



# LA1186N

## FM Front End for Radio-Cassette Recorders, Music Centers

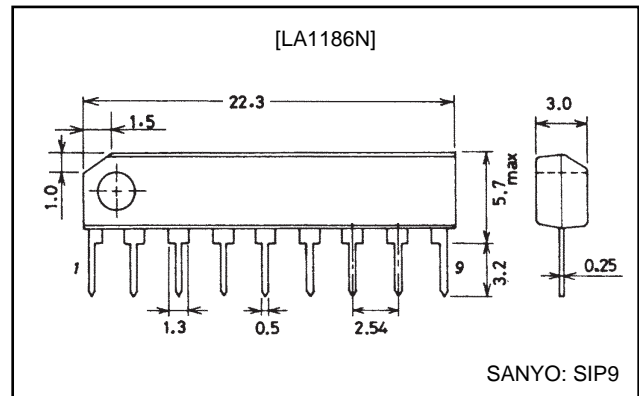
### Features and Functions

- Contains RF amplifier, MIX, OSC, AFC diode.
- Operating voltage : 1.8 to 8.0V.
- Improvement in cross modulation characteristic due to the use of double-balanced MIX.
- Improvement in strong input characteristic.
- Minimum number of external parts required.
- Less spurious radiation from local OSC.
- TV (1 to 12 channel) receive capability.

### Package Dimensions

unit: mm

#### 3017C-SIP9



### Specifications

#### Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V <sub>CC</sub> max		8.0	V
Maximum pin voltage	V <sub>3-5</sub>		12	V
	V <sub>6-5</sub>		V <sub>CC</sub> +0.8	V
Allowable power dissipation	P <sub>d</sub> max	T <sub>a</sub> ≤80°C	150	mW
Operating temperature	T <sub>opr</sub>		-20 to +80	°C
Storage temperature	T <sub>stg</sub>		-40 to +125	°C

