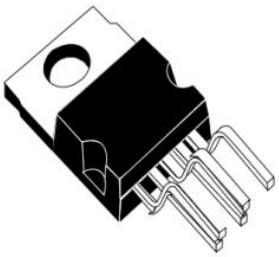
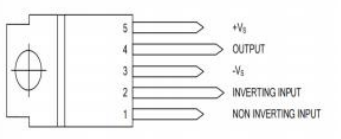
## General Description

The XBLW TDA2030A is a monolithic integrated circuit in Pentawatt package, intended for use as an audio class AB audio amplifier. Thanks to its high power capability the TDA2030A is able to provide up to 35W true rms power into 4 ohm load@ THD =10%, VS = 36V, f = 1KHz and up to 32W into 8ohm load @THD = 10%, VS = 44V, f = 1KHz. Moreover, the TDA2050A delivers typically 50W music power into 4 ohm load over 1 sec at VS=22.5V, f = 1KHz. The high power and very low harmonic and crossover distortion (THD = 0.05% typ, @ VS = 44V, PO = 0.1 to 15W, RL=8ohm, f = 100Hz to 15KHz) make the device most suitable for both HiFi and high class TV sets.)

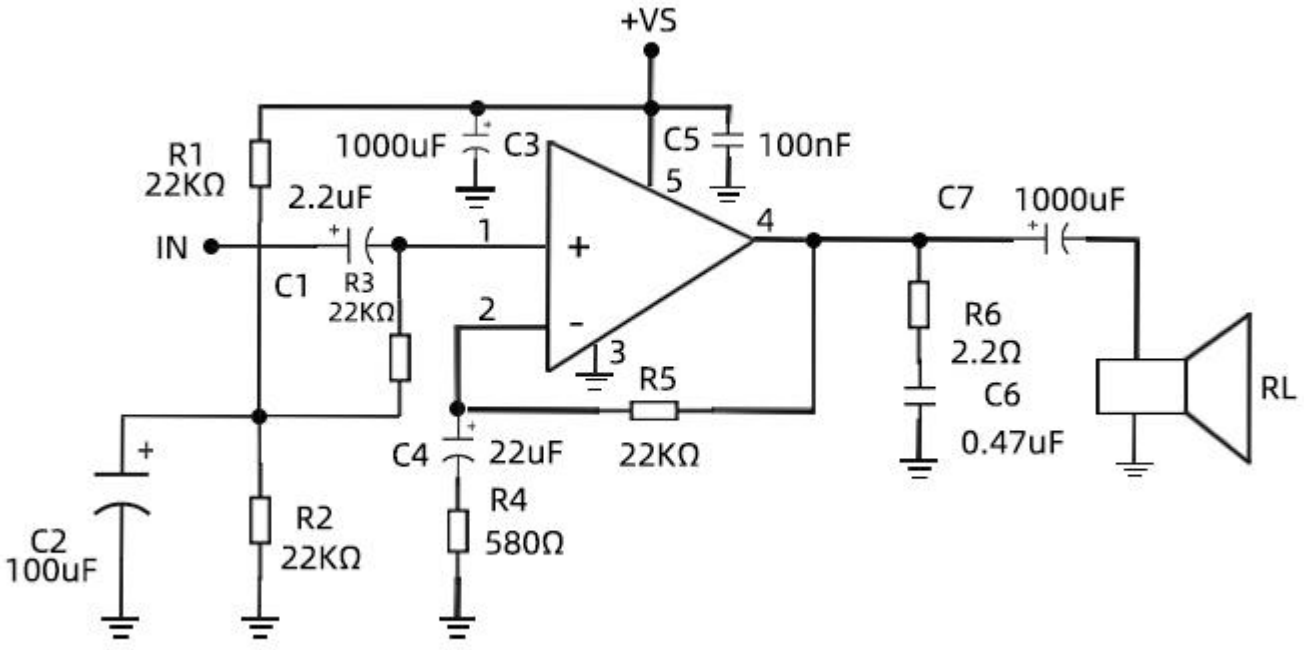





## Ordering Information

| Product Model | Package Type | Marking | Packing | Packing Qty |
|---|---|---|---|---|
| XBLW TDA2030A | TO-220B | TDA2030A | Tube | 1000PCS/Box |
| | | | | |
| | | | | |
| | | | | |

