

SANYO

No.2720A

LA3430M

PLL FM MPX Stereo Demodulator with Pilot Canceler for Car Stereo Use

The LA3430M (MFP-16 package version of LA3430) is an MPX IC for FM car stereo use. It contains the VCO non-adjusting function, skip noise eliminating function, and pilot cancel function.

Functions

- VCO non-adjusting function
- Pilot cancel function (Level follow-up type)
- Stereo noise control function (SNC function)
- High cut control function (HCC function)
- Stereo - monaural automatic select (Pilot input prioritized)
- VCO oscillation stop function
- Forced monaural function for reception mode (Stereo lamp unlighted, pilot cancel function and HCC function held).

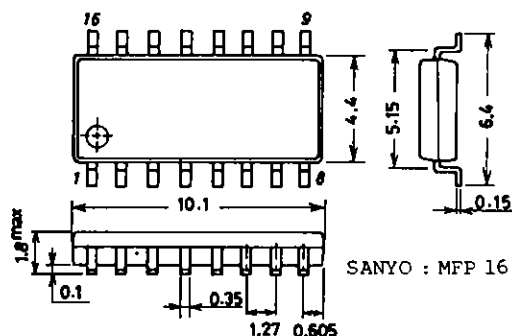
This function is provided by disconnecting pin 14 from V_{CC} .

How to provide forced monaural mode at stereo reception	Lamp	HCC	Pilot cancel
Pin 12 GND	Lighted	○	○
7.3V or greater applied to pin 11	Unlighted	×	×
Pin 15 GND	Unlighted	○	×
Pin 14 disconnected	Unlighted	○	○

Features

- Non-adjusting VCO : Eliminates the need to adjust free-running frequency.
- VCO is stable to ambient temperature changes : ± 0.1 to 0.15% for $\pm 50^{\circ}\text{C}$ change
- Low distortion (0.07% typ. / 300mV input mono)
- Good ripple rejection of power supply (35dB typ.)
- Wide operating voltage range ($V_{CC} = 6.5$ to 12V)

Package Dimensions (unit: mm)



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Maximum Ratings at Ta = 25°C

			unit
Maximum Supply Voltage	V _{CC} max	16	V
Lamp Driving Current	I _L max	30	mA
Allowable Power Dissipation	P _d max	485	mW
Operating Temperature	T _{opr}	-20 to +70	°C
Storage Temperature	T _{stg}	-40 to +125	°C

Operating Conditions at Ta = 25°C

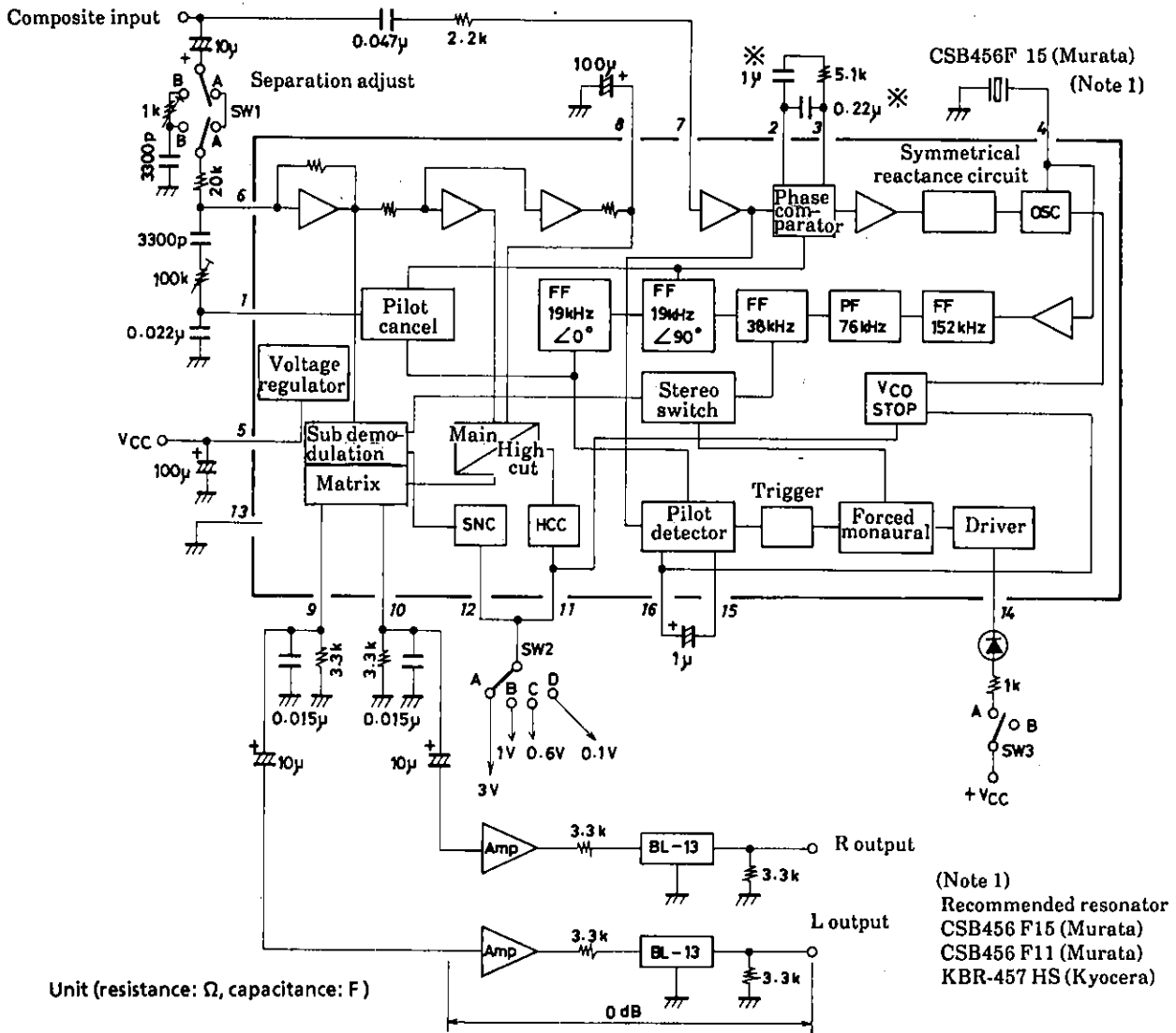
			unit
Recommended Supply Voltage	V _{CC}	10	V
Operating Voltage Range	V _{CC} op	6.5 to 12	V
Recommended Input Signal Voltage	V _i	200 to 300	mV

