



The LA7116 is a VCR servo interface IC that can be used in conjunction with the LC7412, 7413 to form a servo system with a good cost performance.

Functions

- Drum FG amp
- Capstan FG amp
- CTL amp
- Drum PG amp
- OP amp × 2

Features

- The OP amp section can be operated from a voltage of up to 12V.
- Selectable threshold voltage of CLT Schmitt section

Maximum Ratings at Ta = 25°C

			unit
Maximum Supply Voltage	V _{CC} 1	7.0	V
	V _{CC} 2	15.0	V
Allowable Power Dissipation	P _d max	T _a ≤ 65°C	200 mW
Operating Temperature	T _{op} r	–15 to +65	°C
Storage Temperature	T _{stg}	–40 to +125	°C

Operating Conditions at Ta = 25°C

		unit
Recommended Supply Voltage	V _{CC}	5.0 V
Operating Voltage Range	V _{CC} op1	4.5 to 5.5 V
	V _{CC} op2	4.5 to 13.0 V

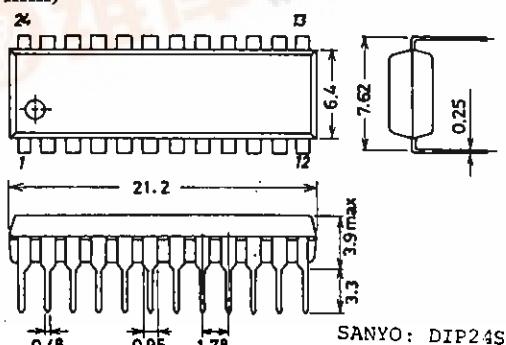
Operating Characteristics at Ta = 25°C, V_{CC} = 5V

			min	typ	max	unit
Circuit Current	I _{CC} 1	Quiescent, no load	2.0	4.0	6.0	mA
CTL Amp Bias Voltage	V ₅	Quiescent, no load	2.4	2.5	2.6	V
PG Amp Bias Voltage	V ₁₅	Quiescent, no load	2.4	2.5	2.6	V
PG Amp Bias Voltage	V ₁₆	Quiescent, no load	2.4	2.5	2.6	V
	V ₂₁	Quiescent, no load	2.4	2.5	2.6	V
Reference Voltage	V ₂₀	Quiescent, no load	2.4	2.5	2.6	V

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Package Dimensions 3067

(unit : mm)



