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, I^2C control interfaces
- Reference clock input
- On-chip crystal oscillator
- Support for I^2S audio input and output

1. Pin Descriptions Si4699

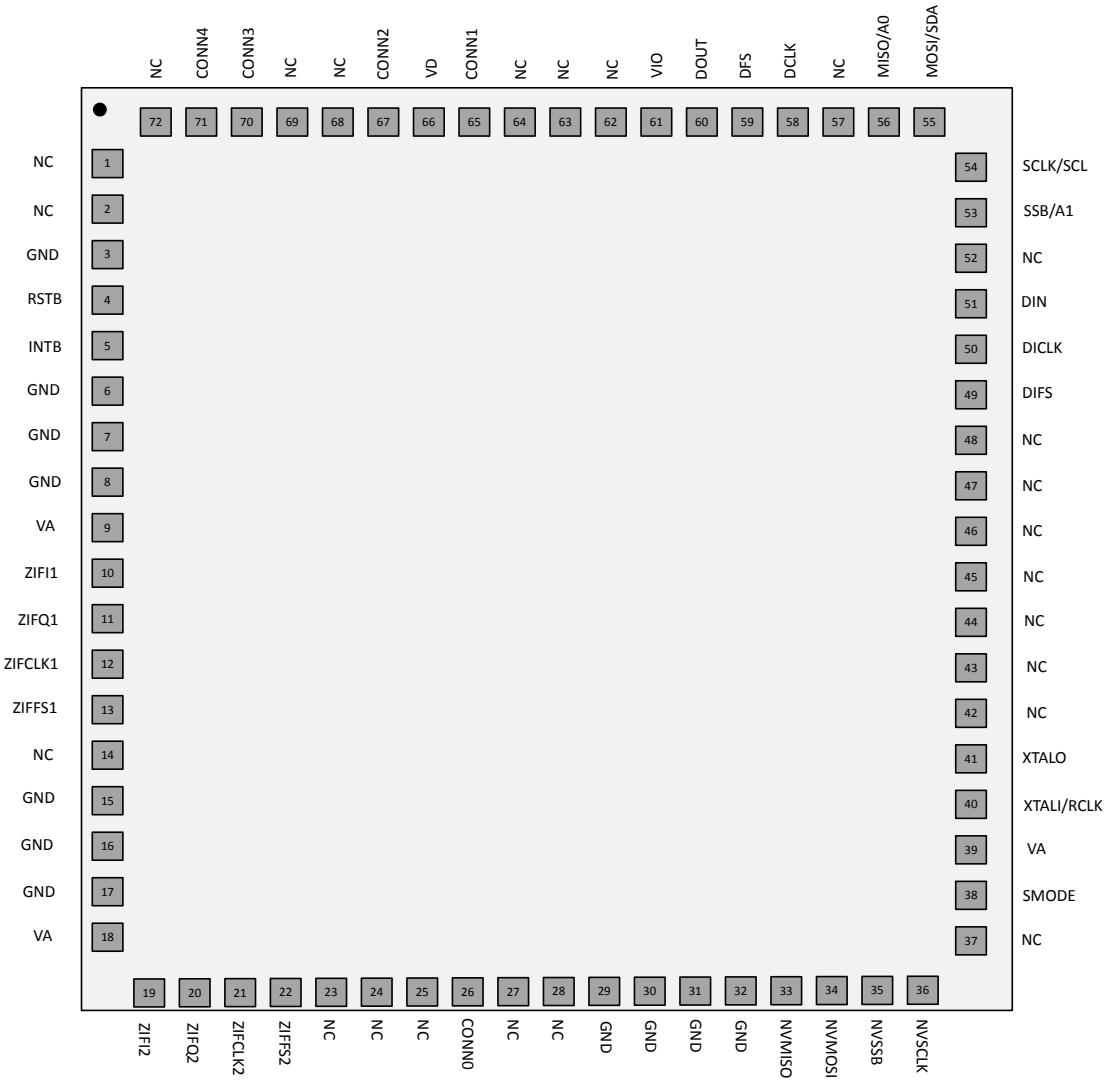

Table 1.1. Si4699 Pin Descriptions

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	ZIFI1	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	ZIFI2	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	NVSCLK	O	SPI clock for serial flash
37	NC		No connect; leave floating
38	SMODE	I	SMODE=0 --> SPI, SMODE=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^2C A1 address select
54	SCLK/SCL	I	SPI clock/I^2C clock
55	MOSI/SDA	I/O	SPI data input/ I^2C data input/output
56	MISO/A0	O/I	SPI data output/ I^2C 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	DOUT	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.

