



STK4042 II

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

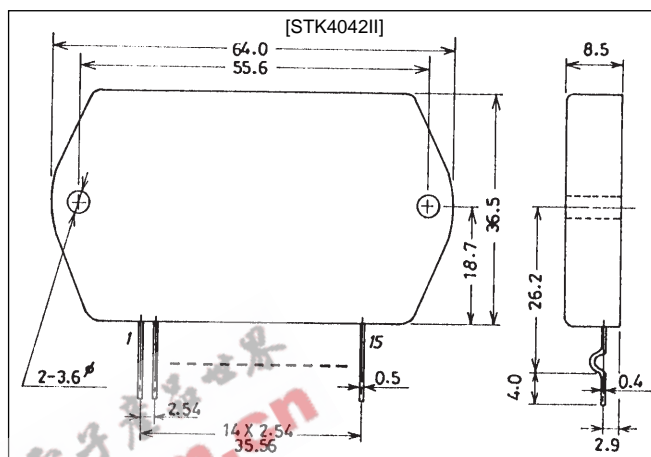
Features

- 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).

Package Dimensions

unit: mm

4075



Specifications

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

Parameter	Symbol	Condition	Rating	Unit
Maximum supply voltage	$V_{CC \text{ max}}$		± 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%, $f = 20 \text{ Hz to } 20 \text{ kHz}$	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		$\text{k}\Omega$
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

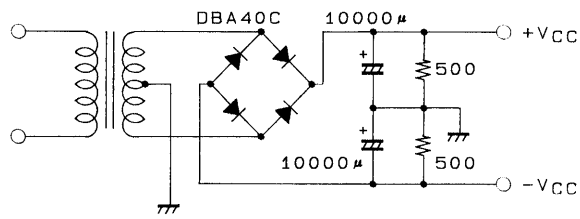
Note: Use a constant voltage power supply as the test power supply unless otherwise specified.

** 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.

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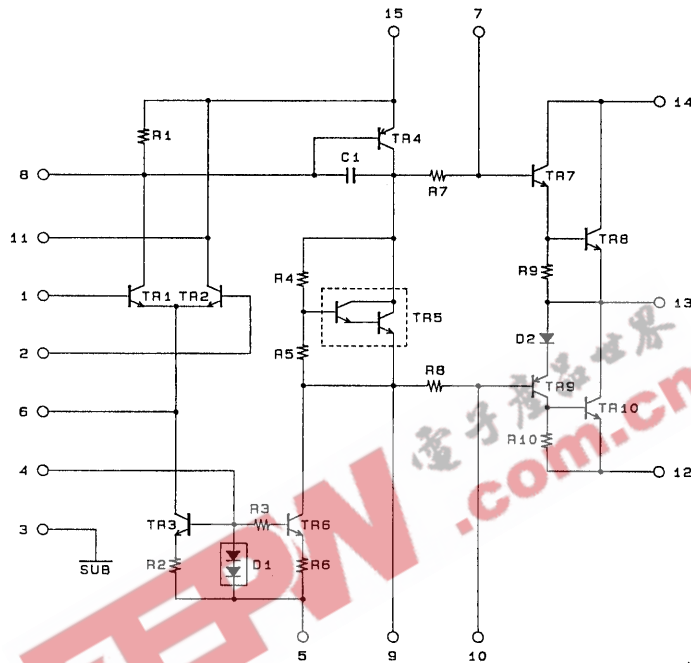
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Unit (resistance: Ω, capacitance: F)

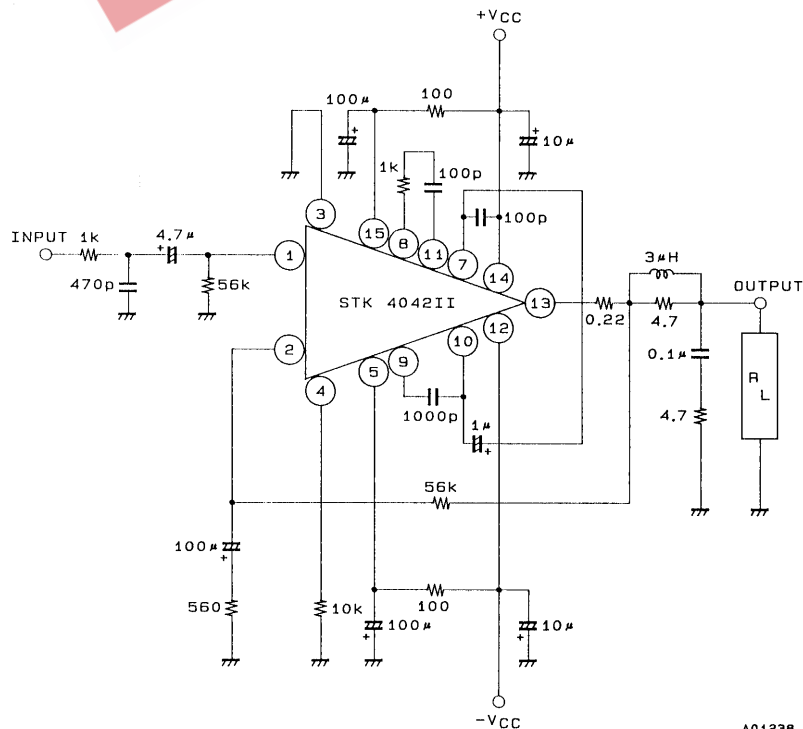
**Specified Transformer Power Supply
(MG-200 equivalent)**

Equivalent Circuit



A01238

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



A01238

Unit (resistance: Ω, capacitance: F)

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