No.2906A
 LA7116

 SANYO
 VCR Servo Interface

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
- \cdot OP amp \times 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	Pd max	Ta≦65°C	20 0	mW		
Operating Temperature	Topr		-15 to +65	°C		
Storage Temperature	Tstg		-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 $Ta = 25^{\circ}C$, $V_{CC} = 5V$			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
			Continued on next pag			

Package Dimensions 3067



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LA7116

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Continued from preceding page.			min	typ	max	unit
CTL Output Voltage	VOHCTL	$I_1 = +0.5 m A$	4.0			v
	VOLCTL	$I_1 = -0.5 mA$			1.0	V
PG Output Voltage	VOHPG	$I_{14} = +0.5 \text{mA}$	4.0			V
	VOLPG	$I_{14} = -0.5 \text{mA}$			1.0	V
FG Output Voltage	V _{OHFG1}	$I_{18} = +0.5 \text{mA}$	4.0			v
z o o doput y orougo	V _{OLFG1}	$I_{18} = -0.5 \text{mA}$			1.0	v
	V _{OHFG2}	$I_{23} = +0.5 \text{mA}$	4.0			v
	V _{OLFG2}	$I_{23} = -0.5 \text{mA}$			1.0	v
CTL Amp Gain	G _{CTL}	$SG1:500Hz, 1Vp-p, V_3 = 1Vp-p$	48	50	52	dB
CTL Amp Frequency	ΔG_{CTL}	$SG1:10Hz,1Vp-p,V_3=1Vp-p$	-6	-2		dE
Characteristic	HOUL	001.10112,1 1 p p, 13 - 1 1 p p	Ŭ	-		42
	C	$SG3:500Hz, 1Vp-p, V_{17} = 1Vp-p$	46	48	50	dB
FG Amp Gain	G _{FG1}		46	48	50	dB
	G _{FG2}	$SG4:500Hz,1Vp-p,V_{22}=1Vp-p$		40 6	50	dB
FG Amp Frequency	ΔG_{FG1}	SG3:20kHz,1Vp-p,	-10	-0		ab
Characteristic		$V_{17} = 1$ Vp-p		•		10
	ΔG_{FG2}	SG4:20kHz,1Vp-p,	-10	-6		dB
		$V_{22} = 1 V p - p$				
PG Schmitt Width	V _{HPG}	SG2:500Hz	48	60		mVp-p
FG Schmitt Width	V _{HFG1}	SG3:500Hz	185	230	275	mVp-p
	$V_{\rm HFG2}$	SG4:500Hz	185	230	275	mVp-p
CTL Schmitt Width	V _{HCTL1}	SG1:500Hz,S1 = a	160	200	240	mVp-p
CTL Schmitt Width	V _{HCTL2}	SG1:500Hz,S1 = b	320	400	480	mVp-p
(Search)		,				
CTL Schmitt Width	V _{HCTL3}	SG1:500Hz,S1=c	+72	+92	+112	mV
(Slow)			–			
CTL Schmitt Width	V _{HCTL4}	SG1:500Hz,S1 = c	+34	+54	+70	mV
(Slow)	' HUIL4	541.000112,51 - 0	. 01			
(CTL Schmitt Width	V _{24H}	S1=d	3.0	3.5	4.0	V
Switching Level		S1=d	1.0	1.5	2.0	v
	V_{24L}	51-u	1.0	1.0	2.0	v
[OP Amp Characteristics] at V			0.2	0.0	1 0	^
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	I _{OSOC} 1		10			mA
(Souce)	I _{OSOC} 2		10			mA
(Output Current	I _{OSNK} 1		10			mA
(Sink)	I _{OSNK} 2		10			mA
Common-Mode Input	V_{1CM}		0	Vee	to 1.5	V
Voltage Range	. 10 M		Ŭ	100		•
Output Voltage Range	V _{OUT}		0	Vaa	to 1.5	V
Supar ronage hange	• UUT		0	- ' UU	00 1.0	v

Equivalent Circuit Block Diagram



Sample Application Circuit



Unit (resistance : Ω , capacitance : F)

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