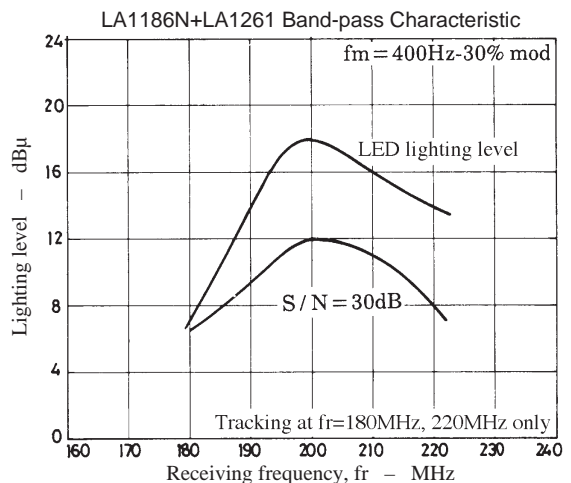
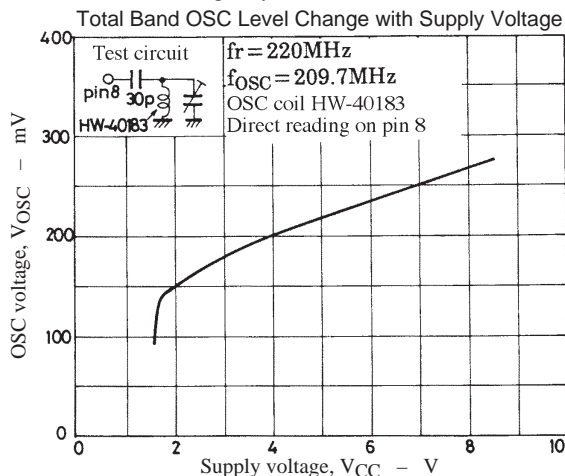
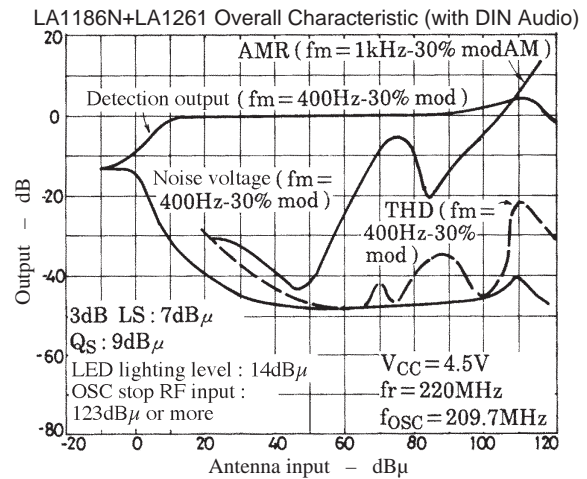
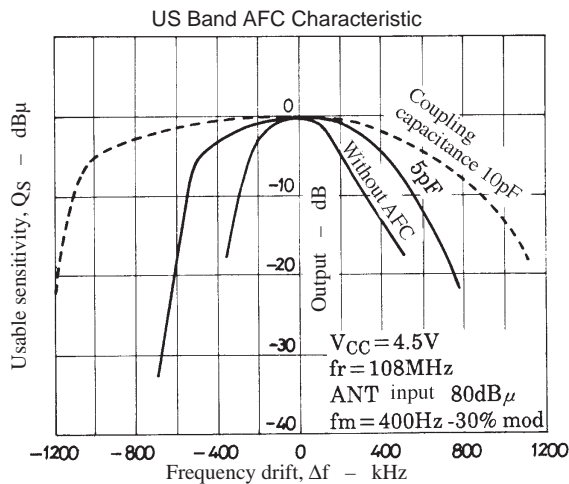
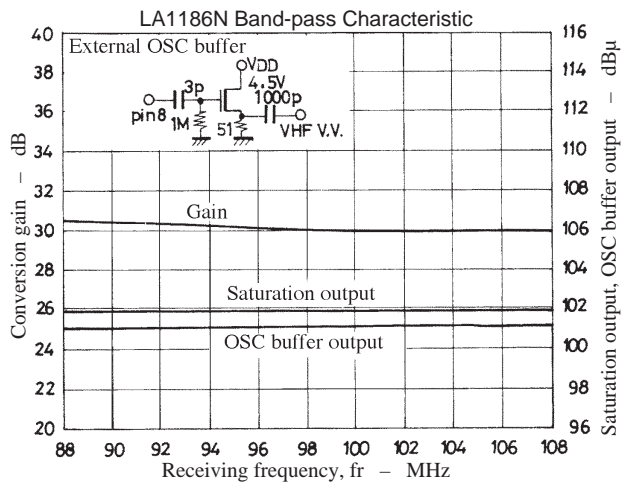
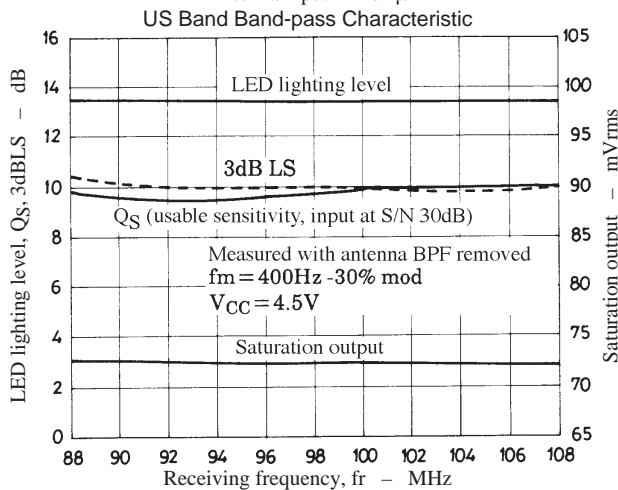
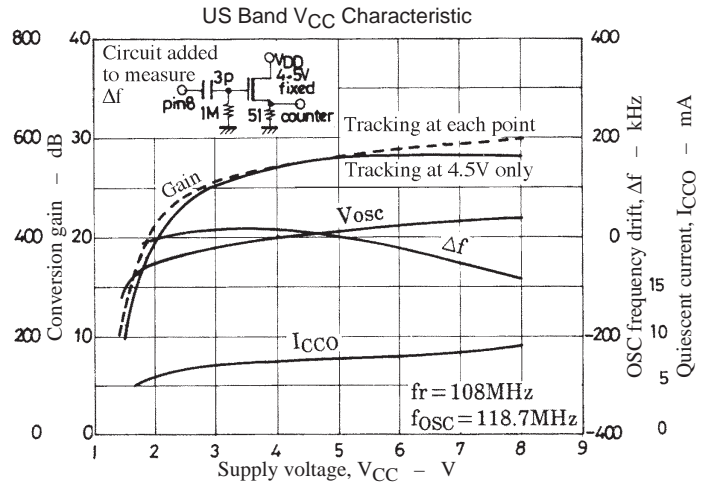
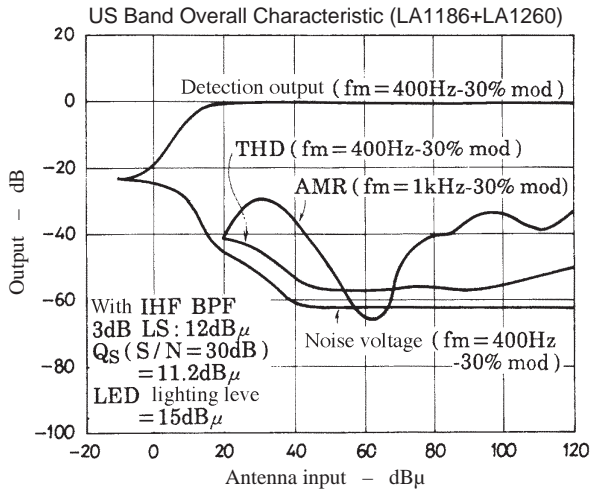
#### Operating Conditions at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V <sub>CC</sub>		4.5	V
Operating voltage range	V <sub>CC</sub> op		1.8 to 7.5	V

