

**STK4042XI**

## AF Power Amplifier (Split Power Supply) (80W min, THD = 0.008%)

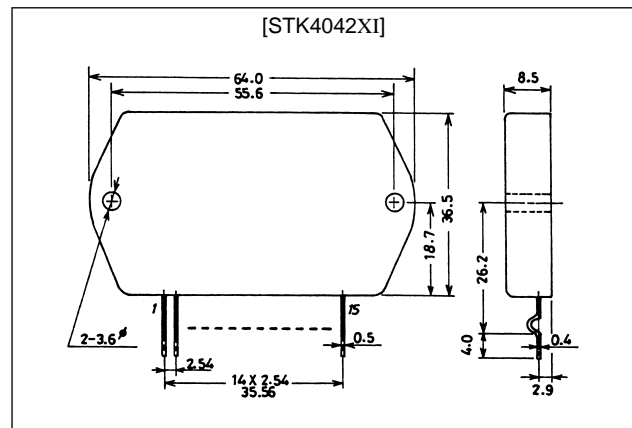
### Features

- Small-sized package permitting audio sets to be made slimmer.
- The STK4018XI series are available for output 50W to 80W and are pin-compatible.
- Facilitates thermal design of slim stereo sets.
- The use of a current mirror circuit, cascode circuit, pure complementary circuit provides low distortion (0.008% / 100kHz, LPF ON).
- Possible to design electronic supplementary circuits (pop noise muting at the time of power ON/OFF, load short protector, thermal shutdown)

### Package Dimensions

unit: mm

4075



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC \text{ max}}$		$\pm 67$	V
Thermal resistance	$\theta_{j-c}$		1.2	$^\circ\text{C/W}$
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	$t_s^*1$	$V_{CC} = \pm 46.5\text{V}$ , $R_L = 8\Omega$ , $f = 50\text{Hz}$ , $P_O = 80\text{W}$	1	s

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

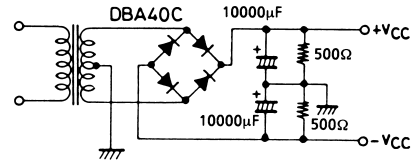
Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	$V_{CC}$		$\pm 46.5$	V
Load resistance	$R_L$		8	$\Omega$

## STK4042XI

**Operating Characteristics** at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = \pm 46.5\text{V}$ ,  $R_L = 8\Omega$  (noninductive load),  $V_G = 40\text{ dB}$ ,  
 $R_g = 600\Omega$ , 100kHz-LPF on:

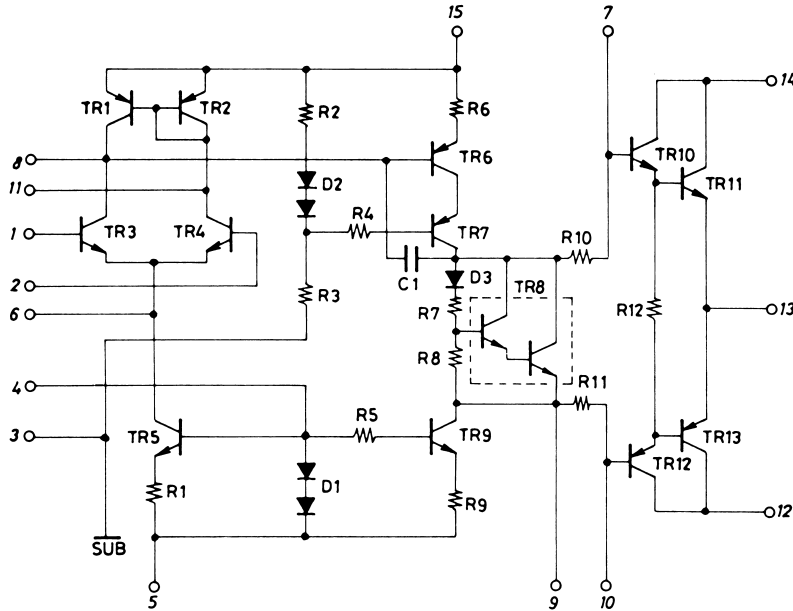
Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current	$I_{CCO}$	$V_{CC} = \pm 56\text{V}$	15		120	mA
Output power	$P_O$	THD = 0.008%, $f = 20\text{ to }20\text{kHz}$	80			W
Total harmonic distortion	THD	$P_O = 1\text{W}$ , $f = 1\text{kHz}$			0.008	%
Frequency response	$f_L, f_H$	$P_O = 1\text{W}$ , $+0$ $-3\text{ dB}$		20 to 50k		Hz
Input impedance	$r_i$	$P_O = 1\text{W}$ , $f = 1\text{kHz}$		55		$k\Omega$
Output noise voltage	$V_{NO}^*2$	$V_{CC} = \pm 56\text{V}$ , $R_g = 10k\Omega$			1.2	mVrms
Neutral voltage	$V_N$	$V_{CC} = \pm 56\text{V}$	-70	0	+70	mV

