

LA3390



3021B

Monolithic Linear IC

PLL FM MPX Demodulator with Post Amplifier

8274B

The LA3390 is a multifunctional MPX demodulator IC of a new type for use in FM stereo tuner applications. It has both FM input pin and AM input pin, performs the accessory function of output select and muting operation by means of the control pins as well as the FM MPX demodulation function, and meets electronic tuning requirements.

Functions

- PLL MPX stereo demodulator
- Gain variable type post amp
- FM-AM select
- Muting during FM-AM switchover
- Muting
- VCO stop and forced monaural

Features

- Low distortion: 0.02% typ./mono 1kHz 300mV input.
- High S/N: 84dB typ./mono 300mV input.
- Good ripple rejection of power supply: 40dB typ.
- High voltage gain: Approximately 9dB/FM, approximately 15dB/AM at standard circuit constants.
- Wide dynamic range: Distortion 1.0% or less at mono 1000mV, 1kHz input.
- Separation adjustable.

Maximum Ratings at Ta=25°C

			unit
Maximum Supply Voltage	V_{CCmax}	16	V
Lamp Drive Current	I_{Lmax}	40	mA
Allowable Power Dissipation	P_{dmax}	550	mW
Operating Temperature	Topg	-20 to +75	°C
Storage Temperature	Tstg	-40 to +125	°C

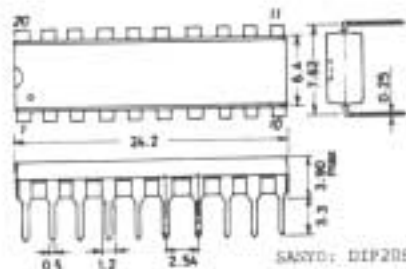
Recommended Operating Conditions at Ta=25°C

			unit
Supply Voltage	V_{CC}	10 to 14	V
Input Signal Voltage	V_i	300	mV

Operating Characteristics at Ta=25°C, $V_{CC}=12V$, Input=300mV, f=1kHz, L+R=90%, pilot=10%, specified test circuit

		min	typ	max	unit
Quiescent Current	I_{cco}		24	32	mA
Ripple Rejection of Power Supply			40		dB
Input Resistance	r_i	15k	20k		ohm

Case Outline 3021B-D20SIC
(unit:mm)



			min	typ	max	unit
Channel Separation	Sep	$f=100\text{Hz}$		45		dB
		$f=1\text{kHz}$	40	50		dB
		$f=10\text{kHz}$		45		dB
Stereo Distortion	THD _{st}	$f=100\text{Hz, main}$		0.05		%
		$f=1\text{kHz, main}$		0.05	0.15	%
		$f=10\text{kHz, main}$		0.2		%
Monaural Distortion	THD _{mono}	Mono signal input		0.02	0.1	%
AM Distortion	THD _{AM}	Pin 2 input 150mV		0.02	0.1	%
Allowable Input Level	$V_{in\text{max}}$	FM THD 1%	700			mV
		AM THD 1%	400			mV
S/N (FM)	-	Mono, $R_g=5.1\text{kohm}$, IHF BPF	80	86		dB
		Mono, $R_g=5.1\text{kohm}$, LPF only		84		dB
Muting Attenuation	ATT _{mute}	$V_s=5\text{V}$	70	80		dB
Crosstalk		AM→FM	70	80		dB
		FM→AM	70	80		dB
Muting ON Voltage	V_{mete}	Pin 5, minimum of ON-voltage	3.4			V
Muting OFF Voltage	V_{off}	(upper limit of distribution)				
		Pin 5, maximum of OFF-voltage (lower limit of distribution)			0.9	V
Muting Hysteresis	V_{hys}	Pin 5		10		dB
AM FM Switchover Voltage	V_{AM-FM}	Pin 6 AM→FM			0.4	V
		Pin 6 FM→AM	1.1			V
Lamp Lighting Level	V_L	Pilot level		10		mV
Hysteresis	h_v			3		dB
Chapture Range	CR		± 1.0	± 3		%
Output Level	$V_{oFM\text{mono}}$	Mono signal input, pins 8,10	600	800	1067	mV
	V_{oAM}	AM signal input, pins 8,10	1125	1500	2005	mV
Carrier Leak	CL			31		dB
Output DC Variation		mono→ST		30	85	mV
		ST→mute		30	85	mV
		mono→mute		30	85	mV
		AM→mute		30	85	mV
VCO Stop Voltage		Pin 11	6		11	V
Channel Balance	CB				1.0	dB
SCA Rejection				80		dB