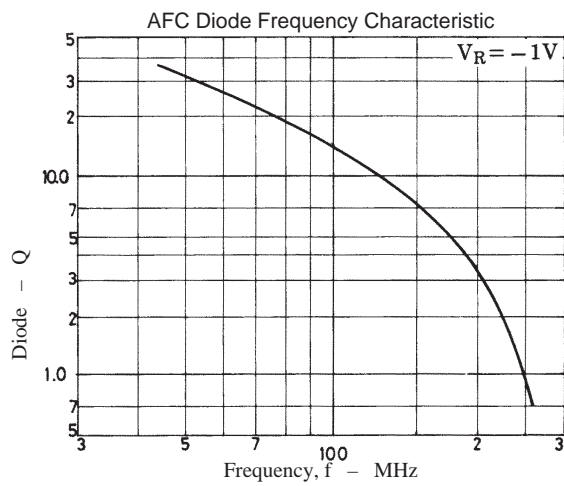
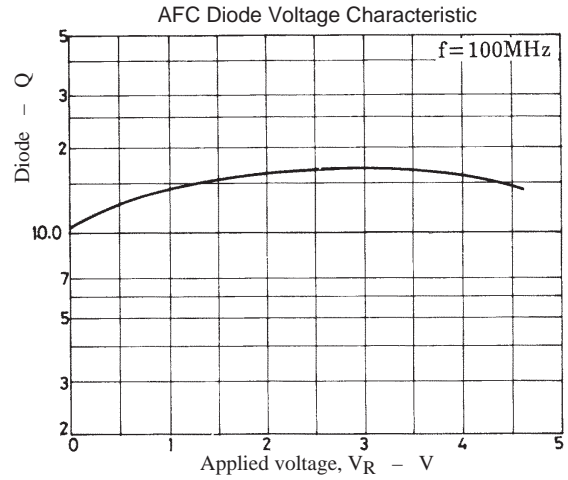
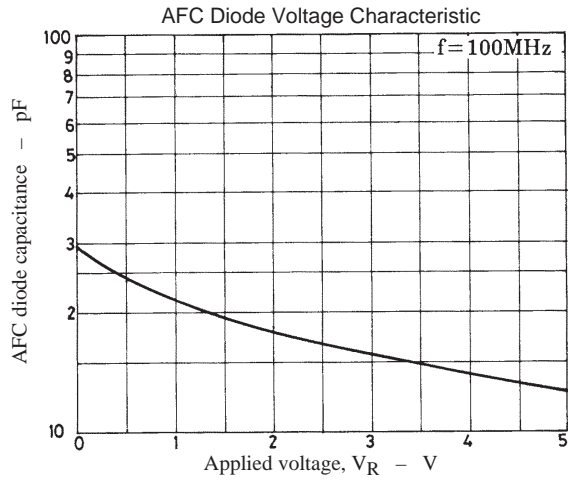
#### Electrical Characteristics at Ta=25°C, V<sub>CC</sub>=4.5V, f<sub>r</sub>=108MHz, f<sub>OSC</sub>=118.7MHz, See specified Test Circuit.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current dissipation	I <sub>CC</sub>	Quiescent		7.0	9.5	mA
Output saturation voltage	V <sub>o</sub>	V <sub>IN</sub> =100dBμ	95	115	135	V
Local OSC voltage	V <sub>OSC</sub>	V <sub>CC</sub> =2V	200	315		mVrms
Oscillation stop voltage				1.4	1.8	V