- Notes. For power supply at the time of test, use a constant-voltage power supply unless otherwise specified.
- \*1 For measurement of the available time for load short-circuit and output noise voltage, use the specified transformer power supply shown below.
  - \*2 The output noise voltage is represented by the peak value on the rms scale (VTVM) of average value indicating type. The noise voltage waveform includes no flicker noise.



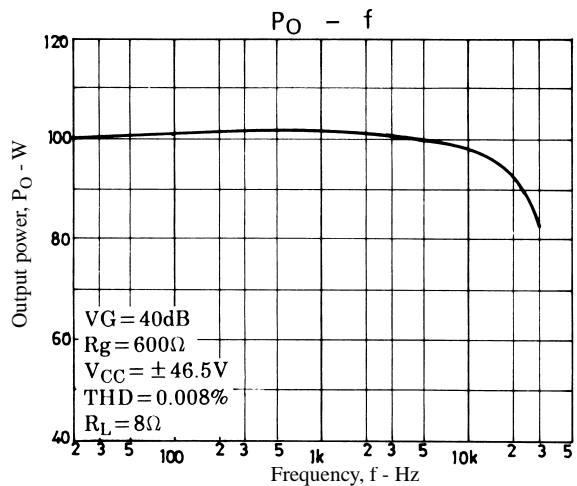
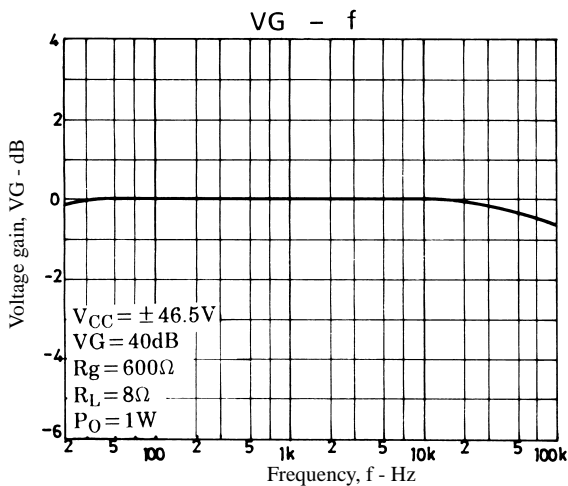
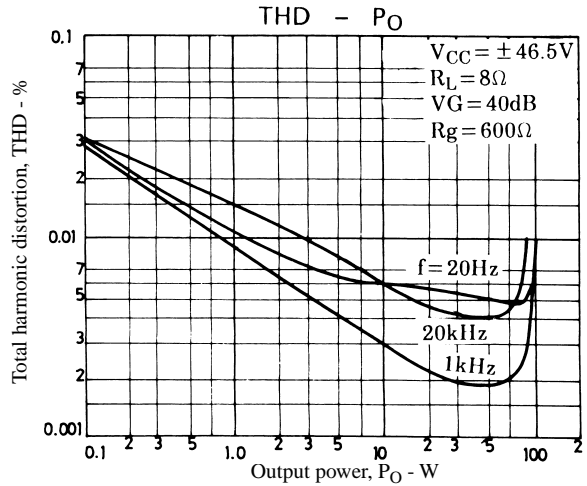
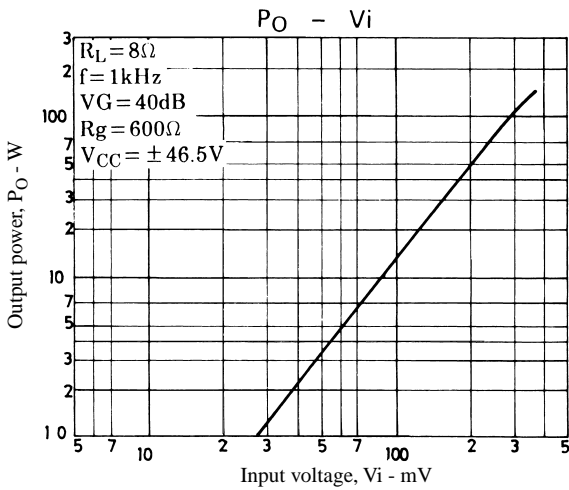
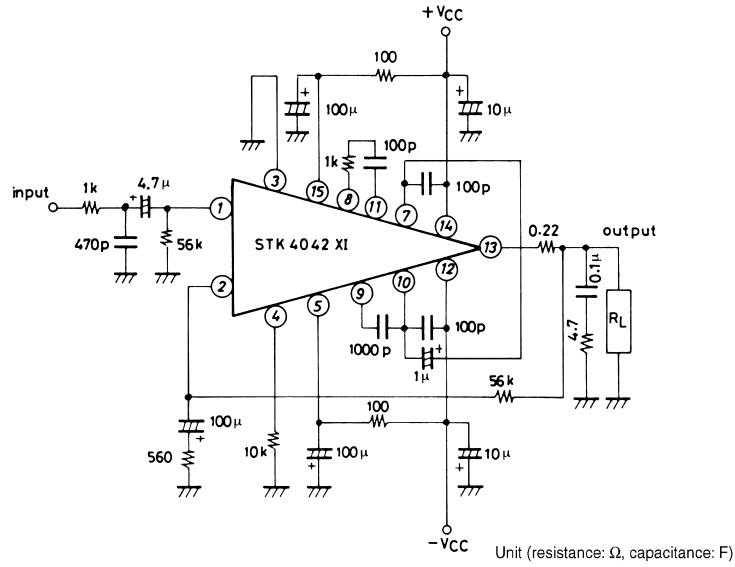
Specified transformer power supply  
(Equivalent to MG-200)

