

**SANYO****STK4024II**

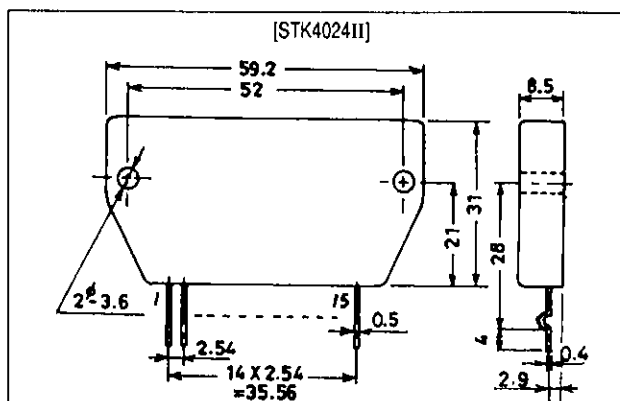
## AF Power Amplifier (Split Power Supply) (20W min, THD = 0.4%)

### Features

- Small-sized package permitting audio sets to be made slimmer
- The STK4024II series are available for output 20W to 70W and are pin-compatible.
- Facilitates thermal design of slim stereo sets.
- The use of a constant-current circuit minimizes pop noise at the time of power ON/OFF.
- 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  
4033



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC \text{ max}}$		$\pm 34.5$	V
Thermal resistance	$\theta_{j-c}$		2.6	$^\circ\text{C/W}$
Junction temperature	$T_j$		150	$^\circ\text{C}$
Operating substrate temperature	$T_c$		125	$^\circ\text{C}$
Storage temperature	$T_{stg}$		$-30 \text{ to } +125$	$^\circ\text{C}$
Available time for load short-circuit	$t_s^*$	$V_{CC} = \pm 23\text{V}$ , $R_L = 8\Omega$ , $f = 50\text{Hz}$ , $P_O = 20\text{W}$	2	s

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

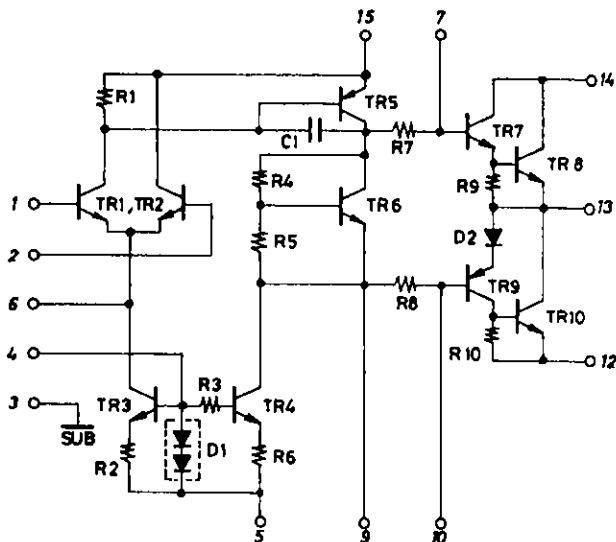
Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	$V_{CC}$		$\pm 23$	V
Load resistance	$R_L$		8	$\Omega$

## STK4024II

**Operating Characteristics** at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = \pm 23\text{V}$ ,  $R_L = 8\Omega$ ,  $R_g = 600\Omega$ ,  $V_G = 40\text{dB}$ ,  $R_L$ : noninductive load

Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current	$I_{CCO}$	$V_{CC} = \pm 28\text{V}$	10	20	50	mA
Output power	$P_{O(1)}$	THD = 0.4%, $f = 20\text{Hz}$ to $20\text{kHz}$	20	—	—	W
	$P_{O(2)}$	$V_{CC} = \pm 20\text{V}$ , THD = 1.0%, $R_L = 4\Omega$ , $f = 1\text{kHz}$	20	—	—	W
Total harmonic distortion	THD	$P_O = 1.0\text{W}$ , $f = 1\text{kHz}$	—	—	0.3	%
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	$V_{NO}^{**}$	$V_{CC} = \pm 28\text{V}$ , $R_g = 10k\Omega$	—	—	1.2	mVrms
Neutral voltage	$V_N$	$V_{CC} = \pm 28\text{V}$	-70	0	+70	mV

