

**Audio Amp Speaker 1-CH Mono/2-CH Stereo 50W Class-D  
Automotive 32-Pin HTSSOP EP T/R**

<b>Manufacturer:</b>	<a href="#">Texas Instruments, Inc</a>	<a href="#">TPA3118D2QDAPRQ1 Image</a>
<b>Package/Case:</b>	HTSSOP-32	Images are for reference only
<b>Product Type:</b>	Amplifier ICs	<a href="#">Inquiry</a>
<b>RoHS:</b>	RoHS Compliant/Lead free 	
<b>Lifecycle:</b>	Active	

## General Description

The TPA311xD2-Q1 devices are automotive stereo, efficient, digital-amplifier power stages for driving speakers up to 100 W into 2  $\Omega$  in mono. The TPA3118D2-Q1 can even drive 2  $\times$  30 W into 8  $\Omega$  without a heat sink on a dual-layer PCB. If even higher power is needed, the TPA3116D2-Q1 drives 2  $\times$  50 W into 4  $\Omega$  with a small heat sink attached to its top-side thermal pad.

The TPA311xD2-Q1 advanced oscillator and PLL circuit employ a multiple-switching-frequency option to avoid AM interference; this is achieved together with an option of either master or slave selection, making it possible to synchronize multiple devices.

The TPA311xD2-Q1 devices are fully protected against faults with short-circuit protection and thermal protection as well as overvoltage, undervoltage and dc protection. Faults are reported back to the processor to prevent devices from being damaged during overload conditions.

## Key Features

Supports Multiple Output Configurations

2 × 50 W Into a 4-Ω BTL Load at 21 V (TPA3116D2-Q1)

2 × 30 W Into an 8-Ω BTL Load at 24 V (TPA3118D2-Q1)

Wide Voltage Range: 4.5 V to 26 V

Efficient Class-D Operation

>90% Power Efficiency Combined With Low Idle Loss Greatly Reduces Heat Sink Size

Advanced Modulation Schemes

Multiple Switching Frequencies

AM Avoidance

Master and Slave Synchronization

Up to 1.2-MHz Switching Frequency

Feedback Power-Stage Architecture With High PSRR Reduces PSU Requirements

Programmable Power Limit

Differential and Single-Ended Inputs

Stereo BTL and Mono PBTL Modes

Single Power Supply Reduces Component Count

Integrated Self-Protection Circuits Including Overvoltage, Undervoltage, Overtemperature, DC-Detect, and Short Circuit With Error Reporting

Designed for Automotive EMC Requirements

Thermally Enhanced Packages

DAD (32-pin HTSSOP Pad Up)

DAP (32-pin HTSSOP Pad Down)

−40°C to 125°C Ambient Temperature Range

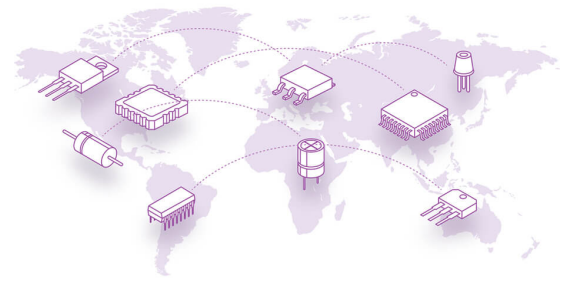
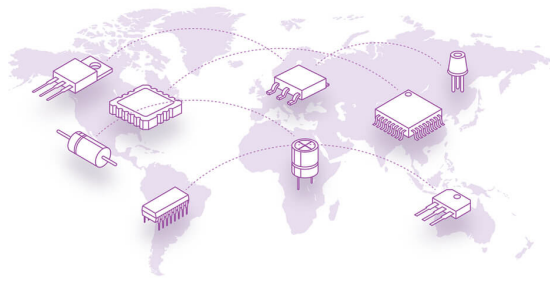
Qualified for Automotive Applications

AEC-Q100 Qualified With the Following Results:

Device Temperature Grade 1: −40°C to 125°C Ambient Operating Temperature Range

Device HBM ESD Classification Level H2

Device CDM ESD Classification Level C4B



## Recommended For You

---

### TPA3125D2N

Texas Instruments, Inc

DIP20

### TPA6111A2DR

Texas Instruments, Inc

SOP8

### TPA2012D2RTJR

Texas Instruments, Inc

QFN20

### TPA6132A2RTER

Texas Instruments, Inc

QFN

### TPA2013D1RGPR

Texas Instruments, Inc

QFN20

### TPA2010D1YZFR

Texas Instruments, Inc

DSBGA9

### TPA6211A1TDGNRQ1

Texas Instruments, Inc

MSOP8

### TAS5414CTPHDRQ1

Texas Instruments, Inc

HTQFP-64

### PCMI681TPWPRQ1

Texas Instruments, Inc

HTSSOP28

### TPA3131D2RHBR

Texas Instruments, Inc

VQFN32

### TPA3100D2PHP

Texas Instruments, Inc

QFP

### TPA3244DDWR

Texas Instruments, Inc

HTSSOP-44

### TPA6017A2PWP

Texas Instruments, Inc

HTSSOP20

### TPA4861D

Texas Instruments, Inc

SOP8

### TPA6120A2DWPR

Texas Instruments, Inc

SOP