

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 <sub>CC 1</sub>	7.0	V
	V <sub>CC 2</sub>	15.0	V
Allowable Power Dissipation	P <sub>d max</sub>	Ta ≤ 65°C	200 mW
Operating Temperature	T <sub>opr</sub>	-15 to +65	°C
Storage Temperature	T <sub>stg</sub>	-40 to +125	°C

#### Operating Conditions at Ta = 25°C

			unit
Recommended Supply Voltage	V <sub>CC</sub>	5.0	V
Operating Voltage Range	V <sub>CC op1</sub>	4.5 to 5.5	V
	V <sub>CC op2</sub>	4.5 to 13.0	V

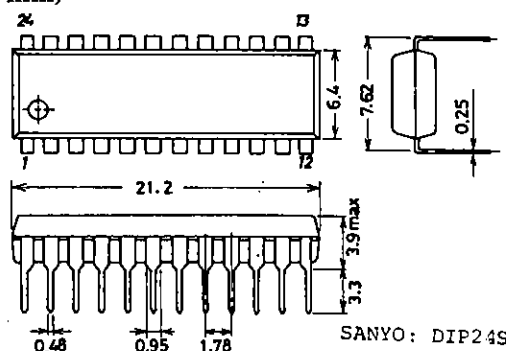
#### Operating Characteristics at Ta = 25°C, V<sub>CC</sub> = 5V

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

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#### Package Dimensions 3067

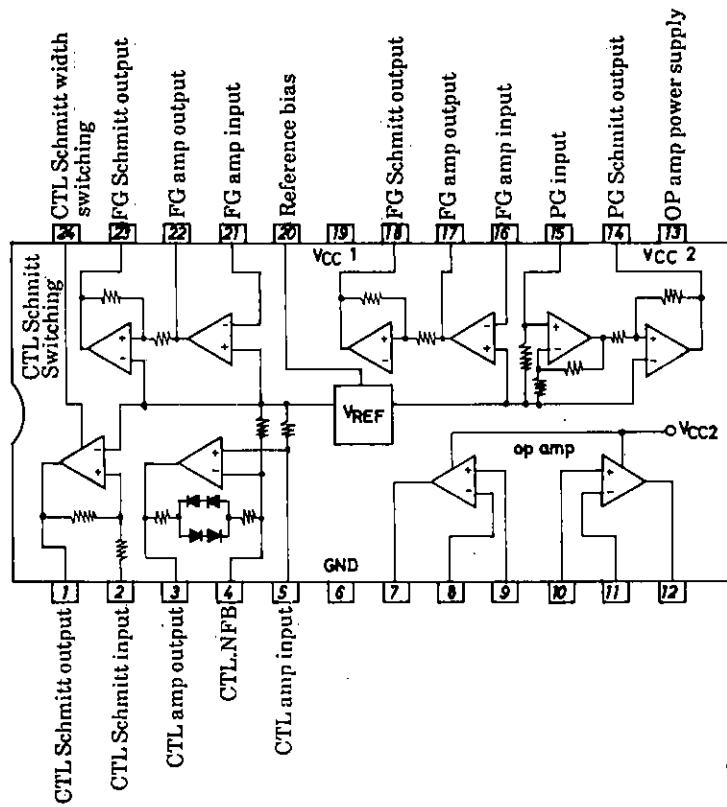
(unit: mm)



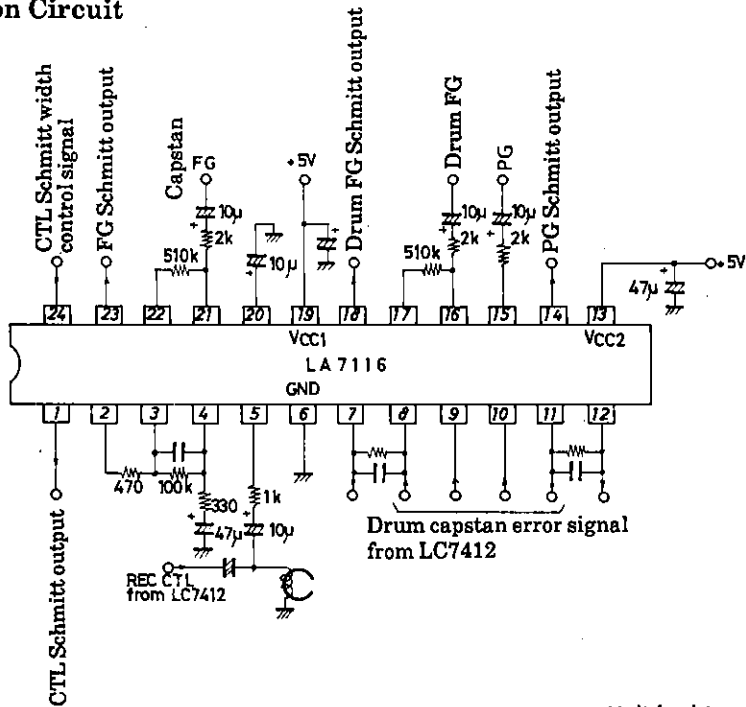
## LA7116

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

Equivalent Circuit Block Diagram



Sample Application Circuit



Unit (resistance : Ω , capacitance : F)

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