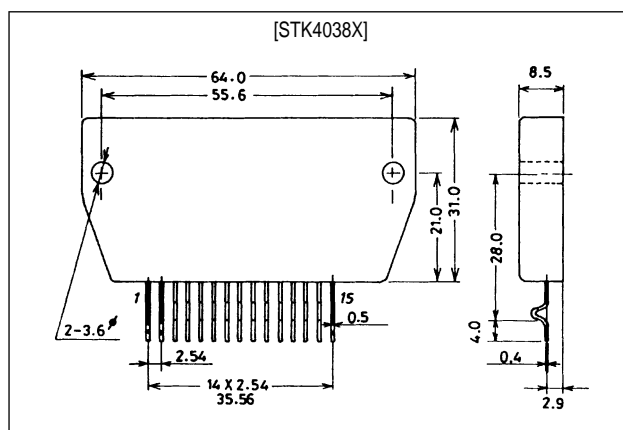
### Features

- Compact package for thin-type audio sets
- Member of pin-compatible series with outputs of 30 to 100W
- Easy heatsink design to disperse heat generated in thin-type stereo sets
- Current mirror circuit for low 0.008% total harmonic distortion
- External supply switch-on and switch-off shock noise muting, load short-circuit protection, thermal shutdown and other circuits can be tailored-designed.

### Package Dimensions

unit: mm

4062



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC \text{ max}}$		$\pm 57$	V
Thermal resistance	$\theta_{j-c}$		1.4	$^\circ\text{C/W}$
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 short-circuit <sup>1</sup>	$t_s$	$V_{CC} = \pm 39.5\text{V}, R_L = 8\Omega, f = 50\text{Hz}, P_O = 60\text{W}$	1	s

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

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	$V_{CC}$		$\pm 39.5$	V
Load resistance	$R_L$		8	$\Omega$

**Operating Characteristics**

at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = \pm 39.5\text{V}$ ,  $R_L = 8\Omega$  (noninductive load),  $R_g = 600\Omega$ ,  $V_G = 40\text{dB}$ , 100kHz LPF on

Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current	$I_{CCO}$	$V_{CC} = \pm 47\text{V}$	15	-	120	mA
Output power	$P_{O(1)}$	THD = 0.008%, $f = 20\text{Hz}$ to 20kHz	60	-	-	W
	$P_{O(2)}$	$V_{CC} = \pm 33.5\text{V}$ , THD = 0.04%, $R_L = 4\Omega$ , $f = 1\text{kHz}$	60	-	-	W
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 50k	-	Hz
Input impedance	$r_i$	$P_O = 1.0\text{W}$ , $f = 1\text{kHz}$	-	55	-	k $\Omega$
Output noise voltage <sup>2</sup>	$V_{NO}$	$V_{CC} = \pm 47\text{V}$ , $R_g = 10\text{k}\Omega$	-	-	1.2	mVrms
Neutral voltage	$V_N$	$V_{CC} = \pm 47\text{V}$	-70	0	+70	mV

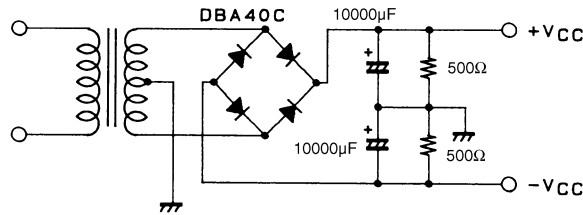
Notes.

All tests are measured using a constant-voltage supply unless otherwise specified.

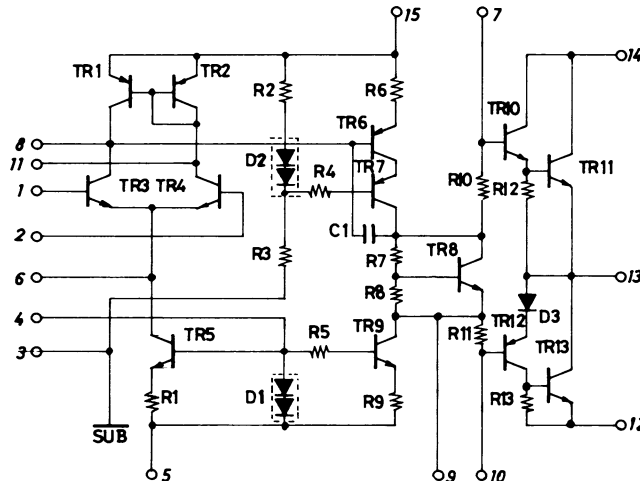
1. Available time for load short-circuit and output noise voltage are measured using the transformer supply specified below.

2. The output noise voltage is the peak value of an average-reading meter with an rms value scale. The noise voltage waveform does not include any pulse noise.

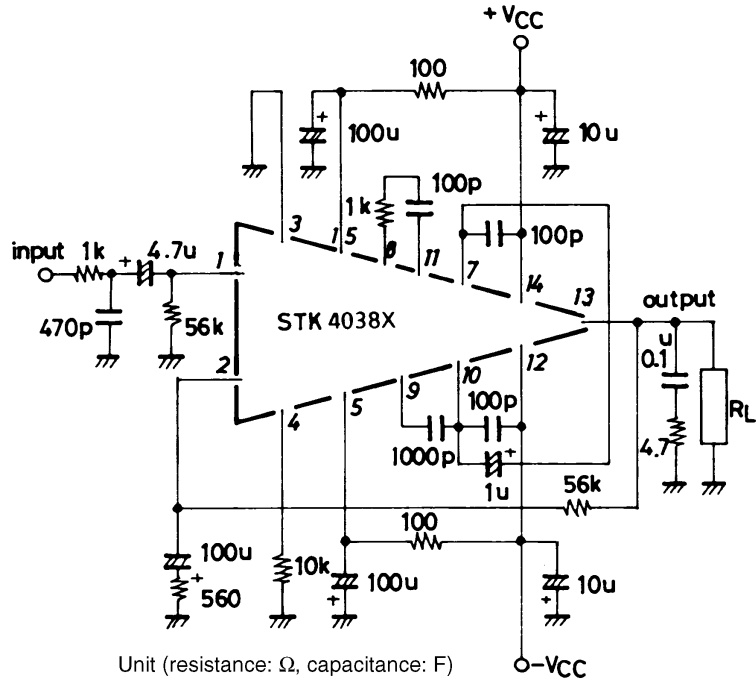
**Specified Transformer Supply (MG-200 or Equivalent)**



**Equivalent Circuit**



Sample Application Circuit (60W min AF Power Amplifier)



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