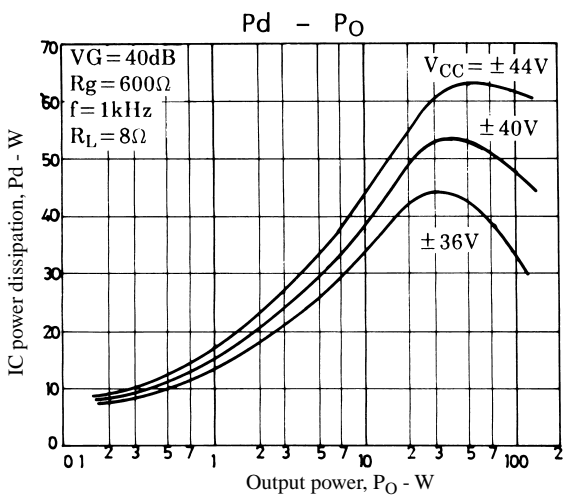
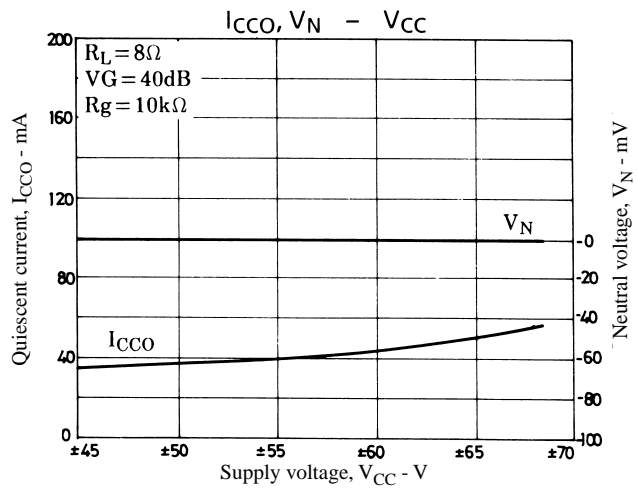
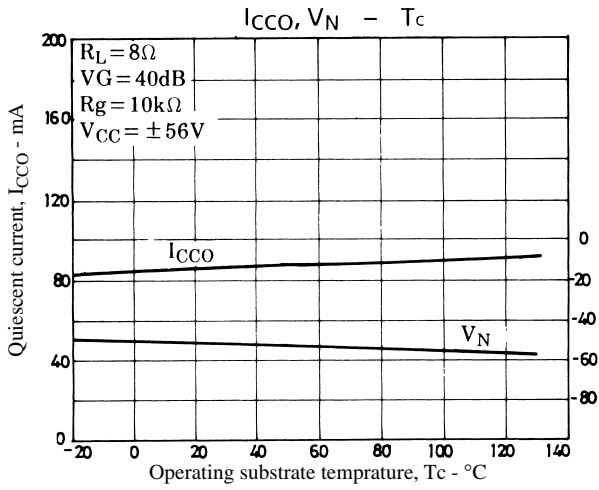
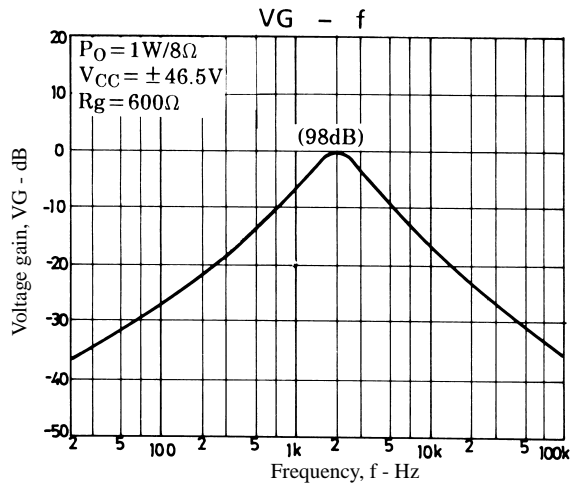
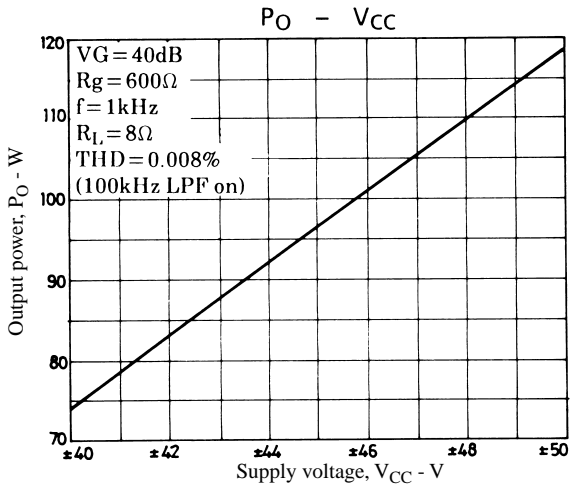
### Equivalent Circuit



# STK4042XI

## Sample Application Circuit : 80W min AF Power Amplifier





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