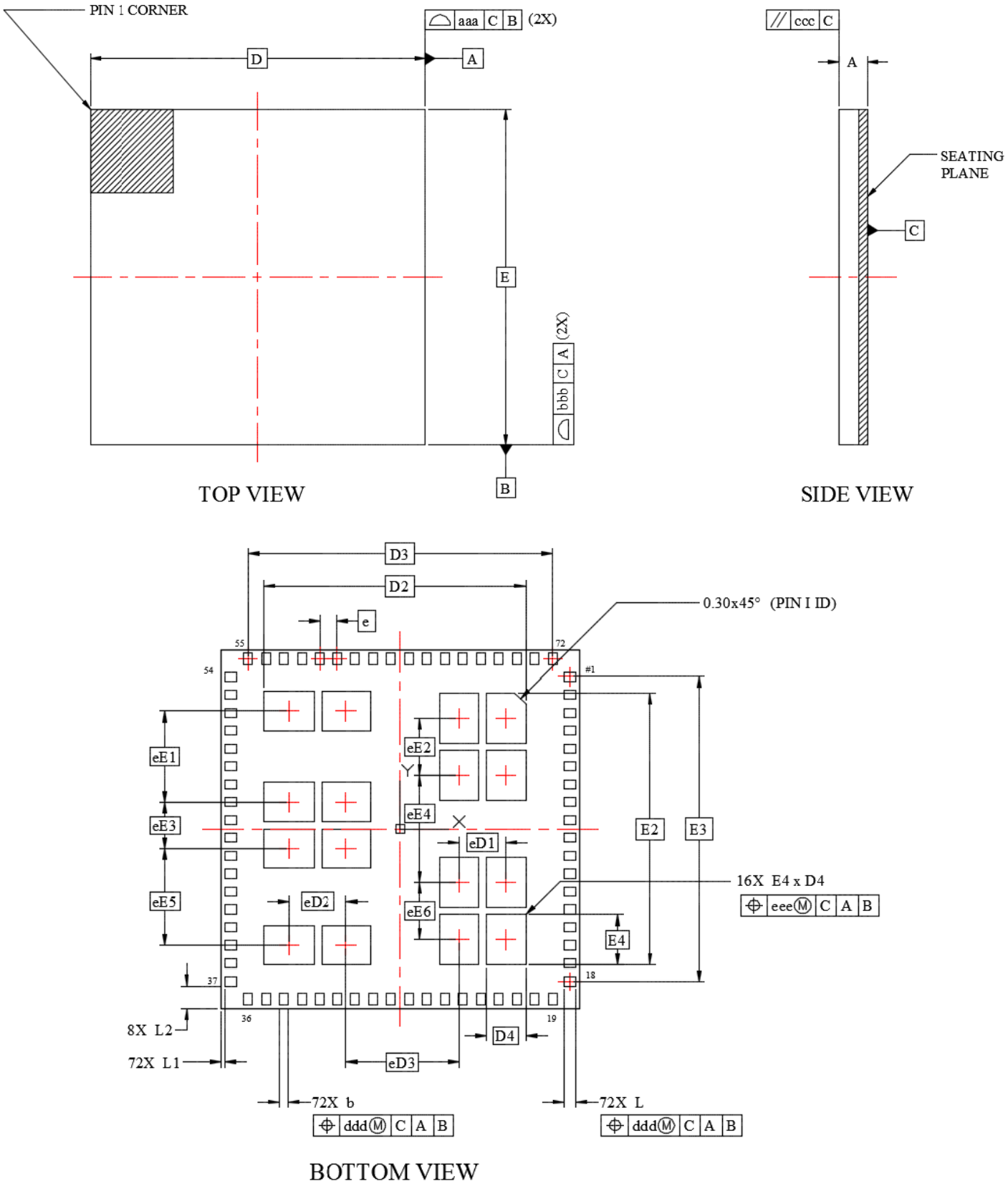

Figure 2.1. 10 x 10 mm 72-Pin LGA

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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