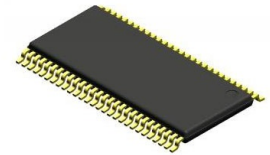


Audio Amp Speaker 2-CH Stereo/4-CH Stereo 90W Class-D Automotive 56-Pin HSSOP EP T/R



Images are for reference only

Manufacturer: [Texas Instruments, Inc](#)

Package/Case: HSSOP56

Product Type: Amplifier ICs

RoHS: RoHS Compliant/Lead free 

Lifecycle: Active

[Inquiry](#)

General Description

The TAS6424M-Q1 device is a four-channel digital-input Class-D audio amplifier that implements a 2.1 MHz PWM switching frequency enabling a cost-optimized solution in a very small PCB size, full operation down to 4.5 V for start/stop events, and exceptional sound quality with up to 40 kHz audio bandwidth.

The output switching frequency can be set either above the AM band, which eliminates AM-band interferences and reduces output filtering and cost, or below the AM band to optimize efficiency.

The device has a built-in load diagnostic function for detecting and diagnosing misconnected outputs as well as detection of AC-coupled tweeters to help to reduce test time during the manufacturing process.

The TAS6424M-Q1 Class-D audio amplifier is designed for use in automotive head units and external amplifier modules. The device provides four channels at 27 W into 4 at 10% THD+N and 45 W into 2 at 10% THD+N from a 14.4 V supply.

For pin compatible one, two and four-channel devices see the TAS6421-Q1, TAS6422-Q1, TAS6424L-Q1 and TAS6424-Q1.

Key Features

AEC-Q100 Qualified for Automotive Applications
Device Temperature Grade 1:
-40°C to +125°C T_A

Advanced Load Diagnostics
DC Diagnostics run without Input Clocks

AC Diagnostic for Tweeter Detection with Impedance and Phase Response

Easily meet CISPR25-L5 EMC Specification

Audio Inputs
4 Channel I²S or 4/8-Channel TDM Input

Input Sample Rates: 44.1 kHz, 48 kHz, 96 kHz

Input Formats: 16-bit to 32-bit I²S, and TDM

Audio Outputs
Four-Channel Bridge-Tied Load (BTL)

Two-Channel Parallel BTL (PBTL)

Up to 2.1 MHz Output Switching Frequency

27 W, 10% THD Into 4 at 14.4 V BTL

45 W, 10% THD Into 2 at 14.4 V BTL

80 W, 10% THD Into 2 at 18 V PBTL

Audio Performance Into 4 at 14.4 V BTL

THD+N < 0.02% at 1 W

42 μ V_{RMS} Output Noise

-90 dB Crosstalk

Load Diagnostics

Output Open and Shorted Load

Output-to-Battery or Ground Shorts

Line Output Detection Up to 6 k

Host-Independent Operation

Protection

Output Current Limiting

Output Short Protection

40 V Load Dump

Open Ground and Power Tolerant

DC Offset

Overtemperature

Undervoltage and Overvoltage

General Operation

4.5 V to 18 V Supply voltage

I²C Control With 4 Address Options

Clip Detection and Thermal Warning

Recommended For You

TAS5142DKD

Texas Instruments, Inc

HSSOP36

TAS5717PHPR

Texas Instruments, Inc

HTQFP48

TAS5411QPWPRQ1

Texas Instruments, Inc

HTSSOP16

TAS5342ADDVR

Texas Instruments, Inc

HTSSOP44

TAS5707PHPR

Texas Instruments, Inc

HTQFP48

TAS5760MDAPR

Texas Instruments, Inc

HTSSOP32

TAS5760MDCAR

Texas Instruments, Inc
HTSSOP48

TAS5414CTPHDRQ1

Texas Instruments, Inc
HTQFP-64

TAS2505IRGET

Texas Instruments, Inc
VQFN24

TAS2505IRGER

Texas Instruments, Inc
VQFN-24

TAS5086DBTR

Texas Instruments, Inc
TSSOP38

TAS3004PFB

Texas Instruments, Inc
QFP

TAS3004PFBR

Texas Instruments, Inc
TQFP-48

TAS5076PFC

Texas Instruments, Inc
QFP

TAS3108DCP

Texas Instruments, Inc
HTSSOP38