Ordering number: EN 4674A

Thick Film Hybrid IC

STK4038X

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

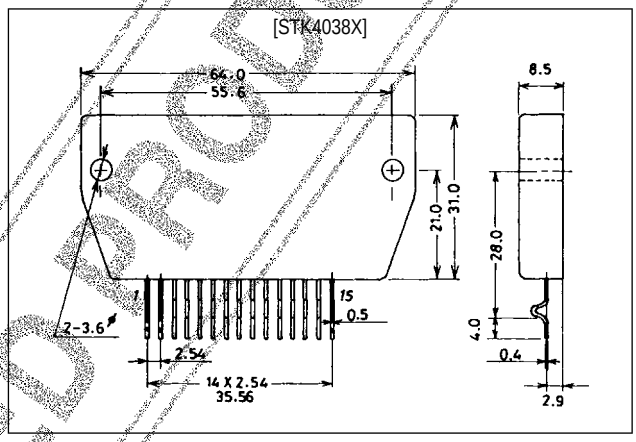
Features

- 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 Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		±57	V
Thermal resistance	θj-c		1.4	°C/W
Junction temperature	Tj		150	°C
Operating substrate temperature	Tc		125	°C
Storage temperature	Tstg		–30 to +125	°C
Available time for load short-circuit	t_s	V_{CC} = ±39.5V, R_L = 8Ω, f = 50Hz, P_O = 60W	1	s

Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		±39.5	V
Load resistance	R_L		8	Ω

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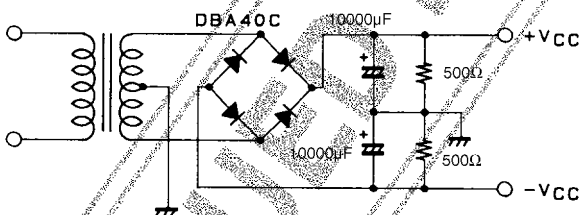
Operating Characteristics

at Ta = 25°C, V_{CC} = ±39.5V, R_L = 8Ω (noninductive load), Rg = 600Ω, VG = 40dB, 100kHz LPF on

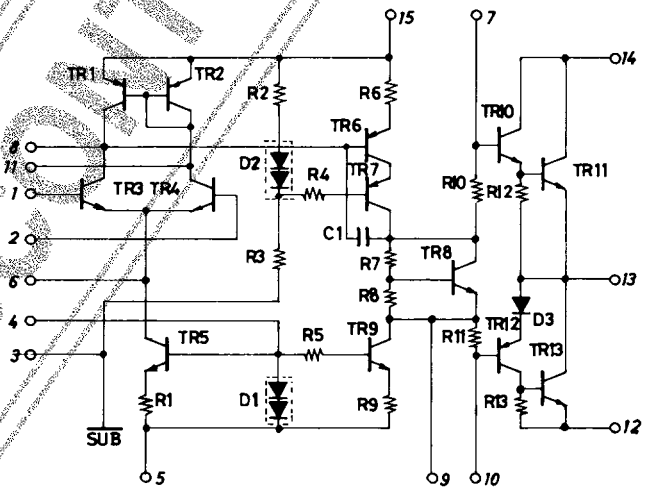
Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current	I_{CCO}	V_{CC} = ±47V	15		120	mA
Output power	P_O(1)	THD = 0.008%, f = 20Hz to 20kHz	60	–	–	W
	P_O(2)	V_{CC} = ±33.5V, THD = 0.04%, R_L = 4Ω, f = 1kHz	60	–	–	W
Total harmonic distortion	THD	P_O = 1.0W, f = 1kHz	–	–	0.008	%
Frequency response	f_L, f_H	P_O = 1.0W, $^{+0}_{-3}$dB	–	20 to 50k	–	Hz
Input impedance	r_i	P_O = 1.0W, f = 1kHz	–	55	–	kΩ
Output noise voltage[2]	V_{NO}	V_{CC} = ±47V, Rg = 10kΩ	–	–	1.2	mVrms
Neutral voltage	V_N	V_{CC} = ±47V	–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 inlcude any pulse noise.

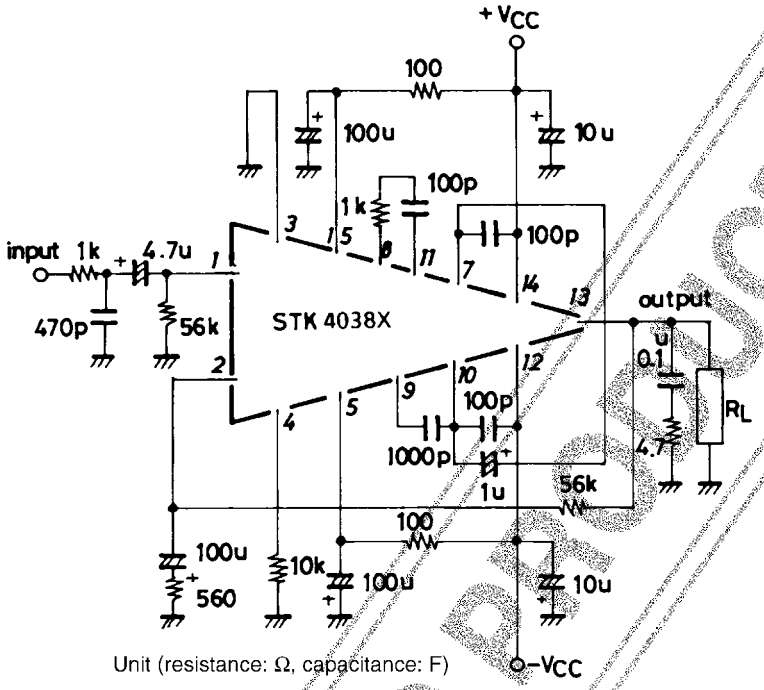
Specified Transformer Supply (MG-200 or Equivalent)



Equivalent Circuit



Sample Application Circuit (60W min AF Power Amplifier)



Unit (resistance: Ω, capacitance: F)