## TYPICAL APPLICATIONS



## ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| Vs | Supply Voltage | ± 25 | V |
| Vi | Input Voltage | Vs | |
| Vi | Differential Input Voltage | ± 15 | V |
| Io | Peak Output Current (internally limited) | 4.5 | A |
| Ptot | Total Power Dissipation at Tcase = 90 °C | 25 | W |
| Tstg, Tj | Storage and Junction Temperature | – 40 to + 150 | °C |

## THERMAL DATA

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| Rth (j-case) | Thermal Resistance Junction-case Max | 3 | °C/W |

## ELECTRICAL CHARACTERISTICS

(Refer to the test circuit, VS = ± 18V, Tamb = 25°C unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Vs | Supply Voltage | | ± 4.5 | | ± 25 | V |
| Id | Quiescent Drain Current | | | 26 | 35 | mA |
| Ib | Input Bias Current | VS = ± 22V | | 0.2 | 2 | µA |
| Vos | Input Offset Voltage | VS = ± 22V | | ± 2 | ± 20 | mV |
| Ios | Input Offset Current | | | ± 20 | ±200 | nA |
| PO | Output Power | d = 0.5%, Gv = 26dB f = 40 to 15KHz RL = 4Ω | 24 | 28 | | W |
| | | RL = 8Ω | | 18 | | W |
| | | VS = ± 22V RL = 8Ω | 22 | 25 | | W |
| BW | Power Bandwidth | Po = 15W RL = 4Ω | | 40 | | kHz |
| SR | Slew Rate | | | 6 | | V/µsec |
| Gv | Open Loop Voltage Gain | f = 1kHz | | 80 | | dB |
| Gv | Closed Loop Voltage Gain | f = 1kHz | 30 | 30.5 | 31 | dB |
| d | Total Harmonic Distortion | Po = 0.1 to 14W RL = 4Ω | | 0.08 | | % |
| | | f = 40 to 15KHz f = 1kHz | | 0.03 | | % |
| | | Po = 0.1 to 9W | | | | |
| | | f = 40 to 15000Hz RL = 8Ω | | 0.5 | | % |
| d2 | Second Order CCIF Intermodulation Distortion | | | 0.03 | | % |
| d3 | Third Order CCIF Intermodulation Distortion | | | 0.08 | | % |
| eN | Input Noise Voltage | B = Curve A | | 2 | | µV |
| | | B = 22Hz to 22kHz | | 3 | 10 | µV |
| iN | Input Noise Current | B = Curve A | | 50 | | pA |
| | | B = 22Hz to 22kHz | | 80 | 200 | pA |
| S/N | Signal to Noise Ratio | RL = 4Ω, Rg = 10kΩ, B = Curve A | | | | |
| | | PO = 15W | | 106 | | dB |
| | | PO = 1W | | 94 | | dB |
| Ri | Input Resistance (pin 1) | (open loop) f = 1kHz | 0.5 | 5 | | MΩ |
| SVR | Supply Voltage Rejection | RL = 4Ω, Rg = 22kΩ Gv = 26dB, f = 100 Hz | | 45 | | dB |
| Tj | Thermal Shut-down Junction | | | 140 | | °C |