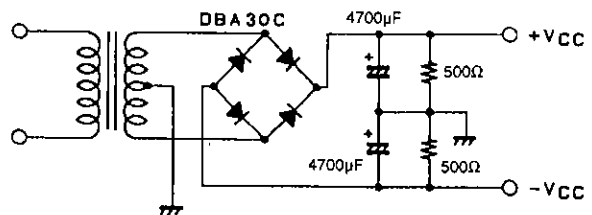
### Equivalent Circuit



Note: For Power supply at the time of test, use a constant-voltage power supply unless otherwise specified.

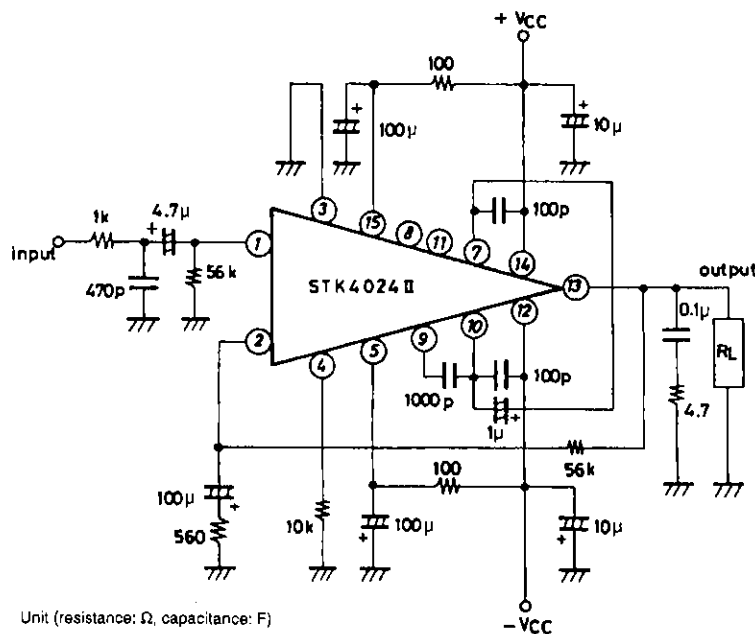
\* For measurement of the available time for load short-circuit and output noise voltage, use the specified transformer power supply shown below.

\*\* The output noise voltage is represented by the peak value on rms scale (VTVM) of average value indicating type. The noise voltage waveform includes no flicker noise.

