

Si4699 Data Short

High-Performance Dual Digital Radio Coprocessor with Seamless Blending

The Si4699 dual digital radio coprocessor provides significant advances in size, power consumption, and performance to enable radio reception with seamless blending in automotive infotainment systems and car radios. It is designed to work with the high-performance automotive Si479xx family of radio tuners.

Applications

- Automotive OEM infotainment systems
- Aftermarket car radio systems

KEY FEATURES

- Dual DAB/DAB+ coprocessor
- Dual AM/FM HD Radio coprocessor
- Single DRM30 ready
- DAB/DAB+ Features
 - Integrated DAB-DAB-FM (time and level alignment and seamless blending)
 - DAB/DAB+ audio decoder
 - PAD/XPAD outputs available
 - FIC decoder
 - Full support for data services
 - Enhanced packet mode
 - MOT, TPEG packet outputs
- HD Radio™ Features
 - Integrated automatic level and time alignment and seamless blending
 - AM/FM HD Radio channel decoder
 - Complete on-chip HDC audio source decoder
 - FM HD1, HD2, HD3 multicast support
 - Station Information Service (SIS) support
 - Program Service Data (PSD)
 - Advanced Application Services (AAS) Payload for data applications
- No external RAM required for channel decoding or seamless blending
- Flash memory interface for application program load
- Support for Si479xx Zero-IF DAB I/Q at 2.048 MS/s
- Support for Si479xx Zero-IF HD I/Q at 650 and 744.1875 kS/s
- AEC-Q100 qualified
- LGA 72-pin, 10x10x1 mm
 - Pb-free/RoHS compliant
- SPI, I²C control interfaces
- Reference clock input
- On-chip crystal oscillator
- Support for I²S audio input and output