## Figure 1 : Single Supply Amplifier

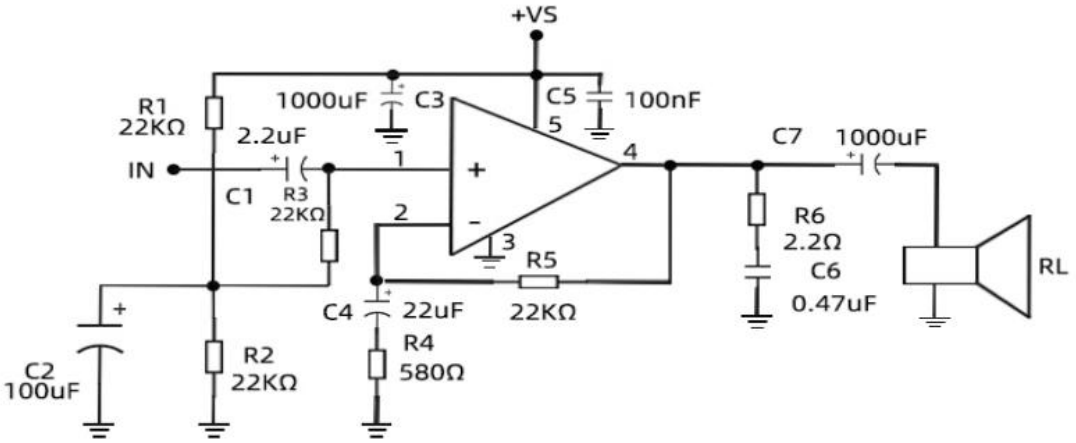



**Figure 2 :** Open Loop-frequency Response

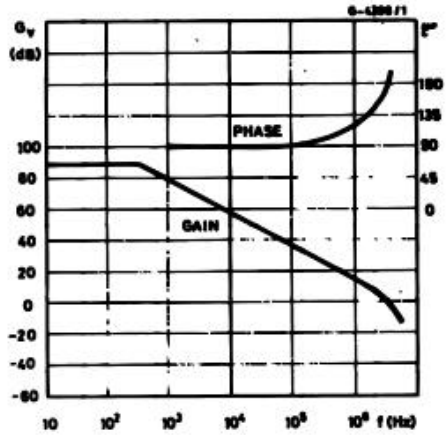



**Figure 3 :** Output Power versus Supply Voltage

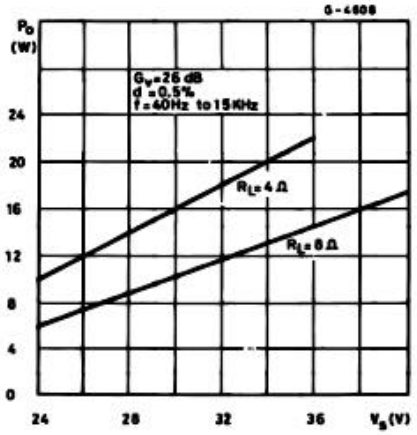



**Figure 4 :** Total Harmonic Distortion versus Output Power (test using rise filters)

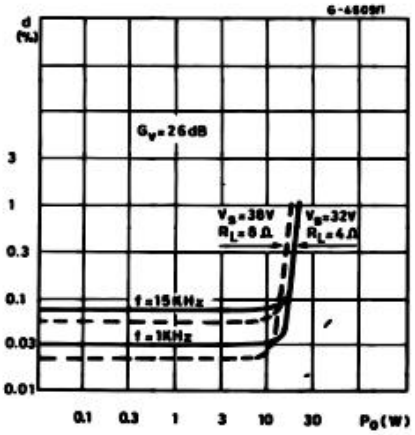



