Ordering number: EN 4590B

Thick Film Hybrid IC

# STK4231V

## AF Power Amplifier (Split Power Supply) (100W + 100W min, THD = 0.08%)

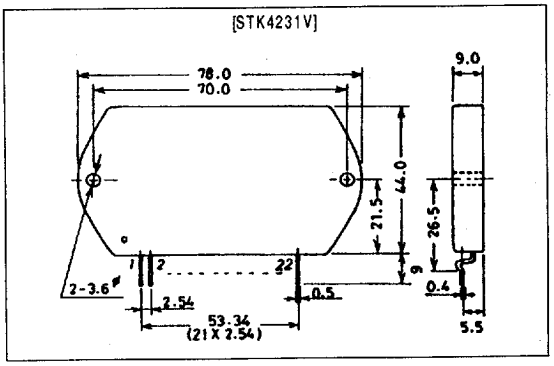
### Features

- Muting circuit built-in to isolate all types of shock noise
- Current mirror circuit for low 0.08% total harmonic distortion
- Pin compatible with the STK4201II series (THD = 0.4%) and the STK4141X series (THD = 0.02%)

### Package Dimensions

unit: mm

**4086A**




### Specifications

#### Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Maximum supply voltage | $V_{CC}$ max | | ±75 | V |
| Thermal resistance | θj-c | | 1.2 | °C/W |
| Junction temperature | Tj | | 150 | °C |
| Operating substrate temperature | Tc | | 125 | °C |
| Storage temperature | Tstg | | –30 to +125 | °C |
| Available time for load short-circuit[1] | $t_s$ | $V_{CC}$ = ±51V, $R_L$ = 8Ω, f = 50Hz, $P_O$ = 100W | 1 | s |

#### Recommended Operating Conditions at Ta = 25°C

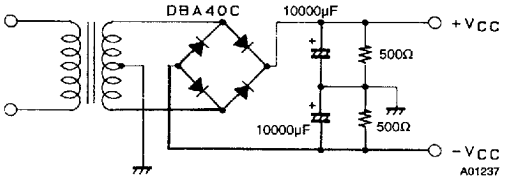
| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Recommended supply voltage | $V_{CC}$ | | ±51 | V |
| Load resistance | $R_L$ | | 8 | Ω |

## Operating Characteristics at Ta = 25°C, $V_{CC}$ = ±51V, $R_L$ = 8Ω (noninductive load), Rg = 600Ω, VG = 40dB

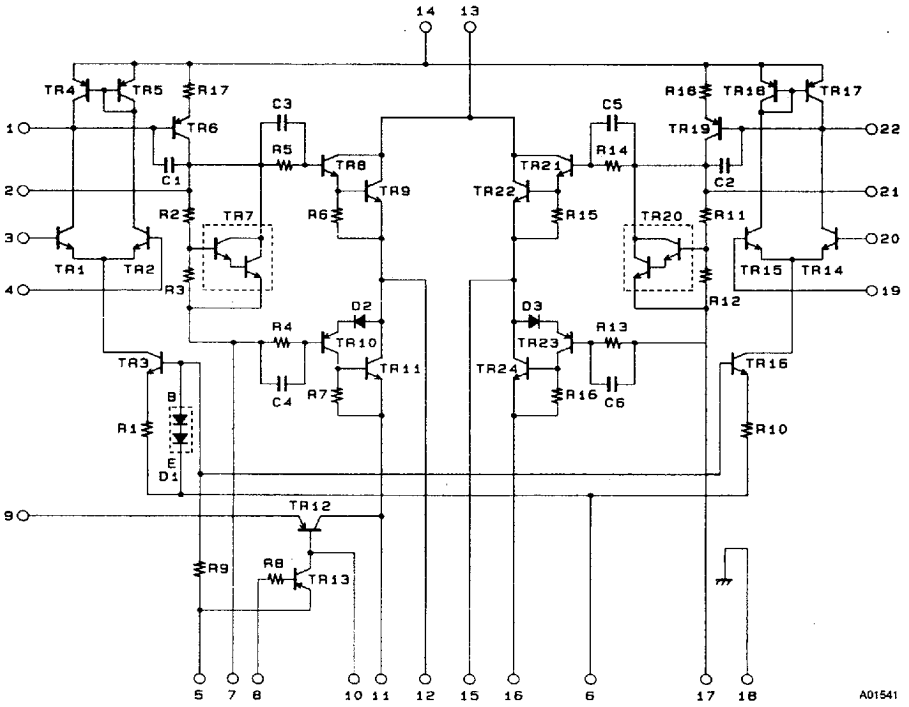
| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|---|---|---|---|---|---|
| Quiescent current | $I_{CCO}$ | $V_{CC}$ = ±61.5V | 20 | 40 | 100 | mA |
| Output power | $P_O$ | THD = 0.08%, f = 20Hz to 20kHz | 100 | – | – | W |
| Total harmonic distortion | THD | $P_O$ = 1.0W, f = 1kHz | – | – | 0.08 | % |
| Frequency response | $f_L$, $f_H$ | $P_O$ = 1.0W, $^{+0}_{-3}$dB | – | 20 to 50k | – | Hz |
| Input impedance | $r_i$ | $P_O$ = 1.0W, f = 1kHz | – | 55 | – | kΩ |
| Output noise voltage[2] | $V_{NO}$ | $V_{CC}$ = ±61.5V, Rg = 10kΩ | – | – | 1.2 | mVrms |
| Neutral voltage | $V_N$ | $V_{CC}$ = ±61.5V | –70 | 0 | +70 | mV |
| Muting voltage | $V_M$ | | –2 | –5 | –10 | V |

Notes.
All tests are measured using a regulated voltage supply unless otherwise specified.
1. Available time for load short-circuit and output noise voltage are measured using the transformer supply specified below.
2. The output noise voltage is the peak value of an average-reading meter with an rms value scale (VTVM). The noise voltage waveform includes no flicker noise.

### Specified Transformer Supply (MG-200 or Equivalent)




## Equivalent Circuit



## Sample Application Circuit (100W min 2-Channel AF Power Amplifier)