

LC78816, LC78816M, LC78816V

16-bit D/A Converters for Digital Audio

OVERVIEW

The LC78816, LC78816M and LC78816V are 16-bit CMOS D/A converters for digital audio use. They use the dynamic level-shifting (DLS) conversion technique, using a resistor-string D/A converter, a pulsewidth modulation D/A converter and a level-shifting D/A converter.

FEATURES

- Two independent D/A converters with zero phase-shift outputs
- Can be used with eight-times oversampling
- On-chip output buffering op-amp
- No deglitching circuit needed, reducing real estate
- Si-gate CMOS process
- Single 5 V supply and low power consumption
- Capable of low-voltage (3.5 V) operation
- Available in DIP-20, MFP-20 and SSOP-24 packages

APPLICATIONS

- CD players, digital amplifiers
- Electronic musical instruments, BS tuners, DAT
- Other digital audio devices

CHARACTERISTICS

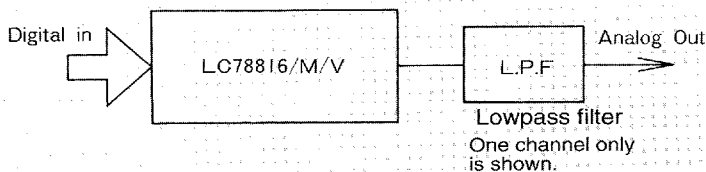
$V_{DD} = 5.0 \text{ V}$, $T_a = 25 \text{ }^\circ\text{C}$

Parameter	Symbol	Conditions	Rating			Unit
			min	typ	max	
Resolution	RES		-	16	-	bit
Conversion frequency	F_s		-	-	400	kHz
Total harmonic distortion	THD	$f = 1 \text{ kHz}$ at 0 dB	-	-	0.08	%
Signal-to-noise ratio	S/N	JIS-A	96	-	-	dB
Power consumption	P_D		-	35	60	mW

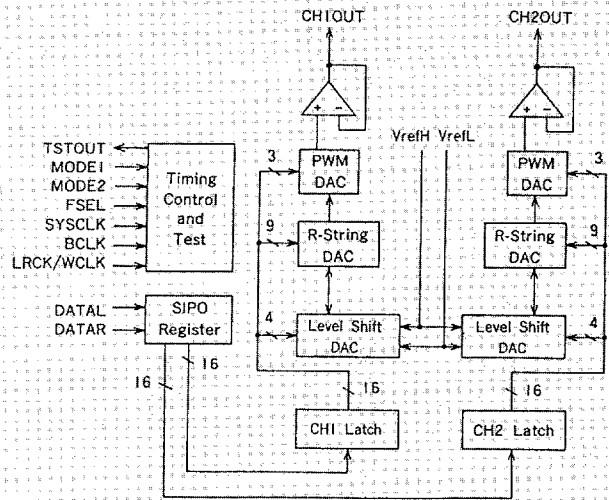
Note

JIS = Japanese Industrial Standard

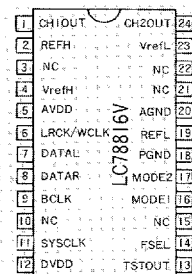
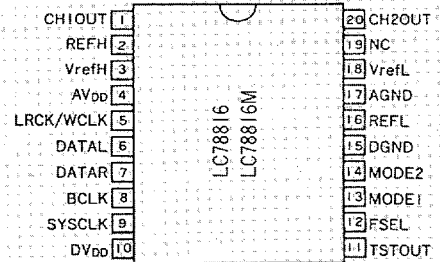
APPLICATION



BLOCK DIAGRAM



PINOUTS (Top View)



- As shown in the diagram, the LC78816/M/V requires only a lowpass filter on its outputs to produce an analog signal.
- A deglitching circuit is not needed.