Operating Characteristics at Ta = 25°C, V_{CC} = 10V, V_i = 300mV, f = 1kHz, L + R = 90%, pilot = 10%

			min	typ	max	unit
Quiescent Current	I _{cco}	No input		28	38	mA
Channel Separation	Sep		40	50		dB
Total Harmonic Distortion	THD	Monaural		0.07	0.2	%
		Main		0.07	0.2	%
Lamp Lighting Level	V _L	L + R = 90%, pilot = 10%	50	85	120	mV
Lamp Hysteresis	h _y			2	6	dB
Capture Range	CR			±1		%
Output Signal Level	V _o	sub	150	215	300	mV
Signal to Noise Ratio	S/N	R _g = 20kΩ	68	74		dB
		R _g = 10kΩ	70	78		dB
Input Resistance (Pin 6)	r _i			20		kΩ
SCA Rejection	SCA rej			80		dB
Allowable Input Voltage	V _i	THD = 1%, R _g = 20kΩ	700	900		mV
		THD = 1%, R _g = 10kΩ		450		mV
SNC Output Attenuation	Att _{SNC}	V ₁₂ = 0.6V, L - R = 90%, pilot = 10%	-8.5	-3.0	-0.3	dB
SNC Output Voltage	V _o sub	V ₁₂ = 0.1V, L - R = 90%, pilot = 10%			5	mV
HCC Output Attenuation	Att _{HCC(1)}	V ₁₁ = 0.6V, L + R = 90%, pilot = 10%	-15.0	-6.0	-0.5	dB
	Att _{HCC(2)}	V ₁₁ = 1V, L + R = 90%, pilot = 10%	-2.0		0	dB
Ripple Rejection of Power Supply	R _r			35		dB
VCO Stop Voltage				7.3		V
Channel Balance				0.5	1.5	dB
Pilot Cancel			16	23		dB
Stereo Lamp Current		Minimum stereo operating current	1.0			mA
Saturation Voltage (Pin 14)		I _L = 10mA		1.0		V

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Test Circuit and Internal Equivalent Block Diagram



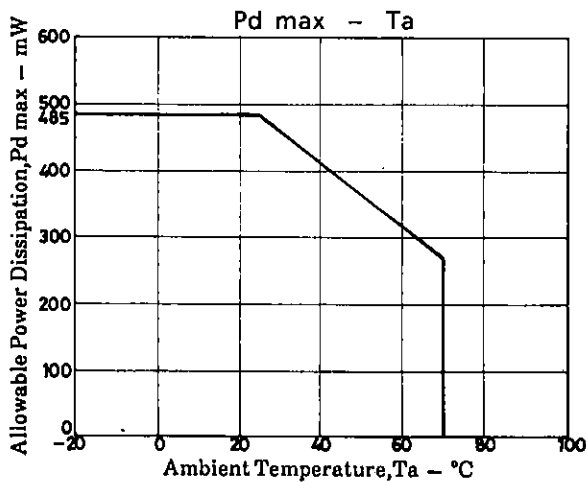
※ : When a polarized electrolytic capacitor is used in your application, the positive pole may be connected to either pin 2 or pin 3.

SW1: For characteristics other than separation, place in the A position.

SW2: For characteristics other than HCC, SNC, place in the A position.

SW3: Forced monaural of reception mode

Amp: Bandwidth 100kHz or greater, THD = 0.01% or less, input impedance 330k Ω or greater



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