CADEKA
Amplify the Human Experience

SPT5300

18-BIT AUDIO DAC

ADVANCED INFORMATION

FEATURES

- On-Chip Analog Switch for Analog PCM Output
- On-Chip Clock Generator (With External X-tal)
- 8 Times Oversampling
  (Digital Filter - Passband Ripple: 0.000075 dB
  Stopband Attenuation: < -108 dB)
- 16/18-Bit 2s Complement Serial Data Input (MSB First)
- Digital Attenuation Control
- Master Clock Rate: 384 or 512 Times Compatible
- Adjustable System Sampling Rates Including
  32 kHz, 44.1 kHz, and 48 kHz
- Single 5 V Supply

APPLICATIONS

- Compact Disk Players
- DAT Recorders and Players
- Synthesizer Keyboards
- Digital Mixing Consoles
- LDP, DCC and MD
  High Quality Digital Audio Systems

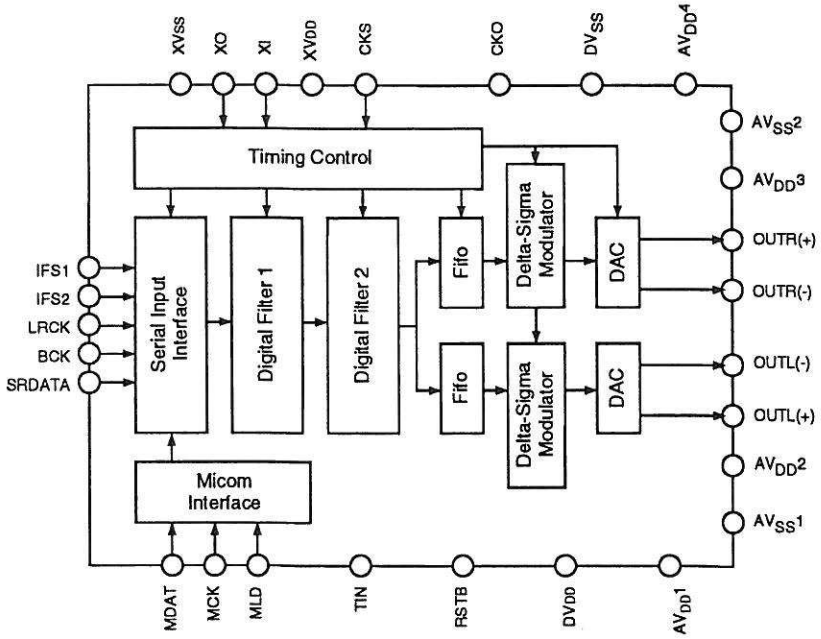
GENERAL DESCRIPTION

The SPT5300 is a CMOS 16/18-bit two-channel digital-to-analog converter for digital audio systems. It is a delta-sigma D/A converter which, in addition to the conventional D/A function, includes an 8X digital interpolation filter followed by a 128X oversampling delta-sigma modulator. The modulator output is the PCM signal generated by the internal control signal.

The total D/A system provides a linear phase response. The delta-sigma D/A converter also includes an extremely flexible serial port utilizing two select pins to support four different interface modes.

The master clock can be either 384 or 512 times the input word rate, supporting various audio environments. The SPT5300 is offered in a 28L small outline package (SOIC) over the commercial temperature range of 0 to +70 °C.

BLOCK DIAGRAM



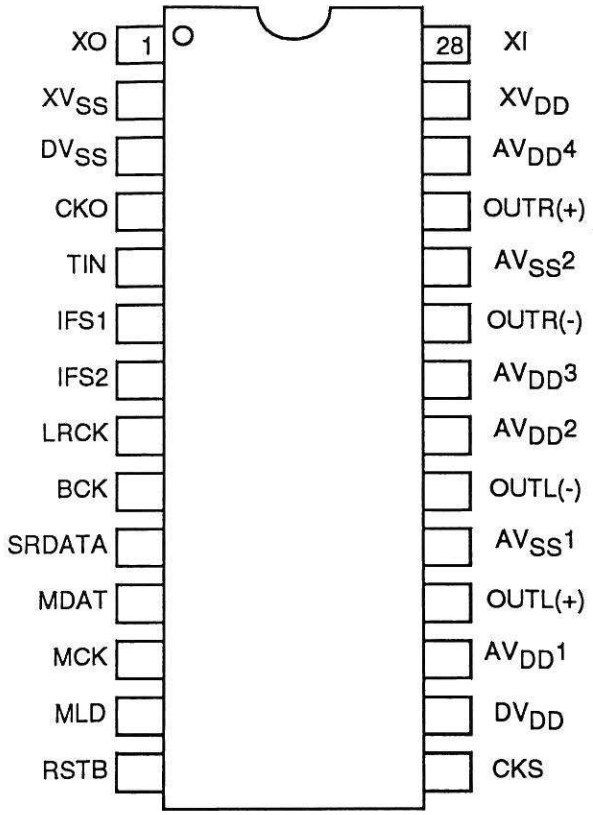
ABSOLUTE MAXIMUM RATINGS (Beyond which damage may occur)

ELECTRICAL SPECIFICATIONS

T_A = 25 °C, V_{DD}=5 V, V_{SS}= 0 V, Clock Rate = 384 times, Input Word Rate=44.1 kHz, Input Data=18 Bits, unless otherwise specified.

PARAMETERS	TEST CONDITIONS	TEST LEVEL	MIN	TYP	MAX	UNITS
Dynamic Range	1 kHz (0 dB)			102		dB
THD	1 kHz (0 dB)			0.0025		%
Signal-to-Noise	1 kHz (0 dB)			108		dB
Crosstalk	1 kHz (0 dB)			100		dB
Power Dissipation				320	440	mW

PIN ASSIGNMENTS



PIN FUNCTIONS

NAME	FUNCTION
XO	X-tal Output
XV_{SS}	Digital Ground (X-tal Oscillator Part)
DV_{SS}	Digital Ground
CKO	384 fs/256 fs Output
TIN	Test Input (This pin must be "L" for normal operation.)
IFS1	Input Format Select 1
IFS2	Input Format Select 2
LRCK	Left/Right Clock Input
BCK	Serial Bit Clock Input
SRDATA	Serial Digital Data Input
MDAT	Micom Command Data Input
MCK	Micom Command Clock Input
MLD	Micom Command Load Input
RSTB	Reset (When Low: Reset)
CKS	Master Clock Select Input (When CKS is low: 512 fs When CKS is high: 384 fs)
DV_{DD}	Digital Supply Voltage
$AV_{DD}1$	Analog Supply Voltage 1
OUTL(+)	L-Channel Positive Output
$AV_{SS}1$	Analog Ground 1
OUTL(-)	L-Channel Negative Output
$AV_{DD}2$	Analog Supply Voltage 2
$AV_{DD}3$	Analog Supply Voltage 3
OUTR(-)	R-Channel Negative Output
$AV_{SS}2$	Analog Ground 2
OUTR(+)	R-Channel Positive Output
$AV_{DD}4$	Analog Supply Voltage 4
XV_{DD}	Digital Supply Voltage (X-tal Oscillator Part)
XI	X-tal Input

ORDERING INFORMATION

PART NUMBER	TEMPERATURE RANGE	PACKAGE
SPT5300SCS	0 to +70 °C	32-Lead SOIC

For additional information regarding our products, please visit CADEKA at: cadeka.com

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