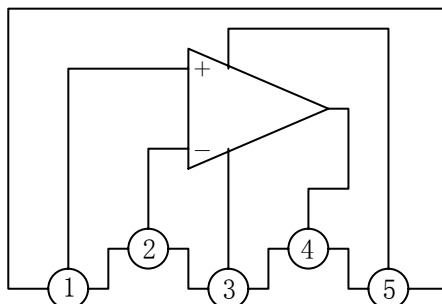


10W AUDIO AMPLIFIER—TDA2003

DESCRIPTION

The TDA2003 has very low number of external components, ease of assembly, space and cost saving, are maintained. The device provides a high output current capability (up to 3.5A) very low harmonic and cross-over distortion. Completely safe operation is guaranteed due to protection against DC and AC short circuit between all pins and ground, thermal over-range, load dump voltage surge up to 40V and fortuitous open ground.

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Tamb=25°C)

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|------------------|----------|------|
| Peak Supply Voltage(50ms) | V _{ccp} | 40 | V |
| DC Supply Voltage | V _{cc} | 28 | V |
| Operating Supply Voltage | V _{cc} | 18 | V |
| Output Peak Current(repetitive) | I _o | 3.5 | A |
| Output Peak Current (non repetitive) | I _o | 4.5 | A |
| Power Dissipation at T _c =90°C | P _D | 20 | W |
| Ambient operating temperature | T _{opr} | -20~+75 | °C |
| Storage And Junction Temperature | T _{stg} | -40~+150 | °C |

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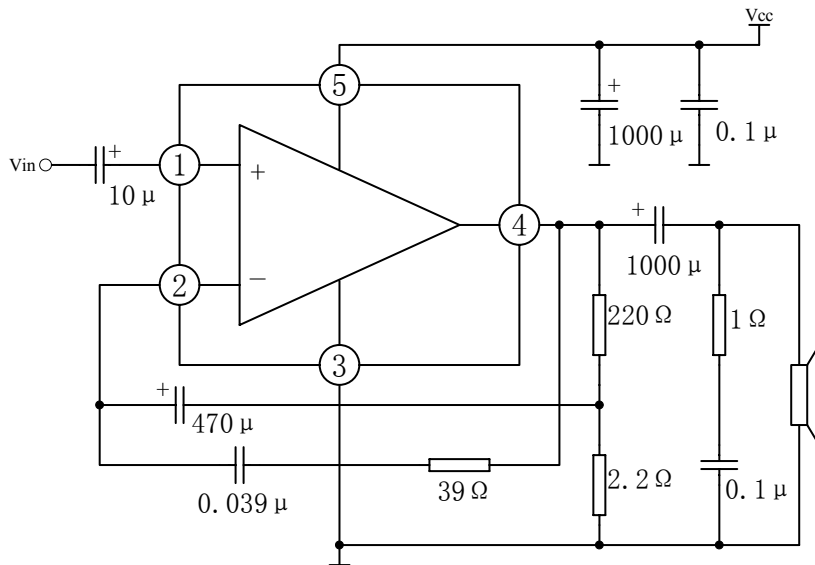
Add: No.5 Xijin Road, National Hi-Tech Industrial Development Zone, Wuxi Jiangsu China
 Tel: 86-510-85205117 86-510-85205106 Fax: 86-510-85205110 Website: www.e-youda.com
 SHENZHEN OFFICE Tel: 86-755-83740369 Fax: 86-755-83741418

ELECTRICAL CHARACTERISTICS

(Tamb=25°C, V=16.5V, f=1kHz, Unless otherwise specified)