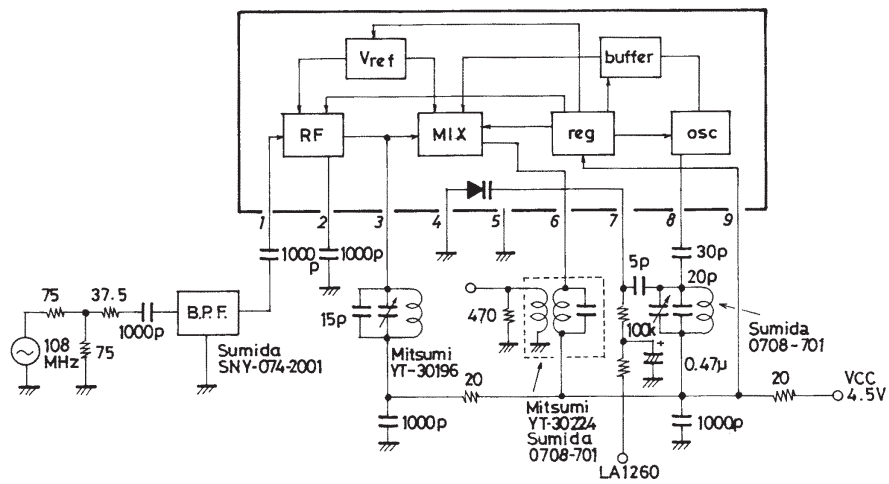
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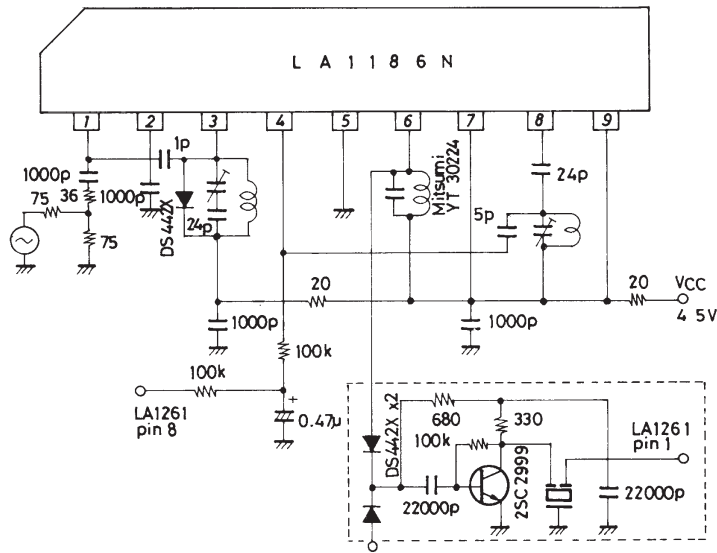
## US Band Test Circuit



