

	No. 1669C	STK4040X AF Power Amplifier (Split Power Supply) (70W min, THD = 0.008%)

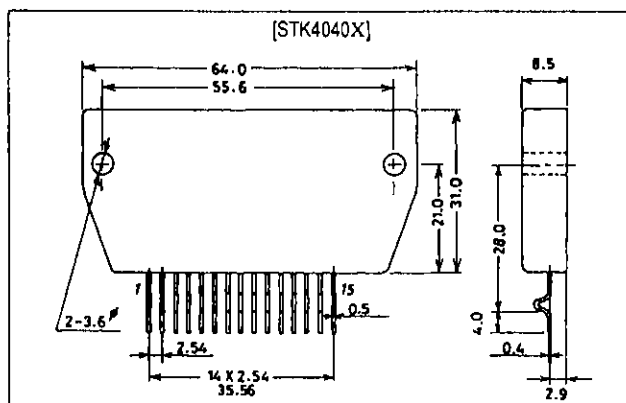
Features

- Small-sized package permitting audio sets to be made slimmer
- The STK4028X series are available for output 30W to 100W and are pin-compatible.
- Facilitates thermal design of slim stereo sets.
- The use of a current mirror circuit, cascode circuit provides a 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

4062



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC \text{ max}}$		± 62.0	V
Thermal resistance	θ_{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	t_s^*	$V_{CC} = \pm 42.5\text{V}$, $R_L = 8\Omega$, $f = 50\text{Hz}$, $P_O = 70\text{W}$	1.0	s

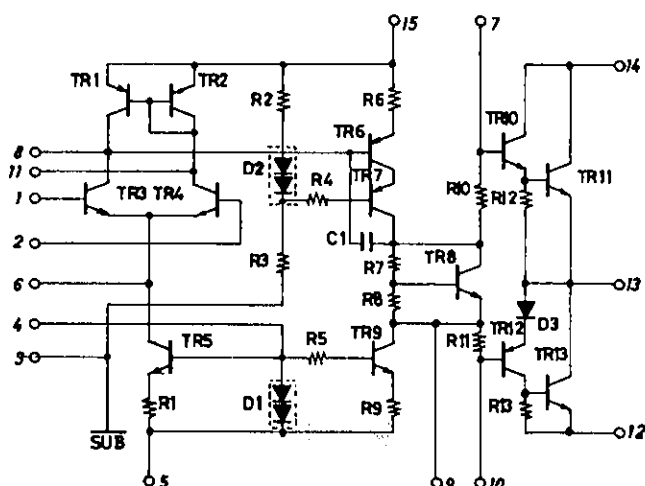
Recommended Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		± 42.5	V
Load resistance	R_L		8	Ω

Operating Characteristics at Ta = 25°C, V_{CC} = ±42.5V, R_L = 8Ω (noninductive load), f = 1kHz, VG = 40dB, R_g = 600Ω, 100kHz-LPF ON

Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current	I_{CCO}	$V_{CC} = \pm 51V$	15	—	120	mA
Output power	$P_{O(1)}$	$f = 20Hz \text{ to } 20kHz, THD = 0.008\%$	70	—	—	W
	$P_{O(2)}$	$V_{CC} = \pm 36.0V, THD = 0.04\%, R_L = 4\Omega$	70	—	—	W
Total harmonic distortion	THD	$P_O = 1.0W$	—	—	0.008	%
Frequency response	f_L, f_H	$P_O = 1.0W, +0_{-3} dB$	—	20 to 50k	—	Hz
Input impedance	r_i	$P_O = 1.0W$	—	55	—	k Ω
Output noise voltage	V_{NO}^{**}	$V_{CC} = \pm 51V, R_g = 10k\Omega$	—	—	1.2	mVrms
Neutral voltage	V_N	$V_{CC} = \pm 51V$	-70	0	+70	mV