**Figure 5 :** Two Tone CCIF Intremodulation Distortion

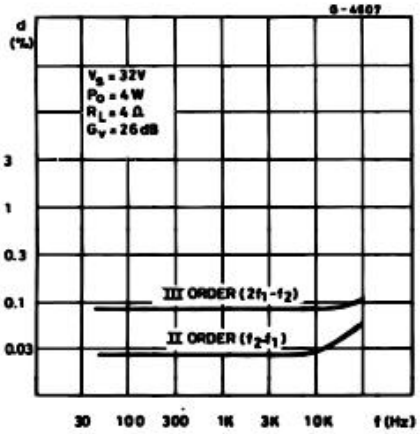


**Figure 6 :** Large Signal Frequency Response

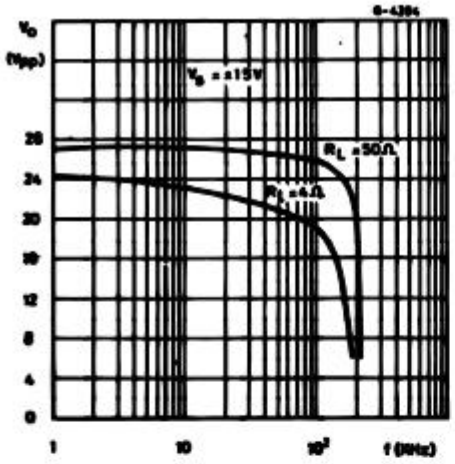



**Figure 7 :** Maximum Allowable Power Dissipation versus Ambient Temperature

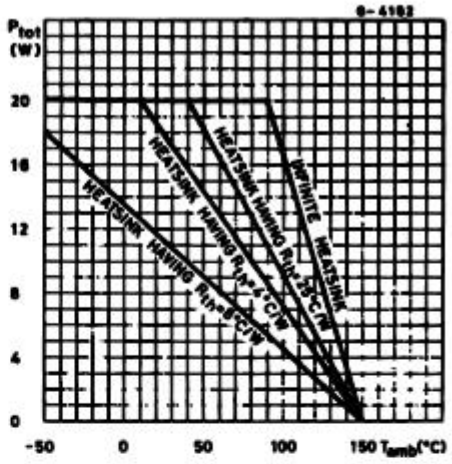



**Figure 8 :** Output Power versus Supply Voltage

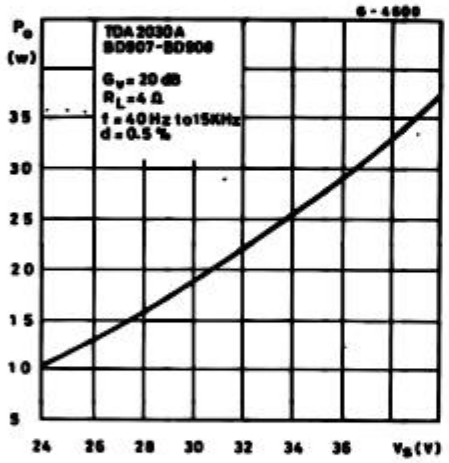