Unit (resistance :  $\Omega$ , capacitance : F)

# LA1186N

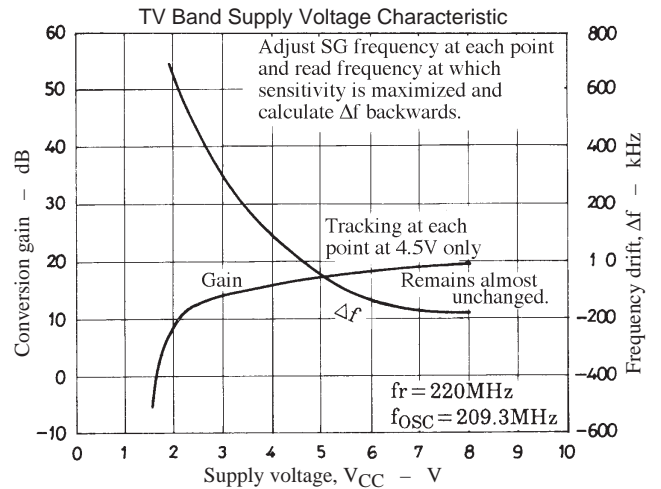
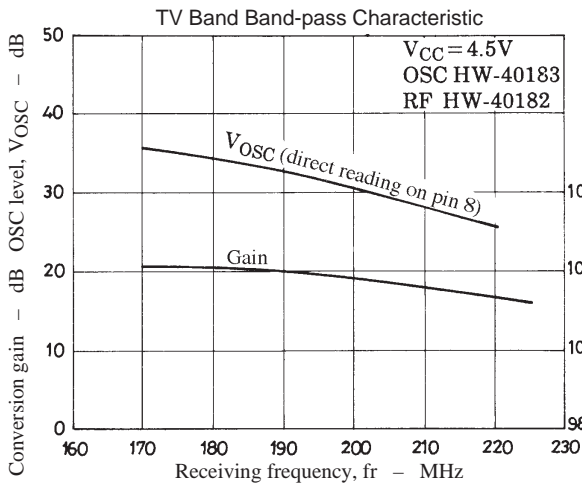
## Sample Application Circuit for TV Band



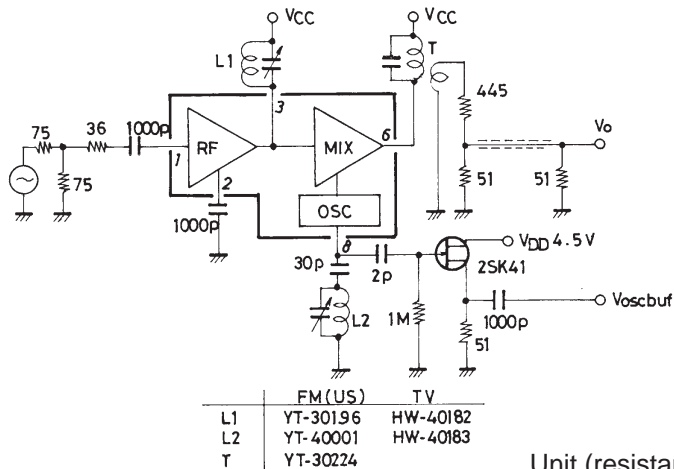
FM band LA1186 MIX output

TV band (4 to 12ch),  
FM band (FM + TV1 to 3ch)  
Select circuit

Unit (resistance :  $\Omega$ , capacitance : F)

