

TOSHIBA

Toshiba TA8266HQ Description And Application Manual

Max power 35 w btl × 4 ch audio power ic

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TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic
TOSHIBA Max Power 35 W BTL X 4 ch Audio Power IC

The TA8266HQ is 4 ch BTL audio power amplifier for car audio application.

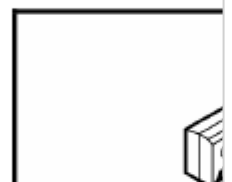
This IC can generate more high power: P is included the pure complementary PNP and NPN transistor output stage.

It is designed low distortion ratio for 4 ch BTL audio power amplifier, built-in stand-by function, muting function, and diagnosis circuit which can detect output to V over voltage input mode.

Additionally, the AUX amplifier and various kind of protector for car audio use is built-in.

Features

- High power : P



MAX (1) = 35 W (typ.)

OUT

(V

= 14.4 V, f = 1 kHz, JEITA max, R

CC

: P

MAX (2) = 31 W (typ.)

OUT

(V

= 13.7 V, f = 1 kHz, JEITA max, R

CC

: P

(1) = 23 W (typ.)

OUT

(V

= 14.4 V, f = 1 kHz, THD = 10%, R

CC

: P

(2) = 20 W (typ.)

OUT

(V

= 13.2 V, f = 1 kHz, THD = 10%, R

CC

•

Built-in diagnosis circuit (pin 25)

•

Low distortion ratio: THD = 0.02% (typ.)

(V

CC

•

Low noise: V

= 0.18 mVrms (typ.)

NO

(V

= 13.2 V, R

CC

•

Built-in stand-by switch function (pin 4)

•

Built-in muting function (pin 22)

•

Built-in AUX amplifier from single input to 2 channels output (pin 16)

•

Built-in various protection circuit

:

Thermal shut down, over voltage, out to GND, out to V

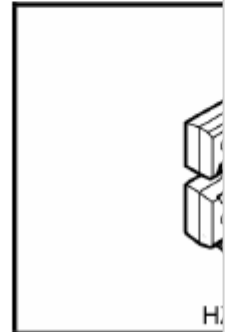
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Operating supply voltage: V

Note 1: Install the product correctly. Otherwise, it may result in break down, damage and/or degradation to the product or equipment.

Note 2: These protection functions are intended to avoid some output short circuits or other abnormal conditions temporarily. These protect functions do not warrant to prevent the IC from being damaged.

- In case of the product would be operated with exceeded guaranteed operating ranges, these protection features may not operate and some output short circuits may result in the IC being



damaged.

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TA8266HQ

MAX = 35 W as it

OUT

/GND short and

CC

L

L

L

L

= 13.2 V, f = 1 kHz, P

= 5 W, R

OUT

= 0 Ω, G

= 34dB, BW = 20 Hz~20 kHz)

g

V

= 9~18 V

CC (opr)

1

Weight: 7.7 g (typ.)

= 4 Ω)

= 4 Ω)

= 4 Ω)

= 4 Ω)

= 4 Ω)

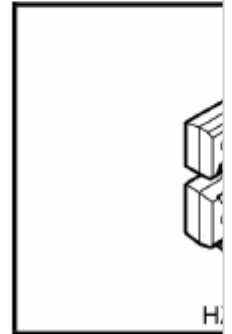
L

, out to out short, speaker burned

CC

TA8266HQ

2006-04-28



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Summary of Contents for Toshiba TA8266HQ

[Page 1](#) TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic TA8266HQ Max Power 35 W BTL × 4 ch Audio Power IC The TA8266HQ is 4 ch BTL audio power amplifier for car audio application. This IC can generate more high power: P...

[Page 2: Block Diagram](#)

TA8266HQ Block Diagram OUT1 (+) PW-GND1 OUT1 (-) OUT2 (+) PW-GND2 OUT2 (-) AUX IN OUT3 (+) PW-GND3 OUT3 (-) OUT4 (+) PW-GND4 OUT4 (-) PRE-GND DIAGNOSIS STBY MUTE : PRE-GND : PW-GND Note3: Some of the functional blocks, circuits, or constants in the block diagram may be omitted or simplified for explanatory purpose.

