

# Automotive Safety Solutions

## Instrument Clusters

Instrument clusters commonly alert the driver of simple things like left and right signals, distance warnings to objects, lights on, etc. These are all minor safety features but in the future, safety features may become more critical with adaptive cruise control applications—where the distance warning is from moving vehicle to moving vehicle, or changes in the highway landscape. Knowing that the amplifier driving your speaker is working properly is now a must have for safety concerns.

### Systems

- Instrument clusters

### Applications

- Warning systems

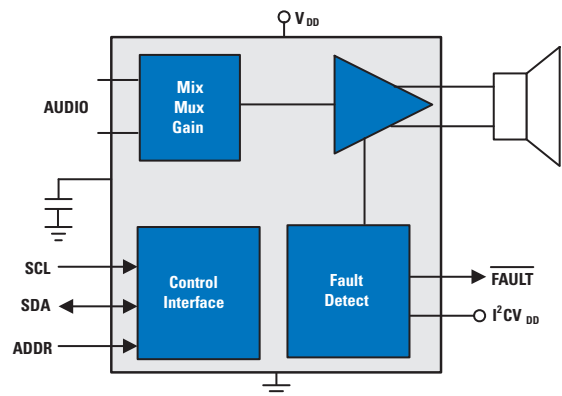
### Features

- Comprehensive fault detection
  - Open circuit
  - Short circuit
  - Short-to-power or ground
- 32 step volume control

**Size/Weight Reduction:** integration allows for multiple features in one device, innovative solutions allow for smaller cable and heat sink requirements

**User Satisfaction:** high-fidelity products enable a high performance listening experience

**Reliability and Diagnostics:** minimize the lifetime system cost of implementation and added safety



LM48100Q Power Amp with Output Fault

## Benefits of Boomer® Audio Amplifiers

### Audio Amplifiers and Subsystems

Product ID	Description	Mono Input Ch.	Stereo Input Ch.	Class D Speaker Driver	Packaging	Auto Grade
LM48100Q	1.25W audio power amplifier with output fault detection and volume control	2	1 <sup>2</sup> C	—	TSSOP-14	
LM49450	2.5W low EMI stereo class D subsystem with 24-bit DAC, ground referenced headphones, volume control, and 3D enhancement	—	1 <sup>2</sup> S	✓	LLP-32	—
LM4934	3D audio subsystem with stereo speaker, OCL/SE stereo headphone, earpiece and monoline level outputs	1	2, 1 <sup>2</sup> S	—	micro SMD-42	—
LM4935	Audio subsystem with dual-mode stereo headphone & mono high efficiency loudspeaker amplifiers and multi-purpose ADC	1 analog + 1 <sup>2</sup> S	1 analog + 1 <sup>2</sup> S	✓	micro SMD-49	—
LM49250	Enhanced emissions suppression stereo class D audio subsystem with ground referenced headphone amplifier	differential	2	✓	micro SMD-36	—
LM49370	Boomer audio power amplifier series audio subsystem with dedicated interface for Bluetooth transceivers	PCM	1 <sup>2</sup> S	✓	micro SMD-49	—

PowerWise® product, = AEC-Q100 qualified

See all National's automotive products and solutions at: [national.com/automotive](http://national.com/automotive)

