



STK4028 II

AF Power Amplifier (Split Power Supply) (30 W min, THD = 0.4 %)

Features

- Compact packaging supports slimmer set designs
- Series designed for 20 up to 200 W and pin-compatibility
- Simpler heat sink design facilitates thermal design of slim stereo sets
- The pulse noises associated with turning the power on and off have been reduced by the adoption of fixed current circuits
- Supports addition of electronic circuits for thermal shutdown and load-short protection circuit as well as pop noise muting which occurs when the power supply switch is turned on and off

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		± 42	V
Thermal resistance	θ_{j-c}		2.1	$^\circ\text{C}/\text{W}$
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 shorted	t_S^{*1}	$V_{CC} = \pm 27.5\text{ V}$, $R_L = 8\ \Omega$, $f = 50\text{ Hz}$, $P_O = 30\text{ W}$	2	s

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

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		± 27.5	V
Load resistance	R_L		8	Ω

Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = \pm 27.5\text{ V}$, $R_L = 8\ \Omega$, $V_G = 40\text{ dB}$, $R_g = 600\ \Omega$, 100 kHz LPF on, R_L (noninductive)

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	I_{CCO}	$V_{CC} = \pm 33\text{ V}$	10	20	50	mA
Output power	P_O (1)	THD = 0.4%, $f = 20\text{ Hz}$ to 20 kHz	30			W
	P_O (2)	$V_{CC} = \pm 25\text{ V}$, THD = 1.0%, $R_L = 4\ \Omega$, $f = 1\text{ kHz}$	35			W
Total harmonic distortion	THD	$P_O = 1.0\text{ W}$, $f = 1\text{ kHz}$			0.3	%
Frequency response	f_L, f_H	$P_O = 1.0\text{ W}$, $_{-3}^{+0}\text{ dB}$		20 to 50k		Hz
Input resistance	r_i	$P_O = 1.0\text{ W}$, $f = 1\text{ kHz}$		55		k Ω
Output noise voltage	V_{NO}^{*2}	$V_{CC} = \pm 33\text{ V}$, $R_g = 10\text{ k}\Omega$			1.2	mVrms
Neutral voltage	V_N	$V_{CC} = \pm 33\text{ V}$	-70	0	+70	mV

Note: Use rated power supply for test unless otherwise specified.

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

*2. Output noise voltage represents the peak value on the rms scale (VTVM). The noise voltage waveform does not include the pulse noise.

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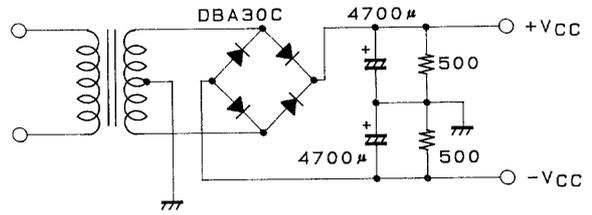
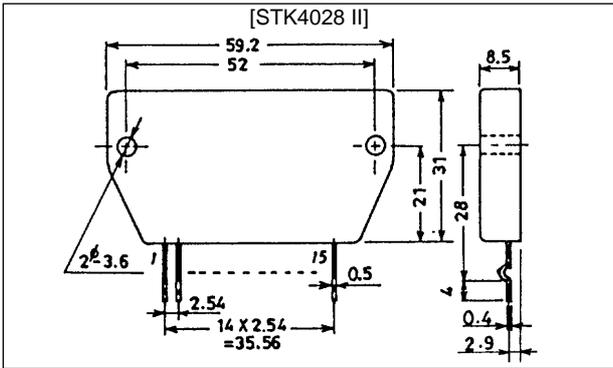
SANYO Electric Co., Ltd. Semiconductor Business Headquarters

