



STK4042 II

AF Power Amplifier (Split Power Supply) (80 W min, THD = 0.4%)

Features

- Miniature package allows audio sets to be made slimmer.
- Pin-compatible amplifiers with outputs of 20 to 200 W are available.
- Facilitates thermal design of slim stereo sets by distributing the heat dissipating ICs in the set.
- The adoption of constant current circuits reduces pop noise when the power supply is turned on or off.
- Supports the design of supplementary electronic circuits (thermal shutdown, load short protection, and pop noise muting at power on and off).

Specifications

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

Parameter	Symbol	Condition	Rating	Unit
Maximum supply voltage	V_{CC} max		± 65	V
Thermal resistance	θ_{j-c}		1.2	$^\circ\text{C}/\text{W}$
Junction temperature	T_j		150	$^\circ\text{C}$
Operating case temperature	T_c		125	$^\circ\text{C}$
Storage temperature	T_{stg}		-30 to +125	$^\circ\text{C}$
Available time for load shorted	t_{s^*}	$V_{CC} = \pm 45\text{ V}$, $R_L = 8\ \Omega$, $f = 50\text{ Hz}$, $P_O = 80\text{ W}$	2	s

Note: Use a constant voltage power supply as the test power supply unless otherwise specified.

* Use the transformer power supply shown on the next page when measuring the available time for load shorted and the output noise voltage.

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

Parameter	Symbol	Condition	Rating	Unit
Recommended supply voltage	V_{CC}		± 45	V
Load resistance	R_L		8	Ω

Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = \pm 45\text{ V}$, $R_L = 8\ \Omega$ (noninductive load), $R_g = 600\ \Omega$, $V_G = 40\text{ dB}$

Parameter	Symbol	Condition	Rating			Unit
			min	typ	max	
Quiescent current	I_{CCO}	$V_{CC} = \pm 54\text{ V}$	15		120	mA
Output power	P_O	THD = 0.4%, $f = 20\text{ Hz}$ to 20 kHz	80			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 50 k		Hz
Input resistance	r_i	$P_O = 1.0\text{ W}$, $f = 1\text{ kHz}$		55		$k\Omega$
Output noise voltage	V_{NO}^{**}	$V_{CC} = \pm 54\text{ V}$, $R_g = 10\text{ k}\Omega$			1.2	mVrms
Neutral voltage	V_N	$V_{CC} = \pm 54\text{ V}$	-70	0	+70	mV

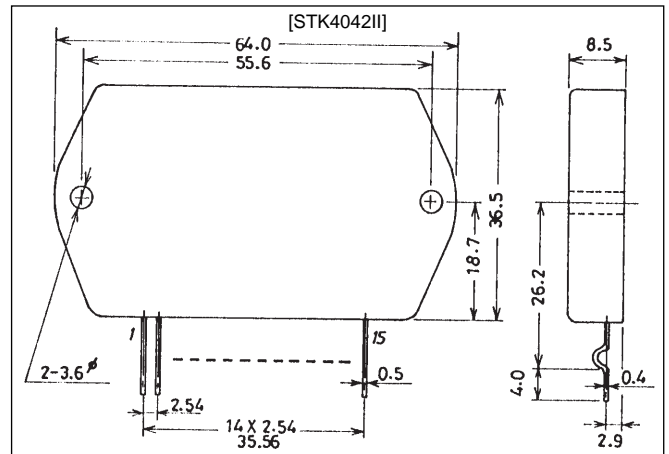
Note: Use a constant voltage power supply as the test power supply unless otherwise specified.

** The output noise voltage is the peak value measured with an averaging rms scale volt meter. The noise voltage waveform should not include pulse noise.