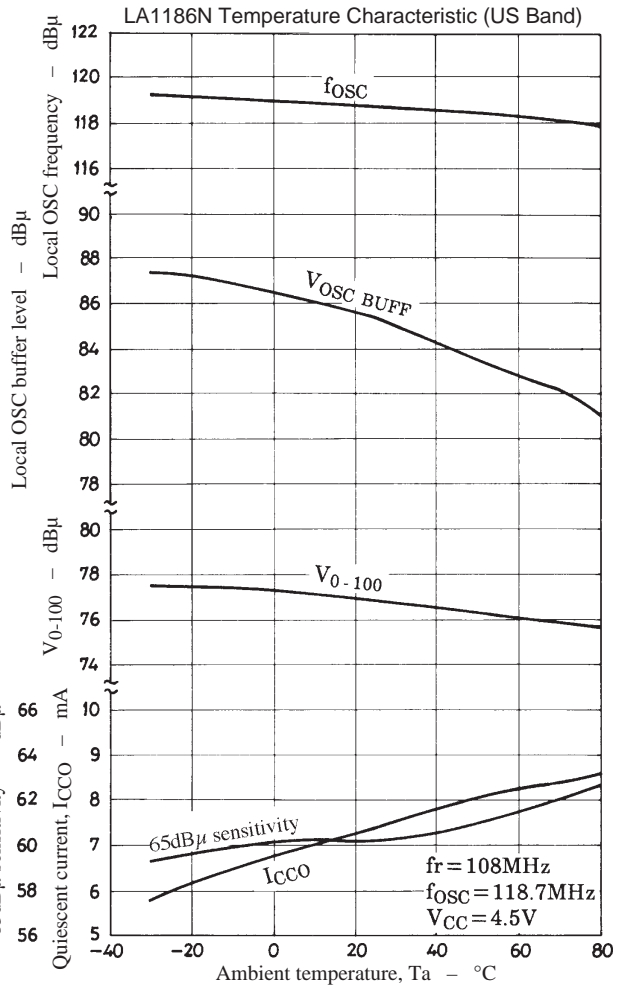
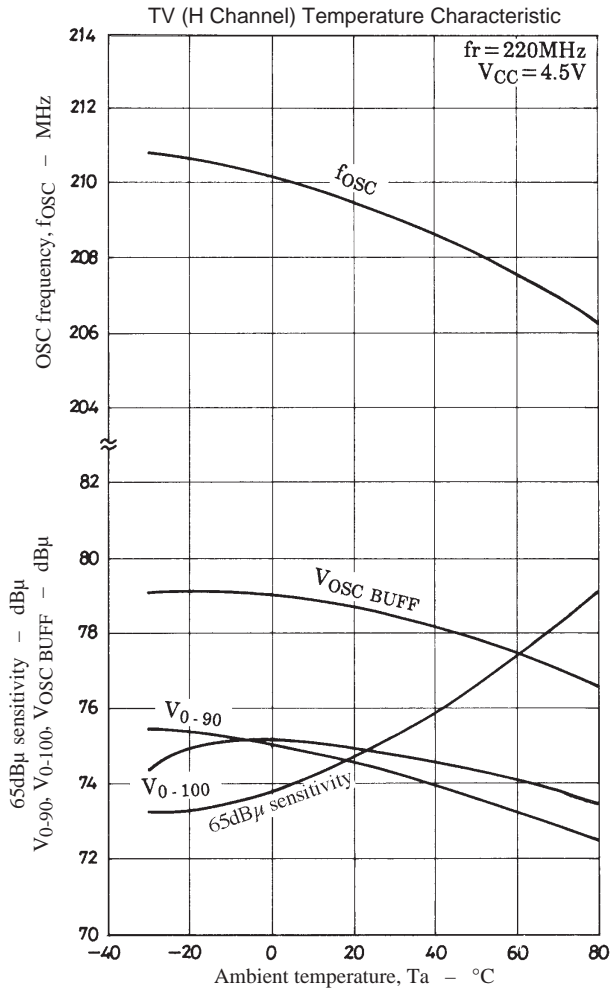


## LA1186N Temperature Characteristic Test Circuit



Unit (resistance :  $\Omega$ , capacitance : F)

# LA1186N



(Note)  $65\text{dB}\mu$  sensitivity : Input at  $65\text{ dB}\mu$  in Temperature Characteristic Test Circuit

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