[Page 3](#) TA8266HQ Caution and Application Method (Description is made only on the single channel.) 1. Voltage Gain Adjustment This IC has no NF (negative feedback) terminals. Therefore, the voltage gain can't be adjusted, but it makes the device a space and total costs saver.

[Page 4: Muting Function](#)

TA8266HQ RELAY Large current capacity switch BATTERY BATTERY FROM MICROCOMPUTER - Conventional Method - DIRECTLY FROM Small current capacity switch MICROCOMPUTER BATTERY BATTERY Stand-By Stand-By - Stand-by Switch Method - Figure 3 3. Muting Function (pin 22) By means of controlling pin 22 less than 0.5 V, it can make the audio muting condition.

[Page 5: Over Voltage Protector](#)

TA8266HQ 4. AUX Input (pin 16) 20dB AMP. The pin 16 is for input terminal of AUX amplifier. The total gain is 0dB by using of AUX amplifier. Therefore, the μ -COM can directly drive the OUT (+) AUX amplifier. BEEP sound or voice synthesizer signal can be input to pin 16 directly.

[Page 6](#) TA8266HQ 6. Prevention of speaker burning accident (In Case of Rare Short Circuit of Speaker) When the direct current resistance between OUT + and OUT - terminal becomes 1 Ω or less and output current over 4 A flows, this IC makes a protection circuit operate and suppresses the current into a speaker.

[Page 7](#) TA8266HQ Applications When output terminals short-circuit to V or GND, the voltage of 25pin is fixed to "L". And when shorting OUT + to OUT -, "L" and "H" are switched according to an input signal. Therefore, it is possible to judge how the power IC condition is if a micro-controller detects the 25pin voltage that is smoothed out with LPF.

[Page 8: Absolute Maximum Ratings](#)

TA8266HQ (Ta = 25°C) Absolute Maximum Ratings Characteristics Symbol Rating Unit Peak supply voltage (0.2 s) CC (surge) DC supply voltage CC (DC) Operation supply voltage CC (opr) Output current (peak) O (peak) Power dissipation (Note5) -40~85 Operation temperature °C -55~150...

[Page 9: Test Circuit](#)

TA8266HQ Test Circuit OUT1 (+) 0.22 μ F PW-GND1 OUT1 (-) OUT2 (+) 0.22 μ F PW-GND2 OUT2 (-) 0.22 μ F AUX IN OUT3 (+) 0.22 μ F PW-GND3 OUT3 (-) OUT4 (+) 0.22 μ F PW-GND4 OUT4 (-) PRE-GND DIAGNOSIS STBY MUTE : PRE-GND...

[Page 10](#) TA8266HQ T.H.D - P T.H.D - P V CC = 13.2 V f = 1 kHz R L = 4 Ω R L = 4 Ω 10 kHz 100 Hz 9.0 V 13.2 V 1 kHz 16.0 V 0.01 0.01...

[Page 11](#) TA8266HQ - R R.R. - f V CC = 13.2 V V CC = 13.2 V R L = 4 Ω -10 R L = 4 Ω BW = 20 Hz~20 kHz R g = 620 Ω -20 V rip = 0dBm -30...

[Page 12](#) TA8266HQ - f - P 16 V 13.2 V V CC = 13.2 V R L = 4 Ω f = 1 kHz V OUT = 0dBm R L = 4 Ω 10 k 100 k Frequency f (Hz) Output power P /ch (C) MAX -Ta...

[Page 13: Package Dimensions](#)

TA8266HQ Package Dimensions Weight: 7.7 g (typ.) 2006-04-28...

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[Page 15](#) TA8266HQ • Use an appropriate power supply fuse to ensure that a large current does not continuously flow in case of over current and/or IC failure. The IC will fully break down when used under conditions that exceed its absolute maximum ratings, when the wiring is routed improperly or when an abnormal pulse noise occurs from the wiring or load, causing a large current to continuously flow and the breakdown can lead smoke or ignition.

[Page 16](#) It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.