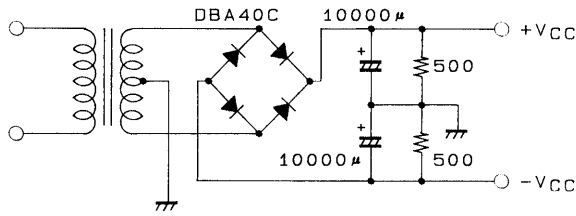
Package Dimensions

unit: mm

4075



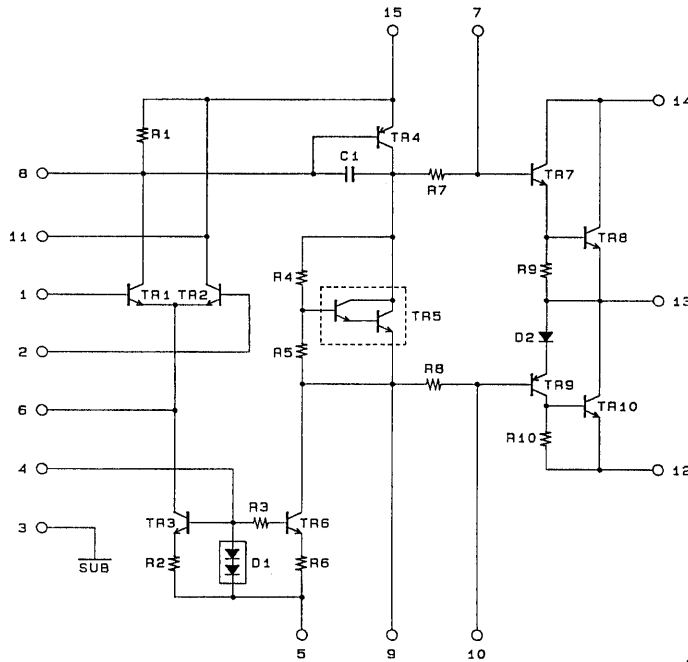
STK4042 II



Unit (resistance: Ω, capacitance: F)

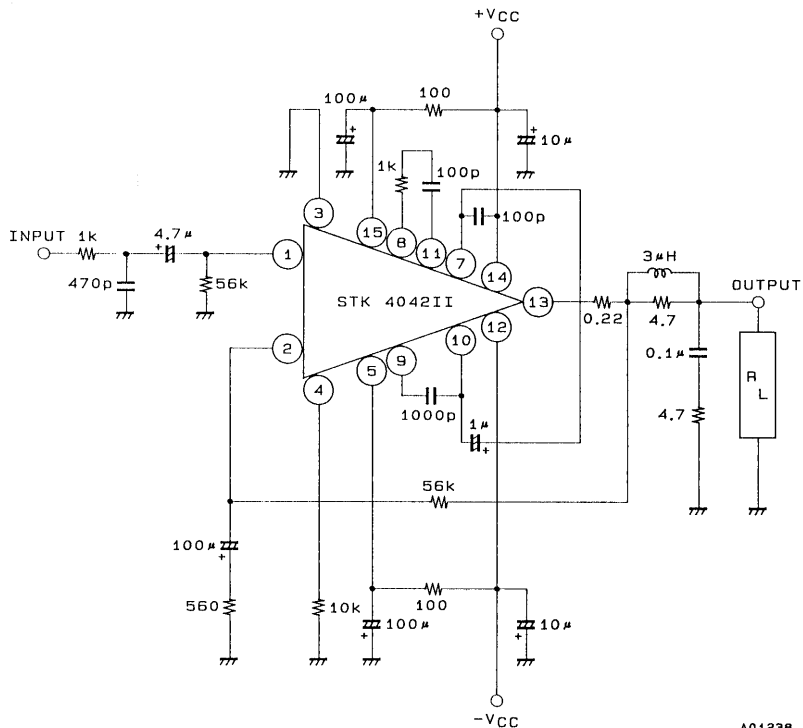
**Specified Transformer Power Supply
(MG-200 equivalent)**

Equivalent Circuit



A0123B

Sample Application Circuit: 80 W (minimum) AF Power Amplifier



A0123B

Unit (resistance: Ω, capacitance: F)

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