**Figure 9 :** Total Harmonic Distortion versus Output Power

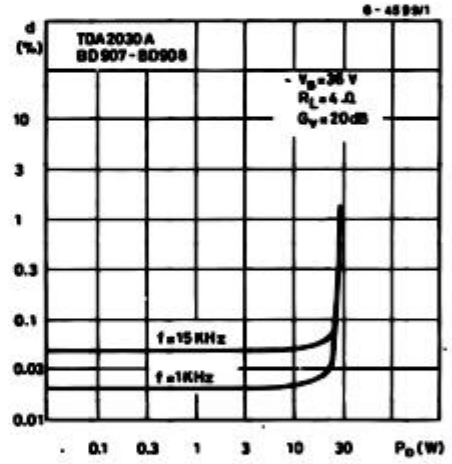



**Figure 10 :** Output Power versus Input Level

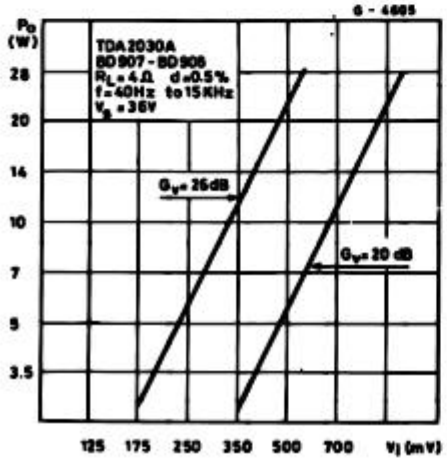



**Figure 11 :** Power Dissipation versus Output Power

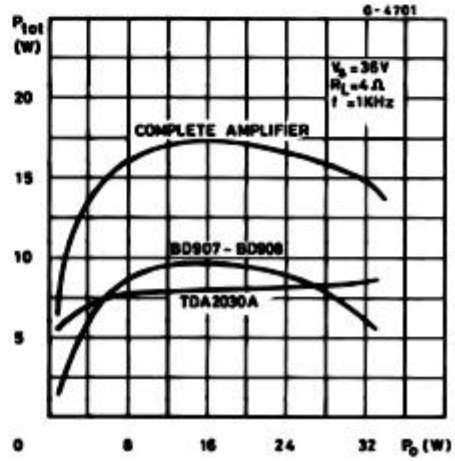


**Figure 12 ：Typical Amplifier with Spilt Power Supply**

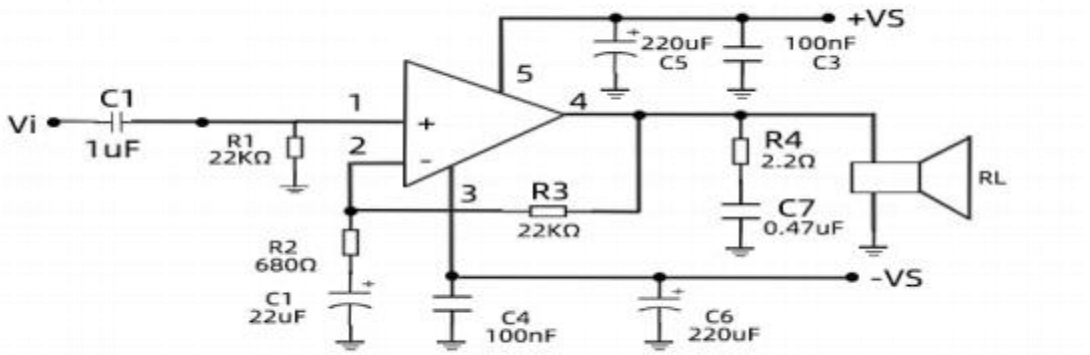
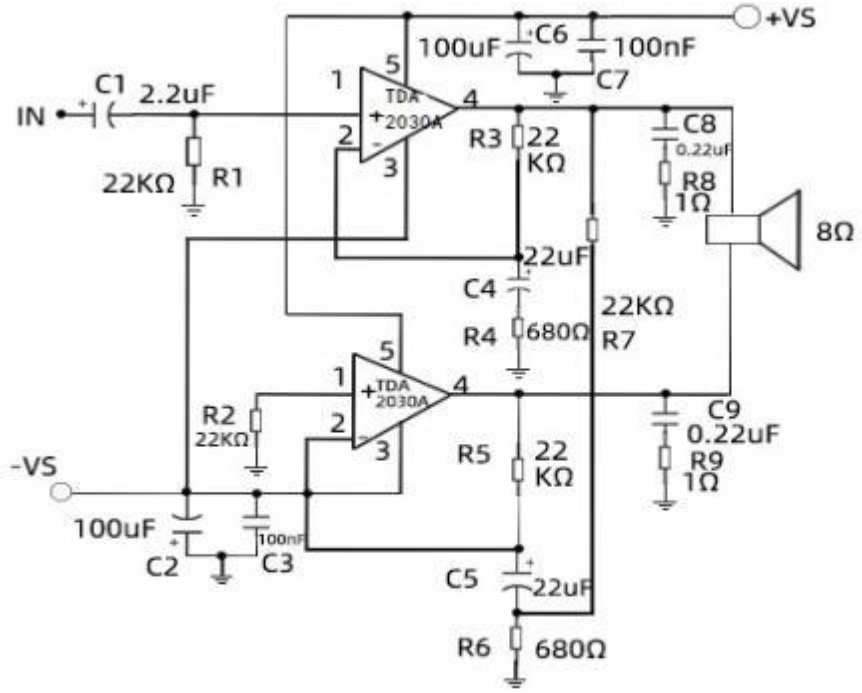