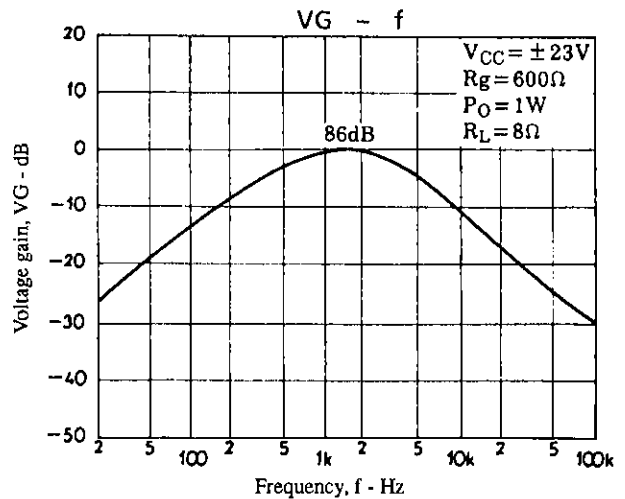
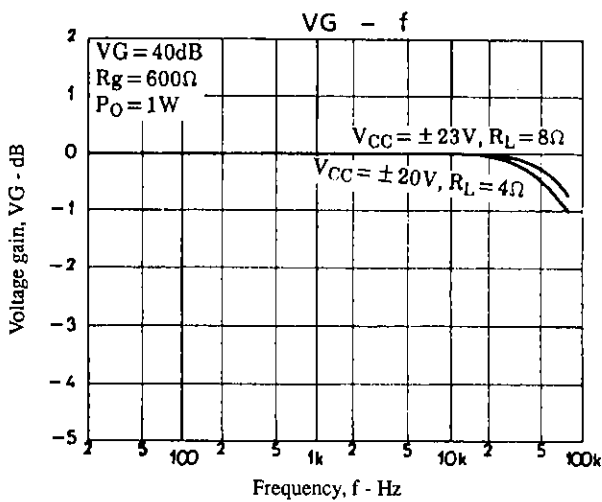
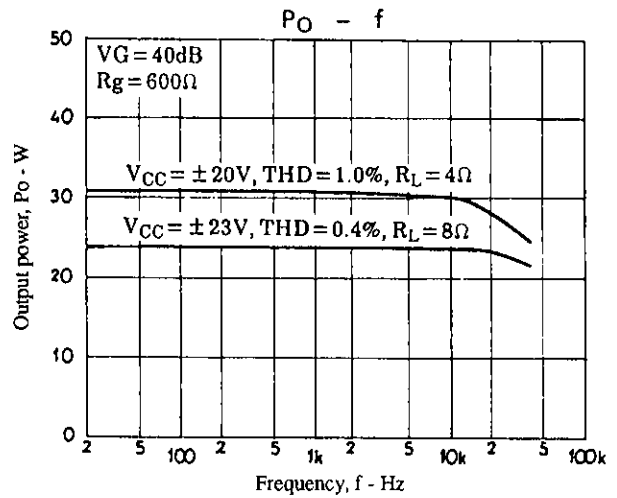
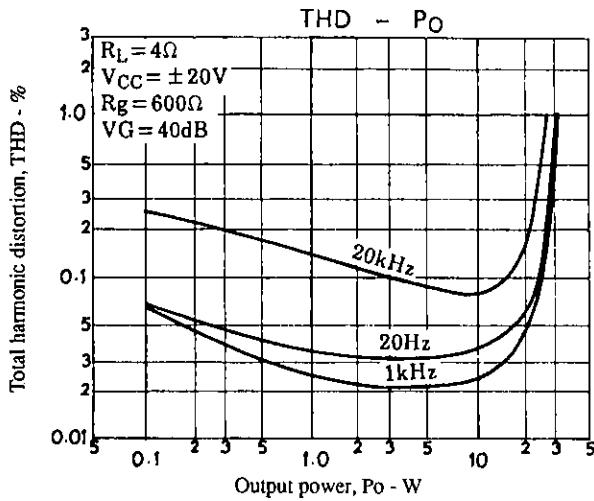
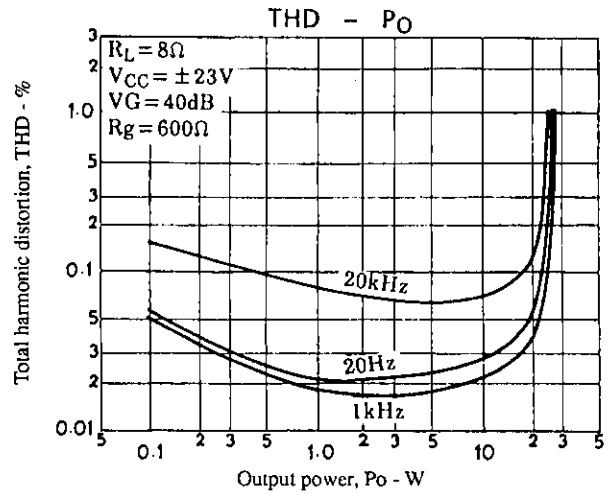
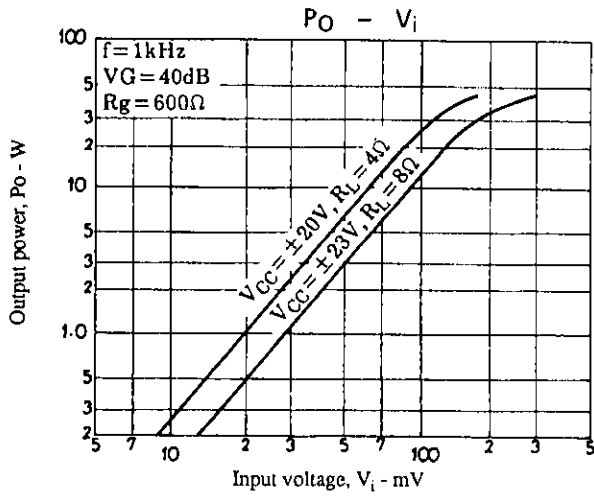