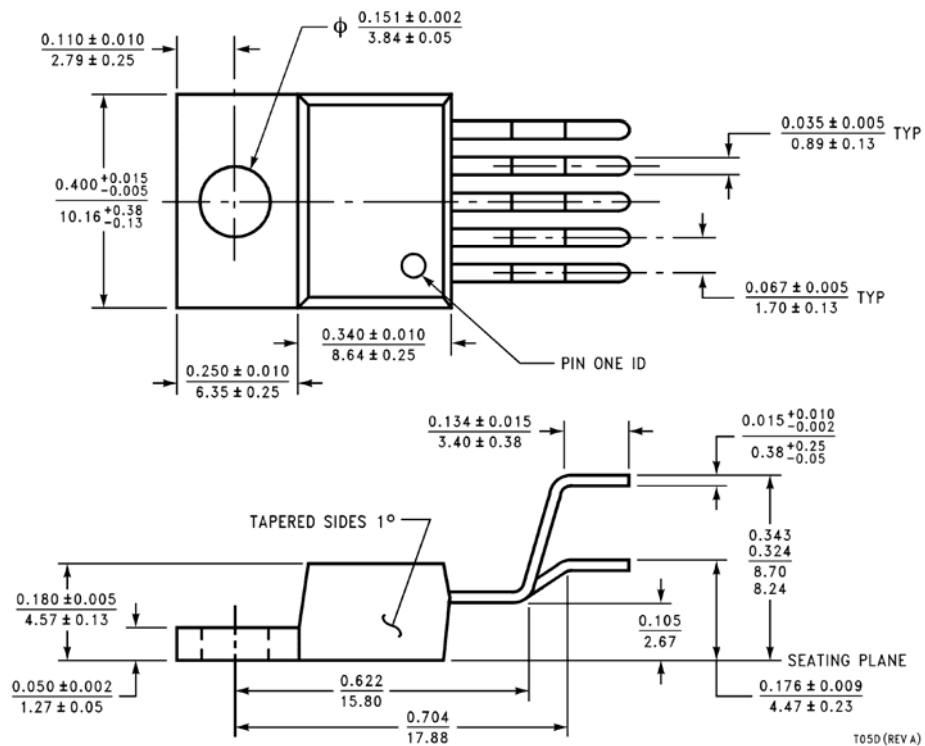
| PARAMETER | SYMBOL | TEST CONDITIONS | NIN | TYP | MAX | UNIT |
|----------------------------|--------|------------------------------------|-------------|------|------|------|
| Supply Voltage | Vcc | | 8 | | 18 | V |
| Quiescent Output Voltage | Vo | | 6.1 | 6.9 | 7.7 | V |
| Quiescent Drain Current | Iccq | | | 44 | 50 | mA |
| Output Power | Po | THD=10%, RL=4Ω | 5.5 | 6 | | W |
| | | THD=10%, RL=2Ω | 9 | 10 | | |
| | | THD=10%, RL=3.2Ω | | 7.5 | | |
| | | THD=10%, RL=1.6Ω | | 12 | | |
| Input Saturation Voltage | Vim | | | 300 | | mV |
| Input Sensitivity | Vi | Po=0.5W, RL=4Ω | | 14 | | mV |
| | | Po=6W, RL=4Ω | | 55 | | |
| | | Po=0.5W, RL=2Ω | | 10 | | |
| | | Po=10W, RL=2Ω | | 50 | | |
| Frequency Response | BW | Po=1W, RL=4Ω | 40 to 15000 | | | Hz |
| Distortion | THD | Po=0.05~4.5W, RL=4Ω | | 0.15 | | % |
| | | Po=0.05~7.5W, RL=2Ω | | 0.15 | | % |
| Input Resistance (pin 1) | Zi | f=1kHz | 70 | 150 | | KΩ |
| Input Noise Current | INI | | | 60 | 200 | pA |
| Input Noise Voltage | VNI | | | 1 | 5 | μV |
| Voltage Gain (Open Loop) | Gvo | f=1kHz | | 80 | | dB |
| | | f=10kHz | | 60 | | dB |
| Voltage Gain (closed Loop) | Gv | RL=4Ω | 39.3 | 40 | 40.3 | dB |
| Efficiency | η | Po=6W, RL=4Ω | | 69 | | % |
| | | Po=10W, RL=2Ω | | 65 | | % |
| Supply Voltage Rejection | SVR | f=100Hz, Vr=0.5V Rg=10kΩ, RL=4Ω | 30 | 36 | | dB |

APPLICATION CIRCUIT



OUTLINE DRAWING

Inches / millimeters



TO50 (REV A)