1. Pin Descriptions Si4699

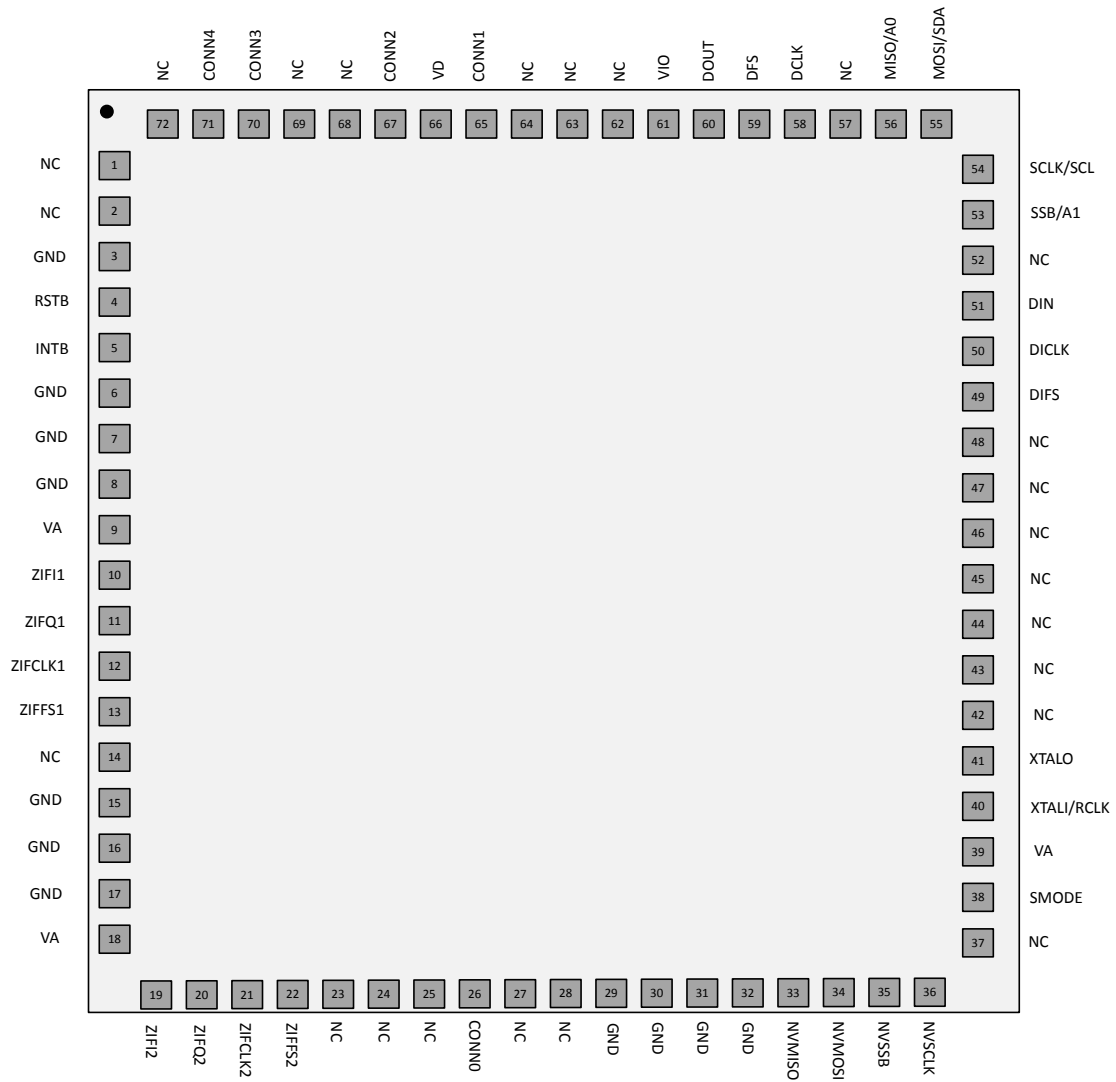


Table 1.1. Si4699 Pin Descriptions

| Pin Number | Pin Name | I/O | Description |
|------------|----------|-----|---|
| 1 | NC | | No connect; leave floating |
| 2 | NC | | No connect; leave floating |
| 3 | GND | I | Ground |
| 4 | RSTB | I | Active low reset signal |
| 5 | INTB | O | Interrupt |
| 6 | GND | I | Ground |
| 7 | GND | I | Ground |
| 8 | GND | I | Ground |
| 9 | VA | I | Analog supply voltage |
| 10 | ZIF1 | I | ZIF I-data input for HD/DAB/DRM30 coprocessor 1 |
| 11 | ZIFQ1 | I | ZIF Q-data input for HD/DAB/DRM30 coprocessor 1 |
| 12 | ZIFCLK1 | I | ZIF clock input for HD/DAB/DRM30 coprocessor 1 |
| 13 | ZIFFS1 | I | ZIF frame input for HD/DAB/DRM30 coprocessor 1 |
| 14 | NC | | No connect; leave floating |
| 15 | GND | I | Ground |
| 16 | GND | I | Ground |
| 17 | GND | I | Ground |
| 18 | VA | I | Analog supply voltage |
| 19 | ZIF12 | I | ZIF I-data input for HD/DAB coprocessor 2 |
| 20 | ZIFQ2 | I | ZIF Q-data input for HD/DAB coprocessor 2 |
| 21 | ZIFCLK2 | I | ZIF clock input for HD/DAB coprocessor 2 |
| 22 | ZIFFS2 | I | ZIF frame input for HD/DAB coprocessor 2 |
| 23 | NC | | No connect; leave floating |
| 24 | NC | | No connect; leave floating |
| 25 | NC | | No connect; leave floating |
| 26 | CONN0 | | Connect a pull down resistor 10 kΩ to GND |
| 27 | NC | | No connect; leave floating |
| 28 | NC | | No connect; leave floating |
| 29 | GND | I | Ground |
| 30 | GND | I | Ground |
| 31 | GND | I | Ground |
| 32 | GND | I | Ground |
| 33 | NVMISO | I | SPI data input for serial flash |
| 34 | NVMOSI | O | SPI data output for serial flash |
| 35 | NVSSB | O | SPI select for serial flash |

