



# STK4038 II

## AF Power Amplifier (Split Power Supply) (60 W min, THD = 0.4%)

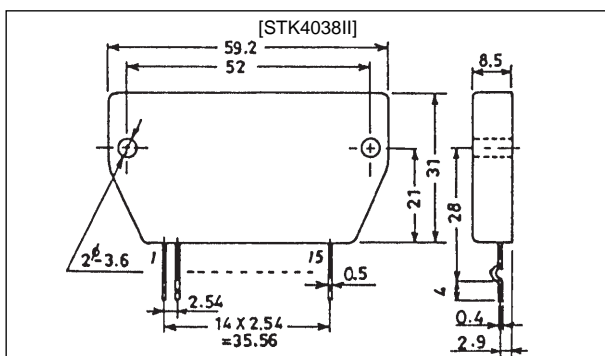
### Features

- 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

### Package Dimensions

unit: mm

4033



### Specifications

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

Parameter	Symbol	Condition	Rating	Unit
Maximum supply voltage	$V_{CC}$ max		$\pm 57$	V
Thermal resistance	$\theta_j\text{-c}$		1.4	$^\circ\text{C}/\text{W}$
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	$t_S^{*1}$	$V_{CC} = \pm 38\text{ V}$ , $R_L = 8\ \Omega$ , $f = 50\text{ Hz}$ , $P_O = 60\text{ W}$	2	s

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

Parameter	Symbol	Condition	Rating	Unit
Recommended supply voltage	$V_{CC}$		$\pm 38$	V
Load resistance	$R_L$		8	$\Omega$

#### Operating Characteristics at $T_a = 25^\circ\text{C}$ , $V_{CC} = \pm 38\text{ V}$ , $R_L = 8\ \Omega$ , $V_G = 40\text{ dB}$ , $R_g = 600\ \Omega$ , $R_L$ (non-inductive)

Parameter	Symbol	Condition	Rating			Unit
			min	typ	max	
Quiescent current	$I_{CCO}$	$V_{CC} = \pm 45.5\text{ V}$	10	20	50	mA
Output power	$P_O$ (1)	THD = 0.4%, $f = 20\text{ Hz}$ to $20\text{ kHz}$	60			W
	$P_O$ (2)	$V_{CC} = \pm 32.5\text{ V}$ , THD = 1.0%, $R_L = 4\ \Omega$ , $f = 1\text{ kHz}$	60			W
Total harmonic distortion	THD	$P_O = 1.0\text{ W}$ , $f = 1\text{ kHz}$			0.3	%
Frequency response	$f_L, f_H$	$P_O = 1.0\text{ W}$ , $+0$ dB, $-3$ dB		20 to 50k		Hz
Input resistance	$r_i$	$P_O = 1.0\text{ W}$ , $f = 1\text{ kHz}$		55		k $\Omega$
Output noise voltage	$V_{NO}^{*2}$	$V_{CC} = \pm 45.5\text{ V}$ , $R_g = 10\text{ k}\Omega$			1.2	mVrms
Neutral voltage	$V_N$	$V_{CC} = \pm 45.5\text{ V}$	-70	0	+70	mV

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

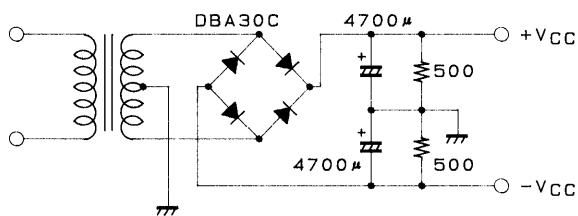
1. Use the transformer power supply shown on the next page when measuring the available time for load shorted and the output noise voltage.
2. Output noise voltage represents the peak value on the rms scale (VTVM). The noise voltage waveform does not include the pulse noise.

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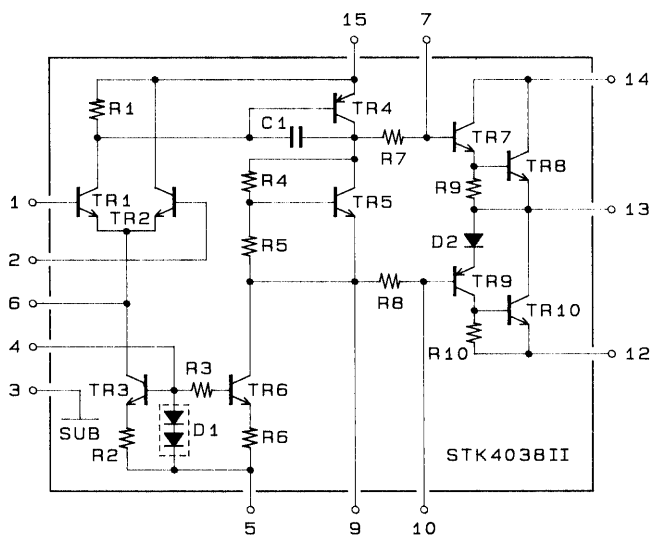
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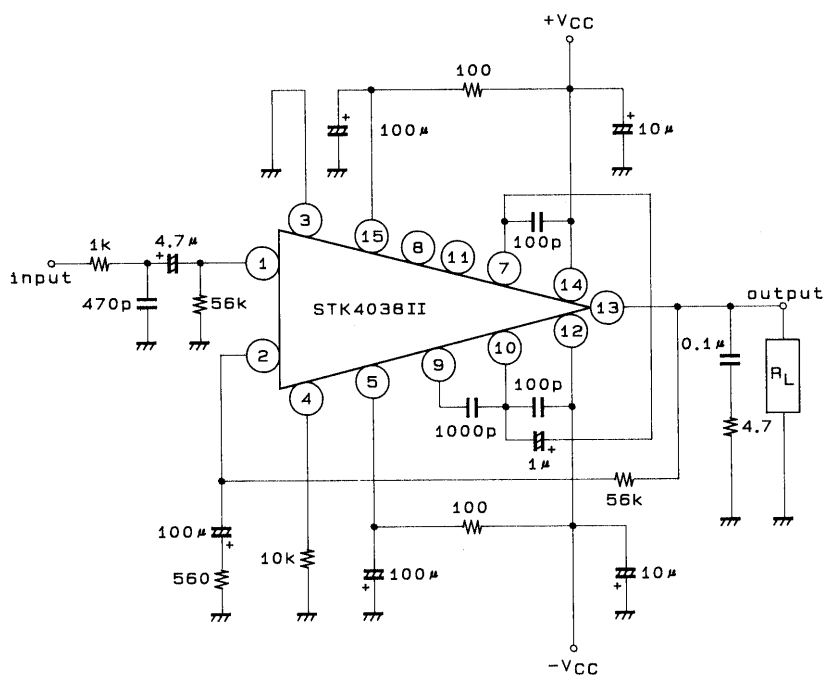
Unit (resistance:  $\Omega$ , capacitance: F)

Specified Transformer Power Supply  
(RP-25 equivalent)

## Equivalent Circuit



## Application Circuit: 60 W min AF Power Amplifier



Unit (resistance:  $\Omega$ , capacitance: F)

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