

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}	200	mW
Operating Temperature	T _{opr}	-15 to +65	°C
Storage Temperature	T _{stg}	-40 to +125	°C

Ta ≤ 65°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

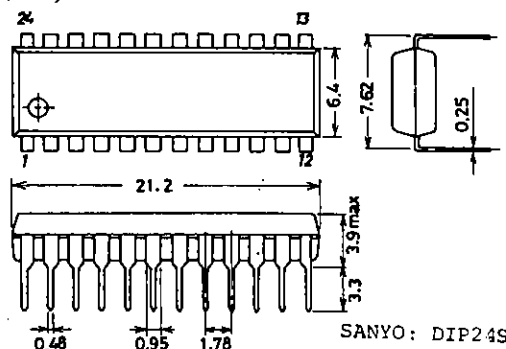
Operating Characteristics at Ta = 25°C, V_{CC} = 5V

			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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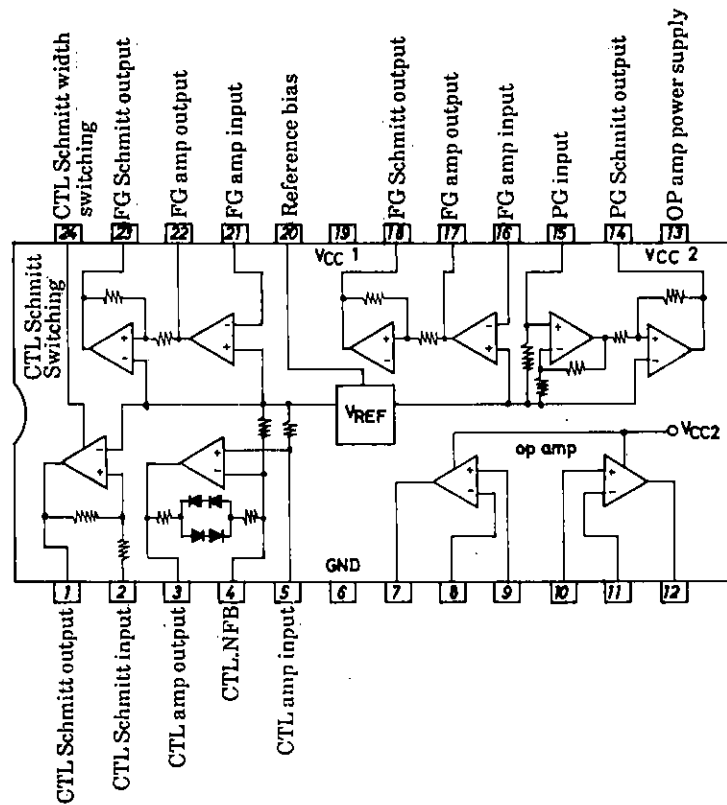
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LA7116

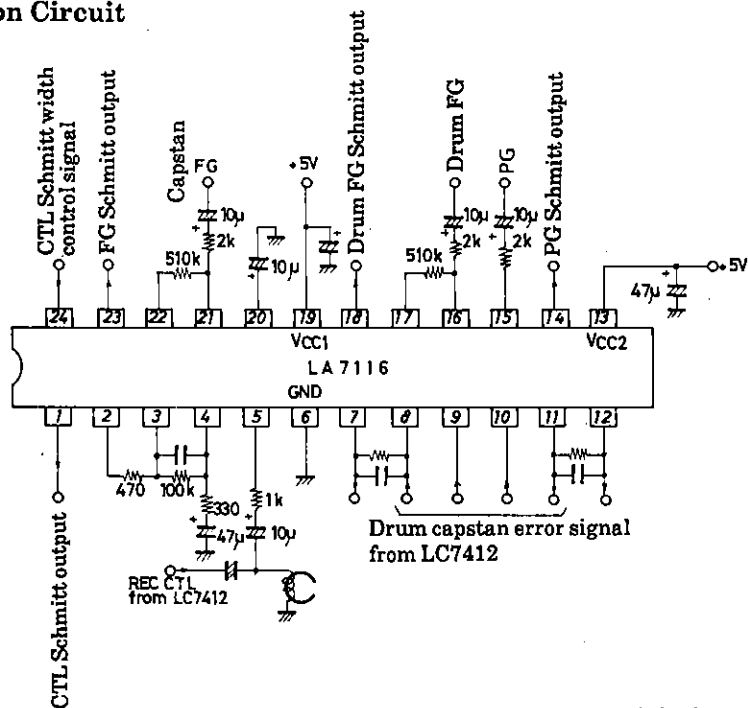
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			min	typ	max	unit
CTL Output Voltage	V _{OHCTL}	I ₁ = +0.5mA	4.0			V
	V _{OLCTL}	I ₁ = -0.5mA			1.0	V
PG Output Voltage	V _{OHPG}	I ₁₄ = +0.5mA	4.0			V
	V _{OLPG}	I ₁₄ = -0.5mA			1.0	V
FG Output Voltage	V _{OHFG1}	I ₁₈ = +0.5mA	4.0			V
	V _{OLFG1}	I ₁₈ = -0.5mA			1.0	V
	V _{OHFG2}	I ₂₃ = +0.5mA	4.0			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 _{ICM}		0	V _{CC} to 1.5		V
Output Voltage Range	V _{OUT}		0	V _{CC} to 1.5		V

Equivalent Circuit Block Diagram



Sample Application Circuit

Unit (resistance : Ω , capacitance : F)

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