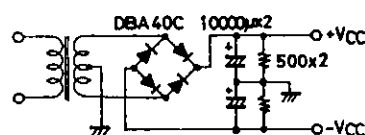
Equivalent Circuit



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

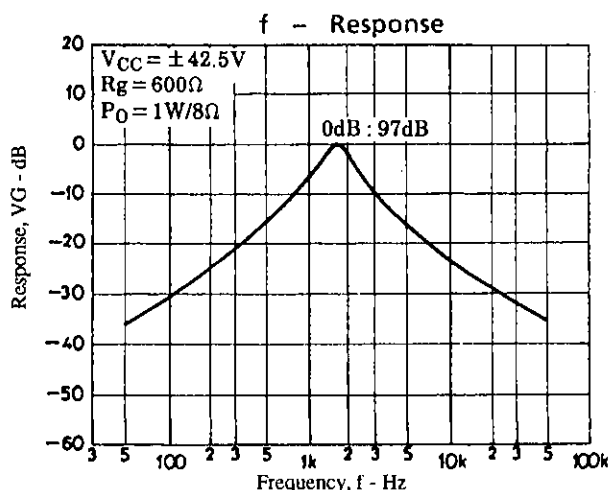
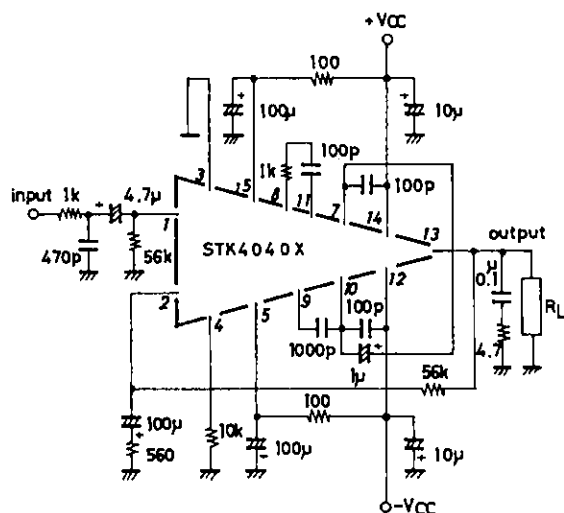
- * For measurement of the available time for load short-circuit and output noise voltage, use the specified transformer power supply shown below.

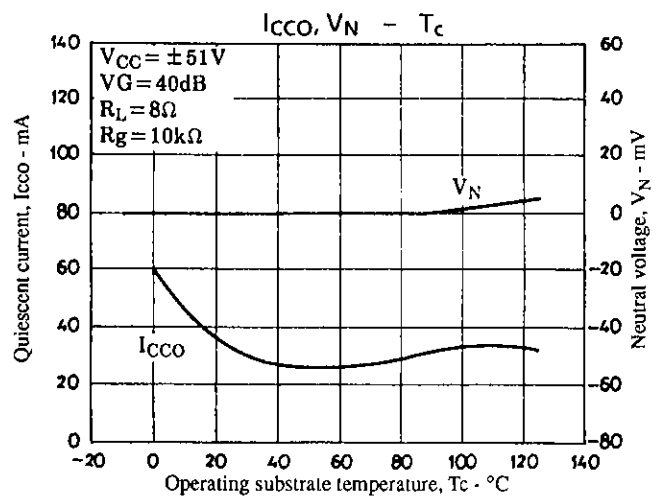
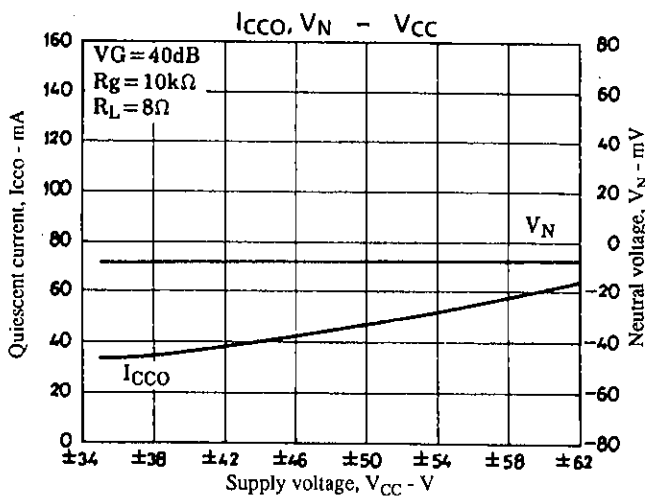
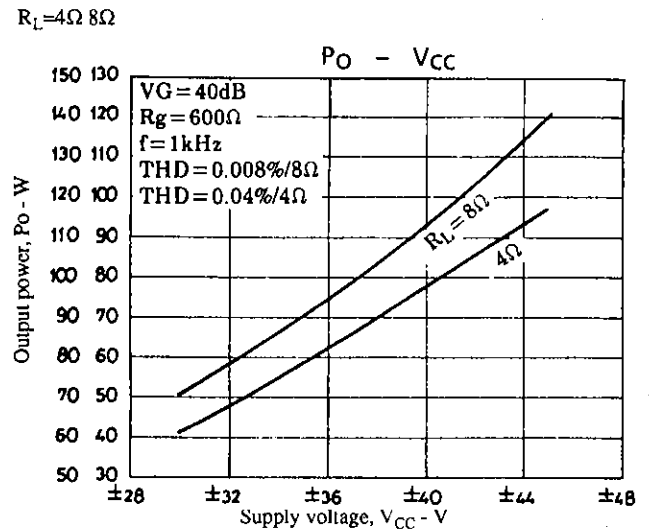
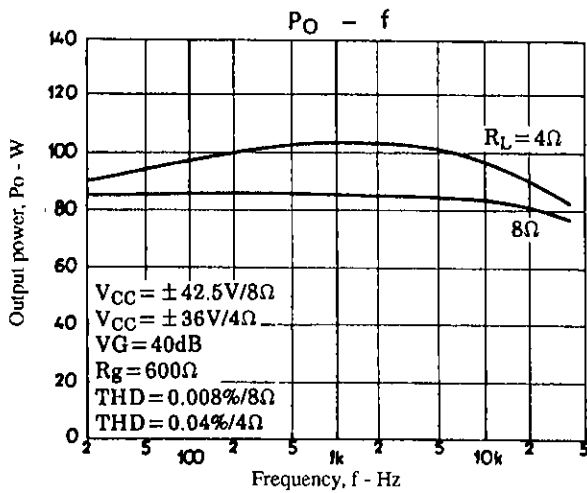
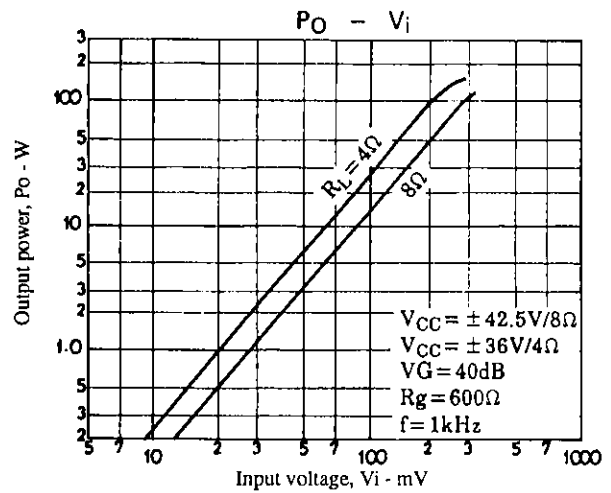
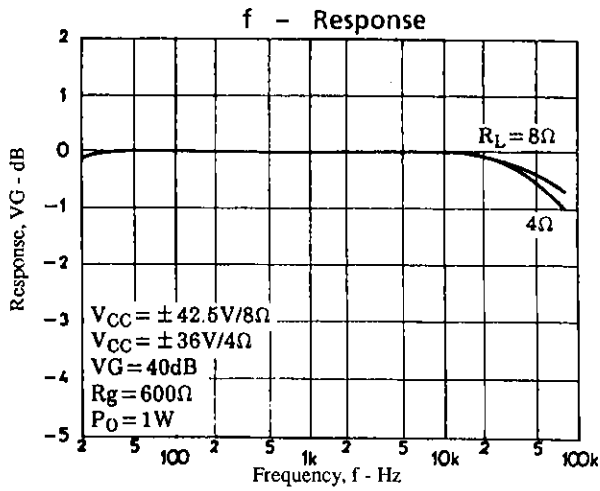
** The output noise voltage is represented by the peak value on rms scale (VTVM) of average value indicating type. The noise voltage waveform includes no flicker noise.