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Package Dimensions

unit: mm

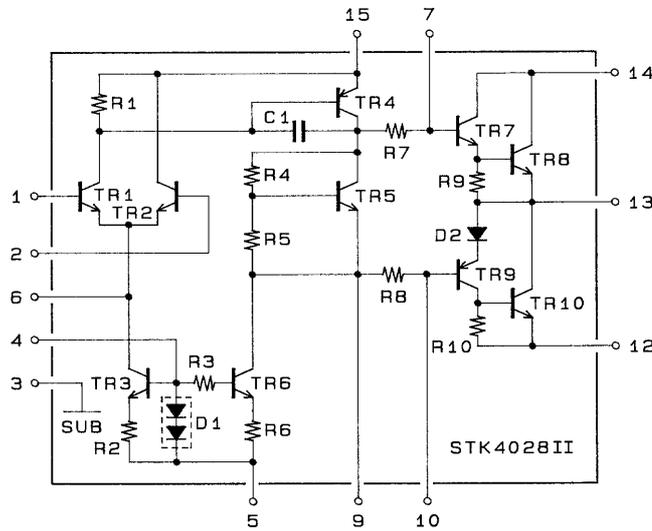
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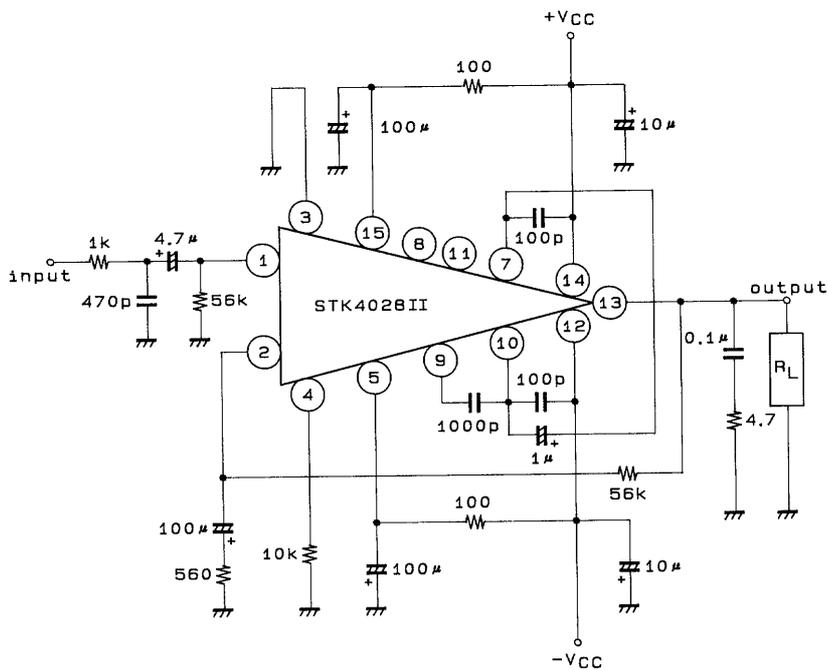
Unit (resistance: Ω, capacitance: F)

Specified Transformer Power Supply
(RP-25 equivalent)