| Pin Number | Pin Name | I/O | Description |
|------------|------------|-----|---|
| 36 | NVCLK | O | SPI clock for serial flash |
| 37 | NC | | No connect; leave floating |
| 38 | S.MODE | I | S.MODE=0 --> SPI, S.MODE=1 --> I2C |
| 39 | VA | I | Analog supply voltage |
| 40 | XTALI/RCLK | I | Crystal oscillator input/Reference clock input |
| 41 | XTALO | O | Crystal oscillator output |
| 42 | NC | | No connect; leave floating |
| 43 | NC | | No connect; leave floating |
| 44 | NC | | No connect; leave floating |
| 45 | NC | | No connect; leave floating |
| 46 | NC | | No connect; leave floating |
| 47 | NC | | No connect; leave floating |
| 48 | NC | | No connect; leave floating |
| 49 | DIFS | I/O | Digital audio frame sync |
| 50 | DICLK | I/O | Digital audio bit clock |
| 51 | DIN | I | Digital audio input |
| 52 | NC | | No connect; leave floating |
| 53 | SSB/A1 | I | SPI select/ I ² C A1 address select |
| 54 | SCLK/SCL | I | SPI clock/I ² C clock |
| 55 | MOSI/SDA | I/O | SPI data input/ I ² C data input/output |
| 56 | MISO/A0 | O/I | SPI data output/ I ² C A0 address select |
| 57 | NC | | No connect; leave floating |
| 58 | DCLK | I/O | Digital audio bit clock |
| 59 | DFS | I/O | Digital audio frame sync |
| 60 | DOOUT | O | Digital audio output |
| 61 | VIO | I | I/O supply voltage |
| 62 | NC | | No connect; leave floating |
| 63 | NC | | No connect; leave floating |
| 64 | NC | | No connect; leave floating |
| 65 | CONN1 | | Connect a pull down resistor 10 kΩ to GND |
| 66 | VD | I | Digital supply voltage |
| 67 | CONN2 | | Connect a pull down resistor 10 kΩ to GND |
| 68 | NC | | No connect; leave floating |
| 69 | NC | | No connect; leave floating |
| 70 | CONN3 | | Short to pin 71 (CONN4) |
| 71 | CONN4 | | Short to pin 70 (CONN3) |
| 72 | NC | | No connect; leave floating |

2. Package Outline Si4699 (QFN)

The following figure illustrates the package details for the Si4699. The table lists the values for the dimensions shown in the illustration.