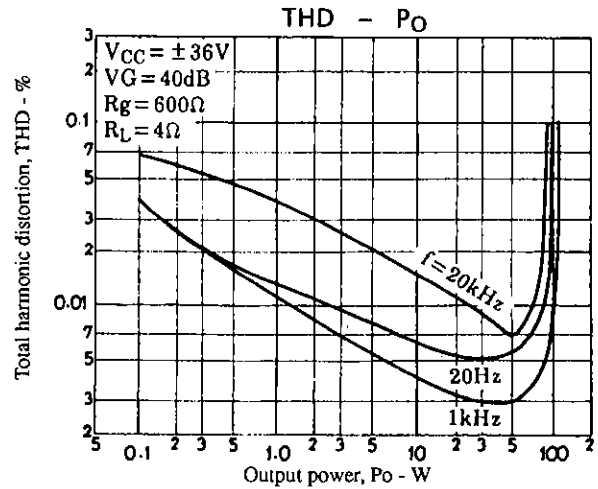
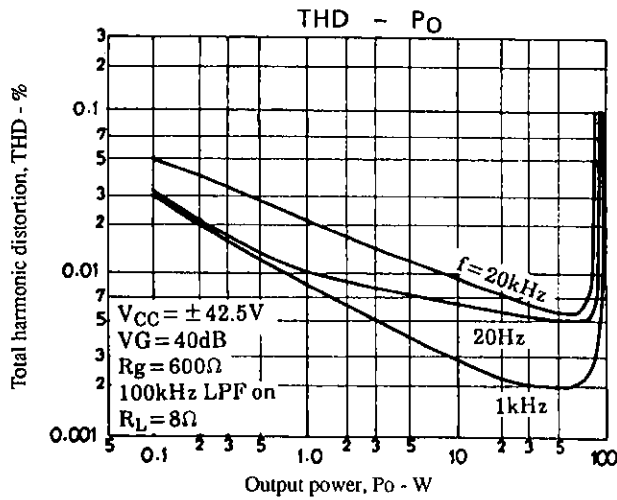


Specified Transformer Power Supply
(Equivalent to MG-200)

Sample Application Circuit: 70W min AF Power Amplifier







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