

**STK4028X**

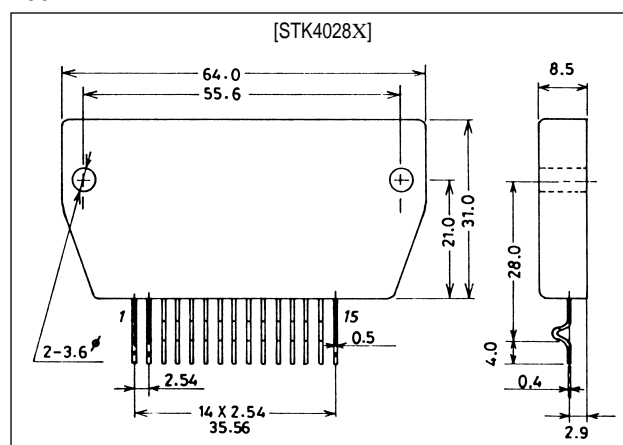
## AF Power Amplifier (Split Power Supply) (30W min, THD = 0.018%)

### Features

- Compact packaging supports slimmer set designs
- Series designed for 30 up to 100W and pin-compatibility
- Simpler heat sink design facilitates thermal design of slim stereo sets
- Current mirror circuit application reduces distortion to 0.018%
- Supports addition of electronic circuits for thermal shut-down and load-short protection circuit as well as pop noise muting which occurs when the power supply switch is turned on and off

### Package Dimensions

unit: mm

**4062**

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	$V_{CC \text{ max}}$		$\pm 42$	V
Thermal resistance	$\theta_{j-c}$		2.1	$^\circ\text{C/W}$
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	$t_s *1$	$V_{CC} = \pm 29\text{V}$ , $R_L = 8\Omega$ , $f = 50\text{Hz}$ , $P_o = 30\text{W}$	2	s

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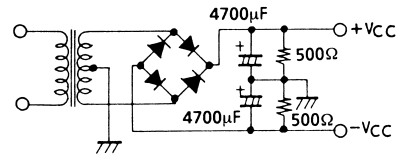
**Operating Characteristics** at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = \pm 29\text{V}$ ,  $R_L = 8\Omega$ ,  $V_G = 40\text{dB}$ ,  $R_g = 600\Omega$ , 10kLPF ON,  
 $R_L$  : Non-inductive load

Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current	$I_{CCO}$	$V_{CC} = \pm 35.5\text{V}$	15		120	mA
Output power	$P_O(1)$	THD = 0.018%, $f = 20\text{Hz to } 20\text{kHz}$	30			W
	$P_O(2)$	$V_{CC} = \pm 26\text{V}$ , THD = 0.04%, $R_L = 4\Omega$ , $f = 1\text{kHz}$	35			W
Total harmonic distortion	THD	$V_{CC} = \pm 29\text{V}$ , $f = 1\text{kHz}$ , $P_O = 1.0\text{W}$			0.008	%
Frequency characteristic	$f_L, f_H$	$V_{CC} = \pm 29\text{V}$ , $P_O = 1.0\text{W}$ , $+0, -3$ dB		20 to 50k		Hz
Input impedance	$r_i$	$V_{CC} = \pm 29\text{V}$ , $f = 1\text{kHz}$ , $P_O = 1.0\text{W}$		55		k $\Omega$
Output noise voltage	$V_{NO} *2$	$V_{CC} = \pm 35.5\text{V}$ , $R_g = 10\text{k}\Omega$			1.2	mVrms
Neutral voltage	$V_N$	$V_{CC} = \pm 35.5\text{V}$	-70	0	+70	mV

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

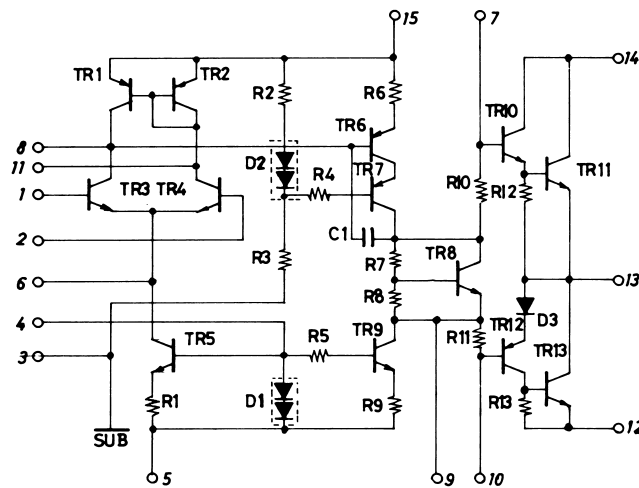
\*1 For measurement of available time for load short-circuit and output noise voltage, use the specified transformer power supply shown right.

\*2 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.

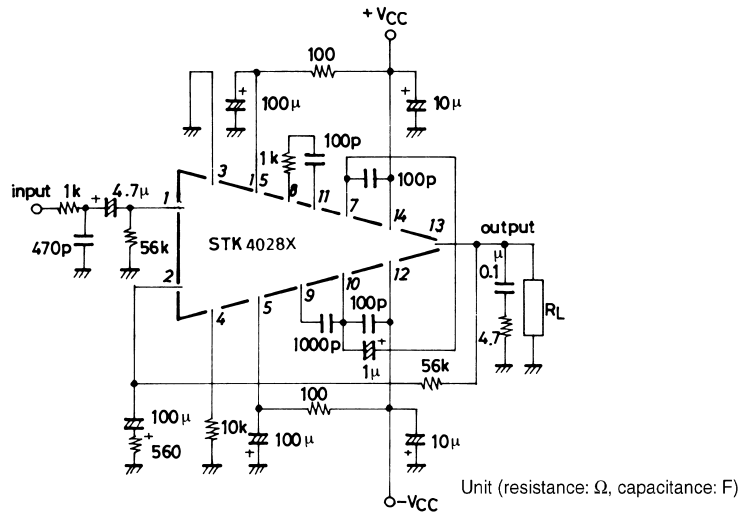


Specified Transformer Power Supply  
(Equivalent to RP-25)

### Equivalent Circuit



**Sample Application Circuit: 30W min 1 channel AF Power Amplifier**



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