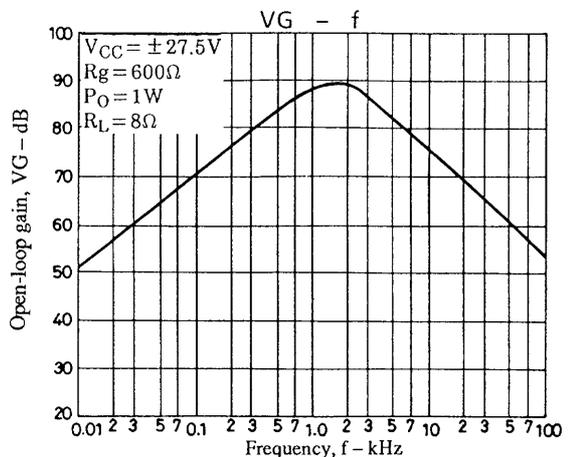
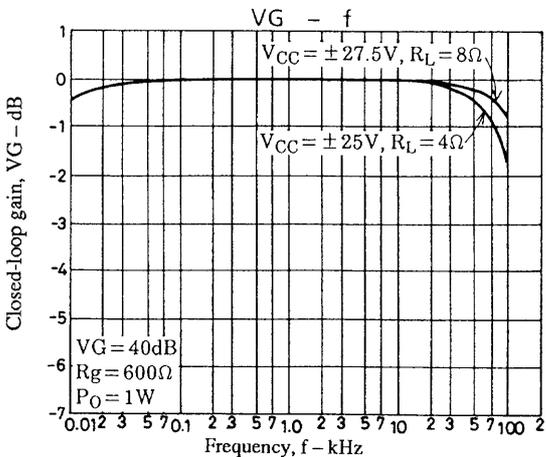
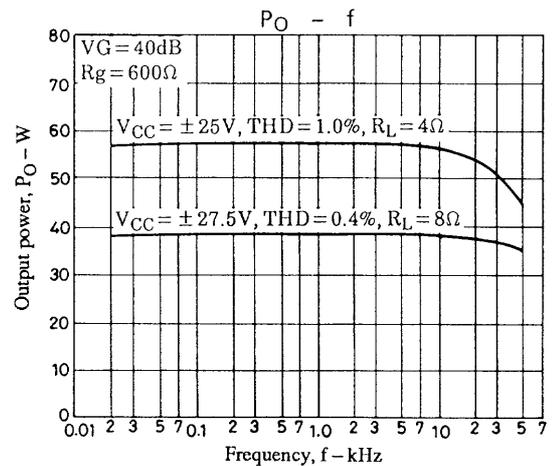
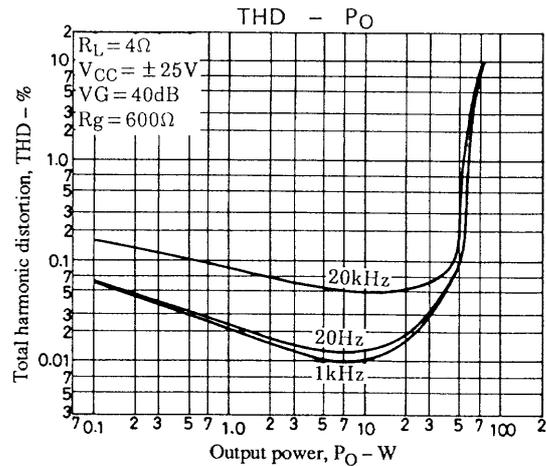
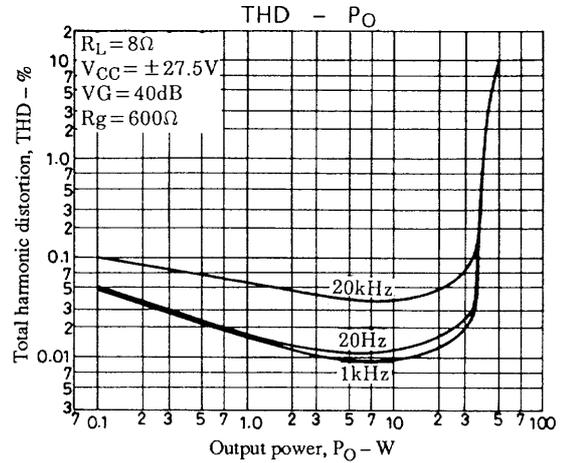
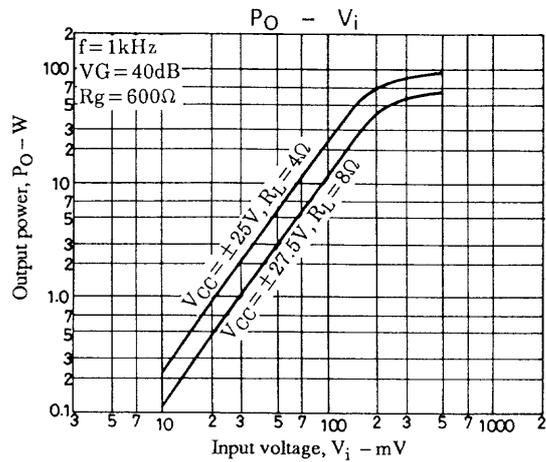
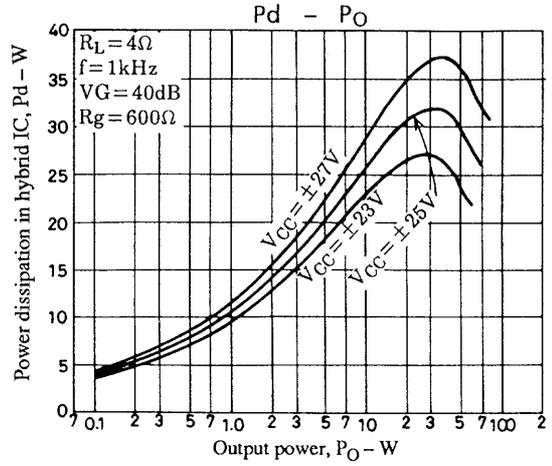
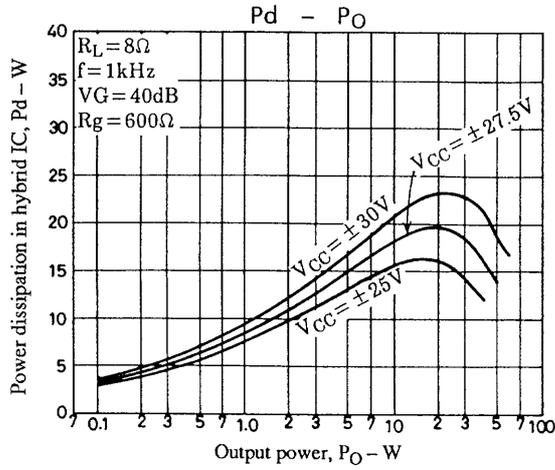
Equivalent Circuit