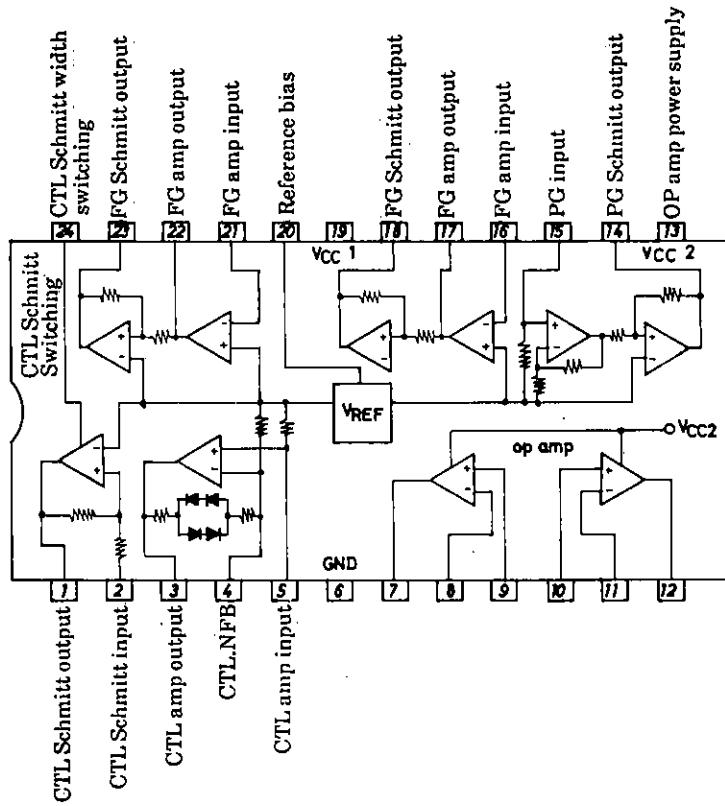
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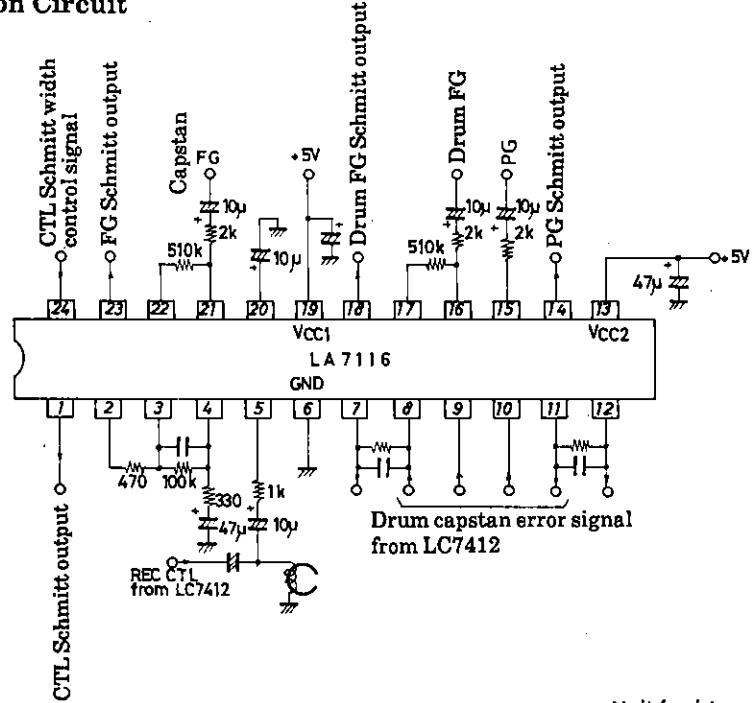
			min	typ	max	unit
CTL Output Voltage	V _{OHCTL}	I ₁ = + 0.5mA	4.0		1.0	V
	V _{OLCTL}	I ₁ = - 0.5mA			1.0	V
PG Output Voltage	V _{OHPG}	I ₁₄ = + 0.5mA	4.0		1.0	V
	V _{OLPG}	I ₁₄ = - 0.5mA			1.0	V
FG Output Voltage	V _{OHFG1}	I ₁₈ = + 0.5mA	4.0		1.0	V
	V _{OLFG1}	I ₁₈ = - 0.5mA			1.0	V
	V _{OHFG2}	I ₂₃ = + 0.5mA	4.0		1.0	V
	V _{OLFG2}	I ₂₃ = - 0.5mA			1.0	V
CTL Amp Gain	G _{CTL}	SG1:500Hz, 1Vp-p, V ₃ = 1Vp-p	48	50	52	dB
CTL Amp Frequency Characteristic	ΔG _{CTL}	SG1:10Hz, 1Vp-p, V ₃ = 1Vp-p	-6	-2		dB
FG Amp Gain	G _{FG1}	SG3:500Hz, 1Vp-p, V ₁₇ = 1Vp-p	46	48	50	dB
	G _{FG2}	SG4:500Hz, 1Vp-p, V ₂₂ = 1Vp-p	46	48	50	dB
FG Amp Frequency Characteristic	ΔG _{FG1}	SG3:20kHz, 1Vp-p, V ₁₇ = 1Vp-p	-10	-6		dB
	ΔG _{FG2}	SG4:20kHz, 1Vp-p, V ₂₂ = 1Vp-p	-10	-6		dB
PG Schmitt Width	V _{HPG}	SG2:500Hz	48	60	72	mVp-p
FG Schmitt Width	V _{HFG1}	SG3:500Hz	185	230	275	mVp-p
	V _{HFG2}	SG4:500Hz	185	230	275	mVp-p
CTL Schmitt Width	V _{HCTL1}	SG1:500Hz, S1 = a	160	200	240	mVp-p
CTL Schmitt Width (Search)	V _{HCTL2}	SG1:500Hz, S1 = b	320	400	480	mVp-p
CTL Schmitt Width (Slow)	V _{HCTL3}	SG1:500Hz, S1 = c	+72	+92	+112	mV
CTL Schmitt Width (Slow)	V _{HCTL4}	SG1:500Hz, S1 = c	+34	+54	+70	mV
CTL Schmitt Width Switching Level	V _{24H}	S1 = d	3.0	3.5	4.0	V
	V _{24L}	S1 = d	1.0	1.5	2.0	V
[OP Amp Characteristics] at V _{CC} = 5 to 12V						
Circuit Current	I _{CC} 2		0.3	0.8	1.2	mA
Input Offset Voltage	V _{IO} 1			±2	±7	mV
	V _{IO} 2			±2	±7	mV
Input Offset Current	I _{IO} 1			±5	±50	nA
	I _{IO} 2			±5	±50	nA
Input Bias Current	I _B 1			45	250	nA
	I _B 2			45	250	nA
Output Current (Source)	I _{OSOC} 1		10			mA
	I _{OSOC} 2		10			mA
Output Current (Sink)	I _{OSNK} 1		10			mA
	I _{OSNK} 2		10			mA
Common-Mode Input Voltage Range	V _{1CM}		0	V _{CC} to 1.5		V
Output Voltage Range	V _{OUT}		0	V _{CC} to 1.5		V

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Equivalent Circuit Block Diagram



Sample Application Circuit



Unit (resistance : Ω , capacitance : F)

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