

SANYO

No.1833B

LA2220

ARI System For Car Radio
(SK Type, Nonadjusting VCO)

The LA2220 is a traffic decoder (SK) IC designed for ARI (Autofahrer Rundfunk Informationen) now in effect in Europe. It permits complete non-adjusting and provides a malfunction preventing function at the RDS (or PI system) reception mode.

Features

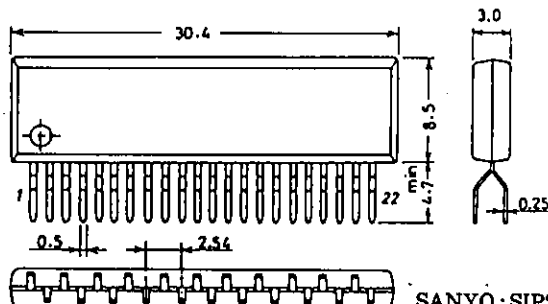
- . The use of a 456kHz ceramic resonator, 57kHz BPF eliminates the need to adjust free-running frequency and also eliminates the need to use a coil, permitting complete non-adjusting.
- . The BK signal detector is provided as a measure against malfunction at the RDS (or PI system) reception mode. The SK signal and BK signal are ANDed to provide LED display.
- . The lighting level can be changed by C, R connected to the BPF externally.
- . SK signal only can be detected for automatic search use. (Pin 16 SK-STOP)
- . The lighting level can be raised by applying DC voltage. (Pin 17 $V_{SK-CONT}$)
- . Single-end 22-pin package permitting good space factor.

Functions

- . SK operation: 57kHz(SK) and 23.75 to 53.98Hz(BK) are ANDed to provide LED display.
Composite signal is controlled.(Muting)
- . Muting switch: When pin 4 is grounded, the signal is through regardless of the presence or absence of SK, BK. LED display by SK + BK is provided.
- . Oscillation stop switch: When voltage (5.5V to $V_{CC}-1.4V$) is applied to pin 20, the OSC stops operating and the signal is through. LED display is turned OFF.
- . DK, BK output: The 57kHz AM detector delivers DK, BK signals. When oscillation stops, detection operation stops.
- . SK stop: The presence of 57kHz(SK) sets pin 16 voltage to "L". Used as the stop signal at the automatic search mode: 57kHz-SK presence/absence
→ $V_{16}=0V/3.6V$
- . Lighting level control: When voltage is applied to pin 17, the 57kHz(SK) detect level rises. Used to prevent LED from lighting mistakenly at the weak signal mode.

Package Dimensions 3066

(unit: mm)



SANYO Electric Co., Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

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LA2220

Maximum Ratings at Ta=25°C

				unit
Maximum Supply Voltage	V _{CC} max	V ₁₋₁₀	16	V
		V ₁₁₋₁₀	16	V
Maximum Flow-in Current		I ₃	1	mA
Lamp Drive Current	I _L max	I ₁₁	30	mA
Allowable Power Dissipation	Pdmax		574	mW
Operating Temperature	Topg		-30 to +80	°C
Storage Temperature	Tstg		-40 to +125	°C

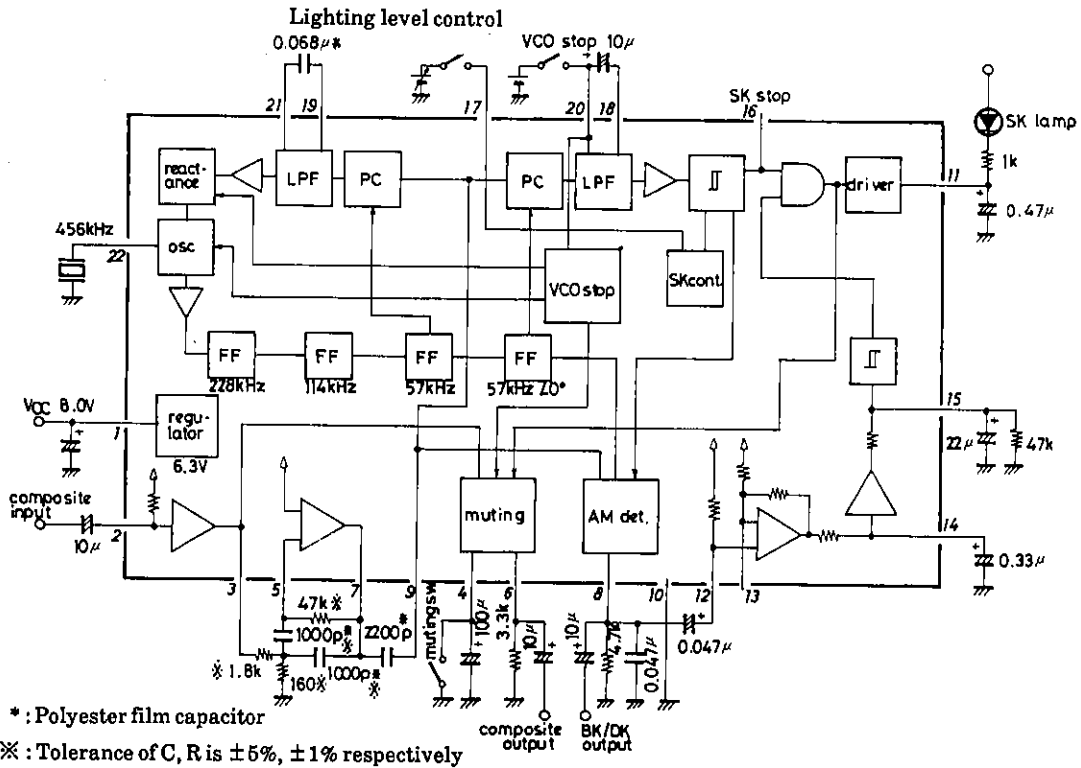
Operating Conditions at Ta=25°C

				unit
Recommended Supply Voltage	V _{CC}		8	V
Operating Voltage Range	V _{CC} op		7 to 12	V
Input Signal Voltage	V _{in}	100%mod	200 to 300	mV
		f=57kHz	10 to 15	mV
Lamp Drive Current	I _L		1 to 25	mA

Operating Characteristics at Ta=25°C, V_{CC}=8V, v_{in}=200mV, L+R=85%, 19kHz pilot=10%, 57kHz pilot=5%, f=1kHz

			min	typ	max	unit
Quiescent Current	I _{cco}		17	24	34	mA
Input Resistance	r _i			40k		ohm
SK Detect Level	V _{SK}	f=57kHz, pin 2 input	2.5	3.6	5.5	mV
SK Hysteresis	hy _{SK}	"		5.5		dB
BK Detect Level	V _{BK}	f=23.75Hz, pin 12 input		17		mV
BK Hysteresis	hy _{BK}	"		3		dB
Capture Range	CR	f=57kHz, v _{in} =10mV		±1.2		%
Output Level	VoAF	f=1kHz, v _{in} =200mV	147	210	294	mV
DK Output Level	VoDK	f=57kHz, v _{in} =10mV, 125Hz-30%mod	27	38	54	mV
Total Harmonic Distortion	THD	f=1kHz, v _{in} =200mV		0.13	0.5	%
Signal Attenuation	V _{MUTE}	f=1kHz, DIN-AUDIO filter	-60	-75		dB

Equivalent Circuit Block Diagram (Including Peripheral Circuit)



Unit (resistance: Ω, capacitance: F)