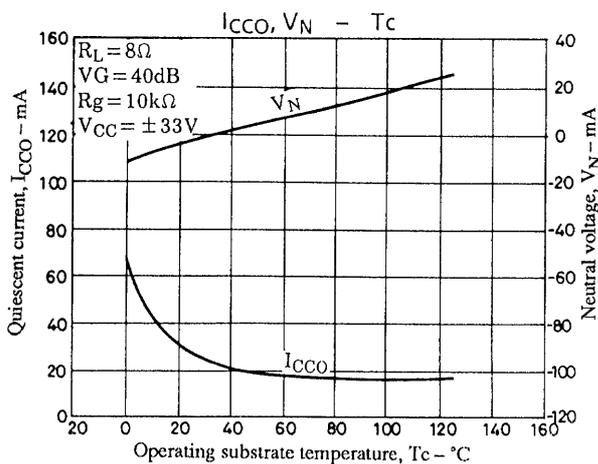
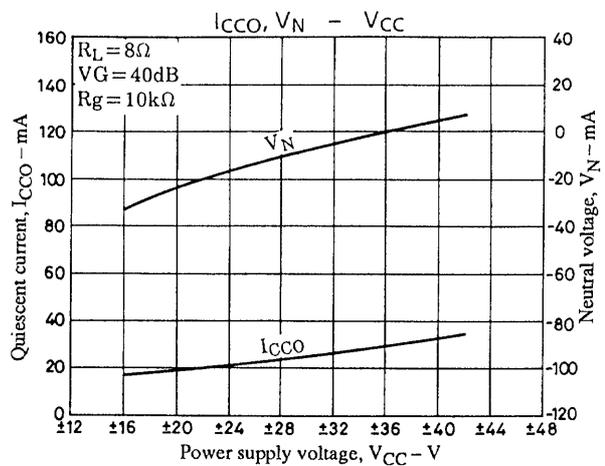
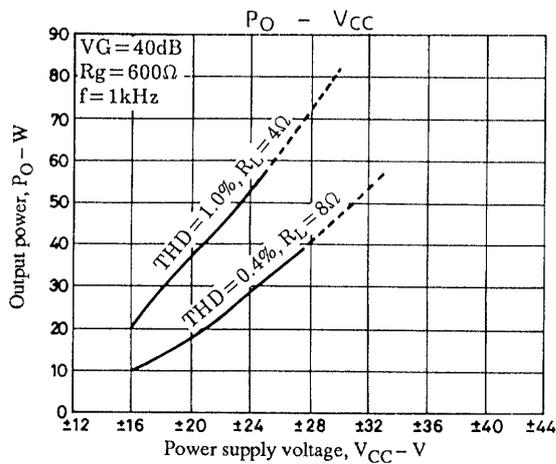


Sample Application Circuit: 30 W min AF Power Amplifier



Unit (resistance:Ω , capacitance: F)





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