D2-92683
Intelligent Digital Amplifier and Sound Processor

Key Features

Advanced DAE-3™ Digital Audio Engine™ IC Family
DAE-3™ Pin Compatible and Function/Feature Compatible with the D2Audio™ DAE-6™ Device Family
DAE-3HT™ - Identical DAE-3 performance, in 72-QFN package
Integrated DSP Digital Sound Processing
Customizable audio path sound processing
Fully configurable and routable audio signal paths and hardware function assignment
Fully Supported with Audio Canvas™ III Design Tool
Flexible Audio Input and Output Configurations
12 Independent PWM Engine Channels
4 Independent Asynchronous I^2S Digital Inputs
Integrated high-performance stereo ADC (DAE-3 only)
S/PDIF™ Digital Audio Inputs supporting Linear IEC-61958 PCM or Compressed IEC-61937 Audio
S/PDIF Digital Audio PCM Output
Embedded 8-Channel Sample Rate Converter
Real-Time Amplifier Control and Monitoring
Supports Bridged, Half-Bridged, and Bridge-Tied Load (BTL) Topologies, Using Discrete or Integrated Power Stages
Complete Fault Protection with Automatic Recovery
D2Audio™ SoundSuite™ Enhancement and Virtualization
Enhanced Audio Processing Decoders And Virtualization
Dolby® Digital/AC3
Dolby® Pro Logic IIx
Dolby® Virtual Speaker
SRS TruSurround HD4™ , SRS WOW HD™, SRS TruVolume™

Description

The D2-926xx family of the DAE-3™ and DAE-3HT™ Digital Audio Engine™ devices are complete System-on Chip (SoC) multi-channel digital sound processors and Class-D amplifier controllers.

The integrated DSP provides efficient and configurable audio signal path processing including equalization, dynamic range compression, mixing, and filtering that is completely configurable via the Audio Canvas™ III high level programming interface. The integrated PWM engine supports programmable and dynamic control of audio output, enabling a variety of multi-channel output configurations and output power capacity. Internal noise shaping, an embedded asynchronous sample rate converter, dynamic level-dependent timing, and high resolution operation supports power stage audio performances with SNR >110dB and THD+N < 0.01%.

The D2-926xx devices are provided in two package and feature configurations which include the 128-pin DAE-3, and the 72-pin DAE-3HT. Both the DAE-3 and DAE-3HT provide identical performance and enable an extremely flexible platform for feature rich and cost-affordable quality audio solutions, which benefit from the addition of Class-D amplifiers and DSP audio processing.

The 12 integrated digital PWM controllers can be used in a variety of multi-channel audio system configurations, supporting powered as well as line outputs. Fully protected amplifier control provides efficient and clean Class-D power output support.

Applications

- DTV and Blu-ray Soundbar
- DVD and Blu-ray Home Theater Systems
- Home Theater in a Box (HTiB)
- Audio Video Receiver (AVR)
- Multi-Channel Multi-Media (MM) Systems
- Multi-Room Distributed Audio (MRDA)
- Powered Speaker Systems
- Automotive Trunk/Amplified Solutions

		Alternatives		
Parameters	**D2-92683**	D2-92684	D2-74583	D2-71683
Input Channels	8	8	8	8
PWM Output Channels	12	12	12	12
Signal Flow	Configurable	Configurable	Configurable	Configurable
Supported Audio Inputs	4x I^2S, 1x S/PDIF, 8x fault INT	4x I^2S, 1x S/PDIF, 8x fault INT	4x I^2S, 2x S/PDIF, HDA, ADC (opt), 8x fault INT	4x I^2S, 2x S/PDIF, HDA, ADC (opt), 8x fault INT
Supported Audio Outputs	12x PWM, 1x I^2S, 1x S/PDIF	12x PWM, 1x I^2S, 1x S/PDIF	12x PWM, 4x I^2S, 1x S/PDIF	12x PWM, 4x I^2S, 1x S/PDIF
Features	D2Audio PWM Engine, Graceful Fault Recovery, 147 MHz DSP	D2Audio PWM Engine, Graceful Fault Recovery, Dolby Algorithm Support, 147 MHz DSP	D2Audio PWM Engine, Graceful Fault Recovery, Dolby, DTS® Algorithms, 160 MHz DSP, 32k P-memory	D2Audio PWM Engine, Graceful Fault Recovery, Dolby, DTS® Algorithms, 147 MHz DSP, 32k P-memory
Audio Canvas III Support	Yes	Yes	Yes	Yes