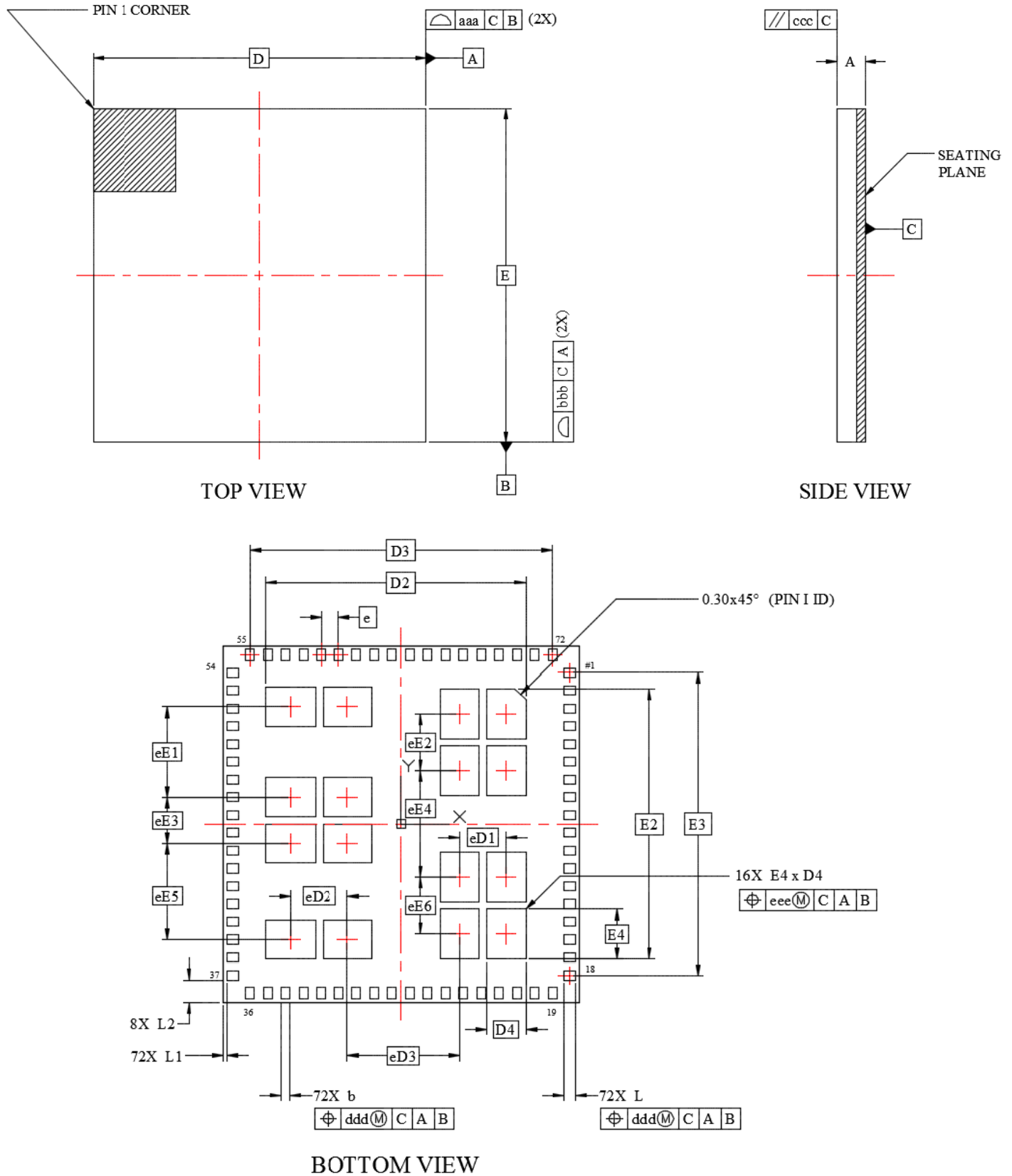


Figure 2.1. 10 x 10 mm 72-Pin LGA

Table 2.1. Package Diagram Dimensions

| Dimension | Min | Nom | Max |
|-----------|----------|-------|-------|
| A | 0.80 | 0.90 | 1.00 |
| b | 0.15 | 0.25 | 0.35 |
| D | 10.0 BSC | | |
| D2 | 7.20 | 7.30 | 7.40 |
| D3 | 8.50 BSC | | |
| D4 | 1.00 | 1.10 | 1.20 |
| e | 0.50 BSC | | |
| E | 10.0 BSC | | |
| E2 | 7.50 | 7.60 | 7.70 |
| E3 | 8.50 BSC | | |
| E4 | 1.30 | 1.40 | 1.50 |
| L | 0.225 | 0.325 | 0.425 |
| L1 | 0.05 | 0.10 | 0.15 |
| L2 | 0.575 | 0.625 | 0.675 |
| eD1 | 1.30 BSC | | |
| eD2 | 1.60 BSC | | |
| eD3 | 3.15 BSC | | |
| eE1 | 2.55 BSC | | |
| eE2 | 1.60 BSC | | |
| eE3 | 1.30 BSC | | |
| eE4 | 3.00 BSC | | |
| eE5 | 2.70 BSC | | |
| eE6 | 1.60 BSC | | |
| aaa | 0.10 | | |
| bbb | 0.10 | | |
| ccc | 0.10 | | |
| ddd | 0.10 | | |
| eee | 0.10 | | |

Note:

1. All dimensions shown are in millimeters (mm) unless otherwise noted.
2. Dimensioning and Tolerancing per ANSI Y14.5M-1994.
3. This drawing conforms to the JEDEC Solid State Outline MO-220.
4. Recommended card reflow profile is per the JEDEC/IPC J-STD-020 specification for Small Body Components.



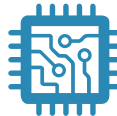
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