

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).

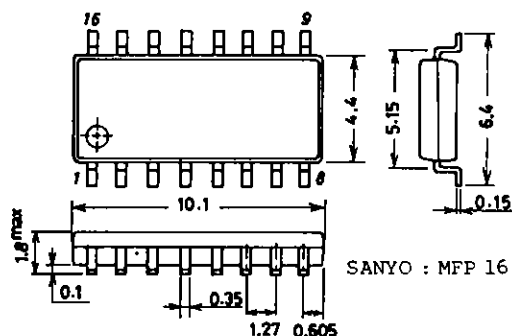
This function is provided by disconnecting pin 14 from V_{CC}.

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 ($V_{\text{CC}} = 6.5$ to 12V)

Package Dimensions (unit: mm)



LA3430M

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

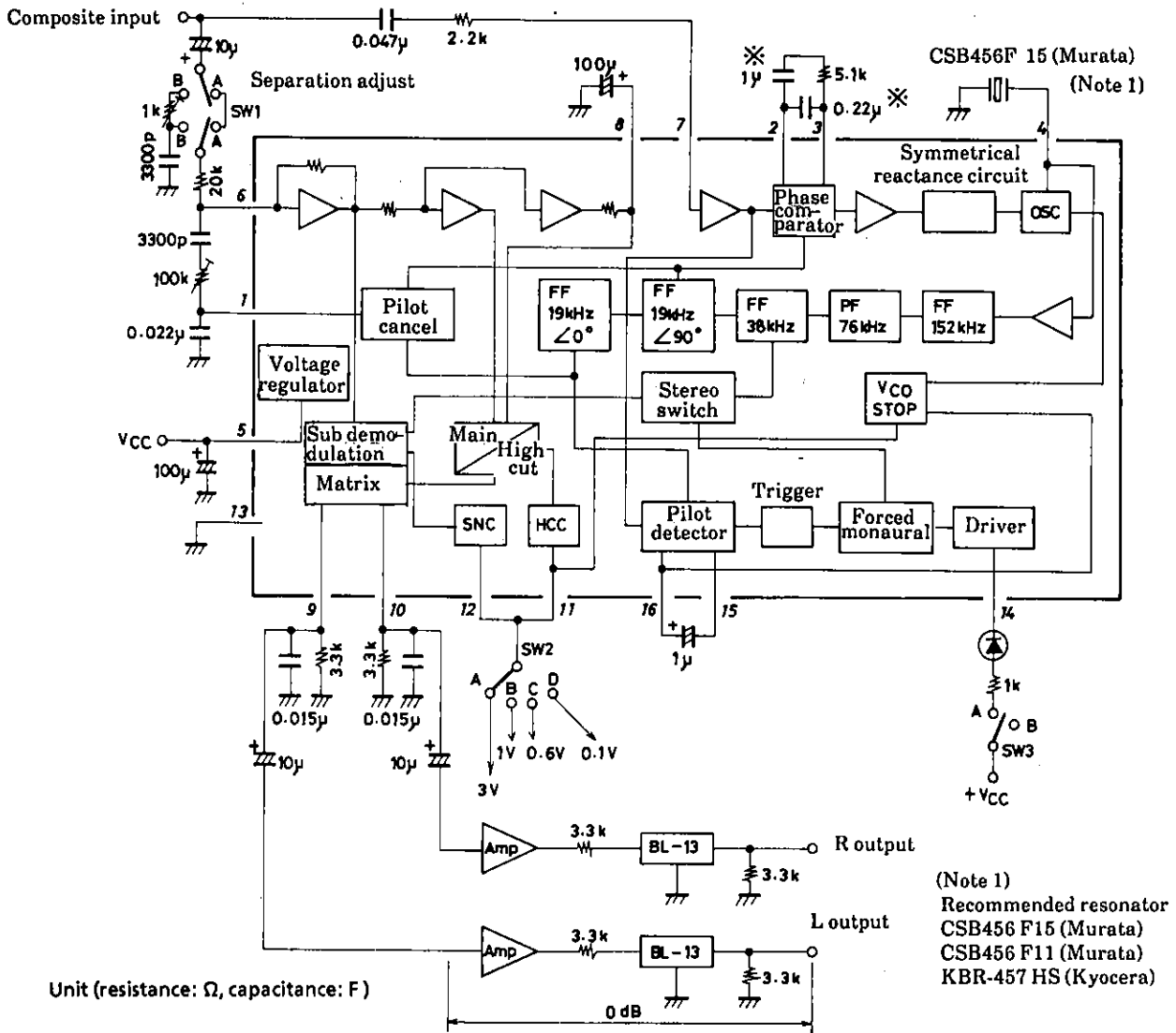
			unit
Recommended Supply Voltage	V _{CC}	10	V
Operating Voltage Range	V _{CC} op	6.5 to 12	V
Recommended Input Signal Voltage	V _i	200 to 300	mV

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

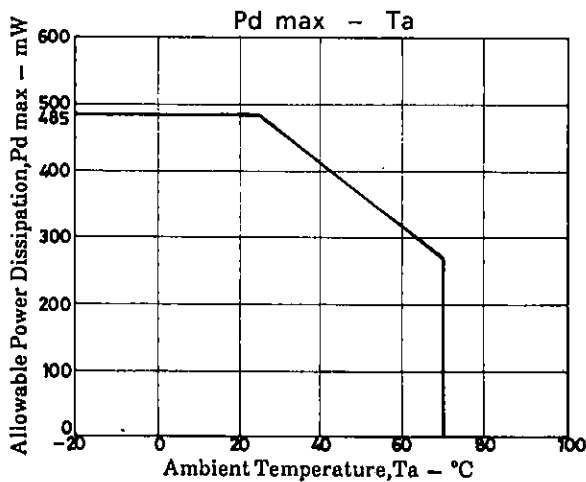
			min	typ	max	unit
Quiescent Current	I _{cco}	No input		28	38	mA
Channel Separation	Sep		40	50		dB
Total Harmonic Distortion	THD	Monaural		0.07	0.2	%
		Main		0.07	0.2	%
Lamp Lighting Level	V _L	L + R = 90%, pilot = 10%	50	85	120	mV
Lamp Hysteresis	h _y			2	6	dB
Capture Range	CR			±1		%
Output Signal Level	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

LA3430M

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



- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
 - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
 - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.