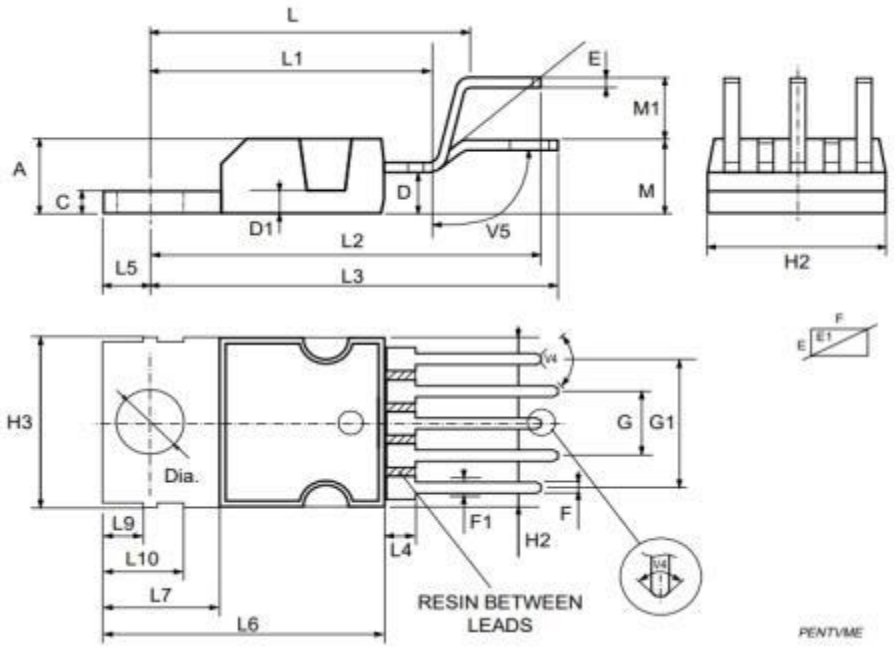

**Figure 13 ：Bridge Amplifier with Split Power Supply (PO = 34W , VS = ± 16V )**



## Outline Drawing

TO-220B
: mm

Unit




| DIM. | mm | | | inch | | |
|---|---|---|---|---|---|---|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | | | 4.8 | | | 0.189 |
| C | | | 1.37 | | | 0.054 |
| D | 2.4 | | 2.8 | 0.094 | | 0.110 |
| D1 | 1.2 | | 1.35 | 0.047 | | 0.053 |
| E | 0.35 | | 0.55 | 0.014 | | 0.022 |
| E1 | 0.76 | | 1.19 | 0.030 | | 0.047 |
| F | 0.8 | | 1.05 | 0.031 | | 0.041 |
| F1 | 1.0 | | 1.4 | 0.039 | | 0.055 |
| G | 3.2 | 3.4 | 3.6 | 0.126 | 0.134 | 0.142 |
| G1 | 6.6 | 6.8 | 7.0 | 0.260 | 0.268 | 0.276 |
| H2 | | | 10.4 | | | 0.409 |
| H3 | 10.05 | | 10.4 | 0.396 | | 0.409 |
| L | 17.55 | 17.85 | 18.15 | 0.691 | 0.703 | 0.715 |
| L1 | 15.55 | 15.75 | 15.95 | 0.612 | 0.620 | 0.628 |
| L2 | 21.2 | 21.4 | 21.6 | 0.831 | 0.843 | 0.850 |
| L3 | 22.3 | 22.5 | 22.7 | 0.878 | 0.886 | 0.894 |
| L4 | | | 1.29 | | | 0.051 |
| L5 | 2.6 | | 3.0 | 0.102 | | 0.118 |
| L6 | 15.1 | | 15.8 | 0.594 | | 0.622 |
| L7 | 6.0 | | 6.6 | 0.236 | | 0.260 |
| L9 | 2.1 | | 2.7 | 0.008 | | 0.106 |
| L10 | 4.3 | | 4.8 | 0.17 | | 0.189 |
| M | 4.23 | 4.5 | 4.75 | 0.167 | 0.178 | 0.187 |
| M1 | 3.75 | 4.0 | 4.25 | 0.148 | 0.157 | 0.167 |
| V4 | 40° (typ.) | | | | | |
| V5 | 90° (typ.) | | | | | |
| Dia | 3.65 | | 3.85 | 0.144 | | 0.152 |

Statement：

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✧ Product performance is never ending, Shenzhen xinbole electronics co., ltd will be dedicated to provide customers with better performance, better quality of integrated circuit products.

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