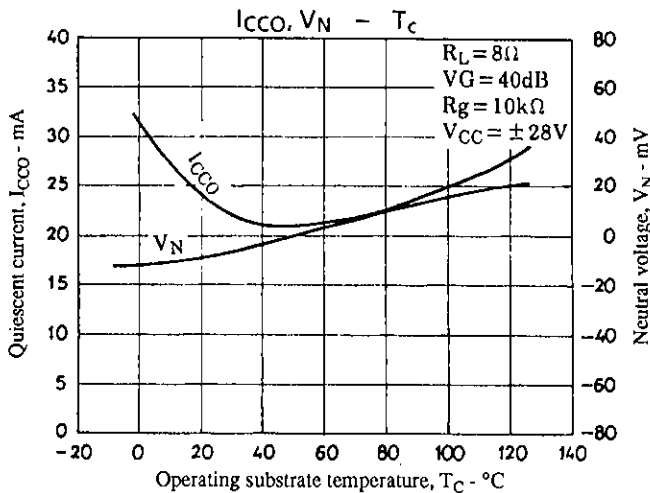
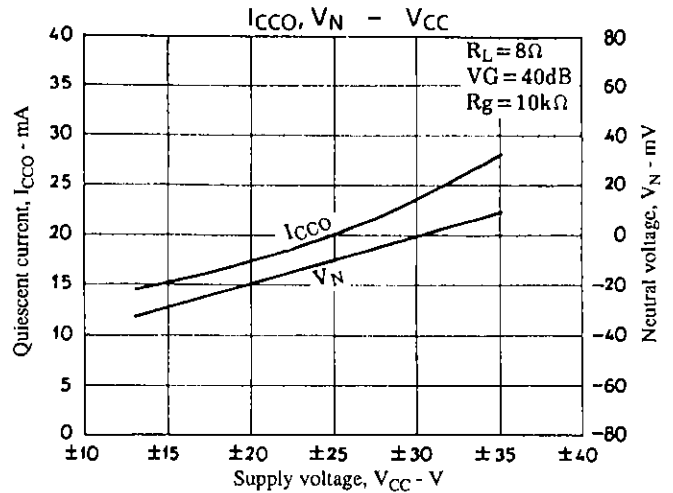
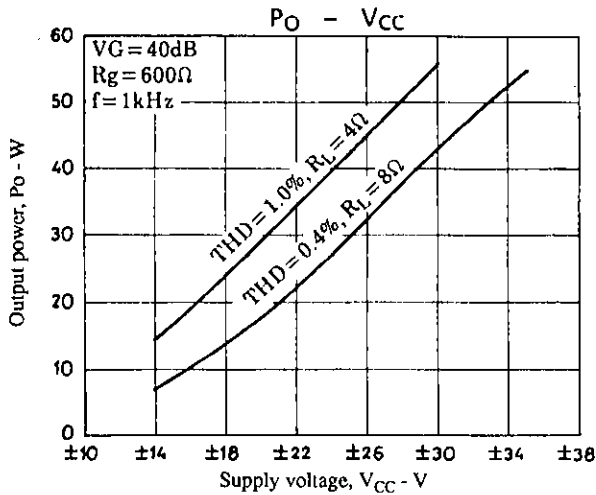
Specified Transformer Power Supply  
(Equivalent to RP-25)

### Sample Application Circuit: 20W min AF Power Amplifier



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





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