



LA1186N

FM Front End for Radio-Cassette Recorders, Music Centers

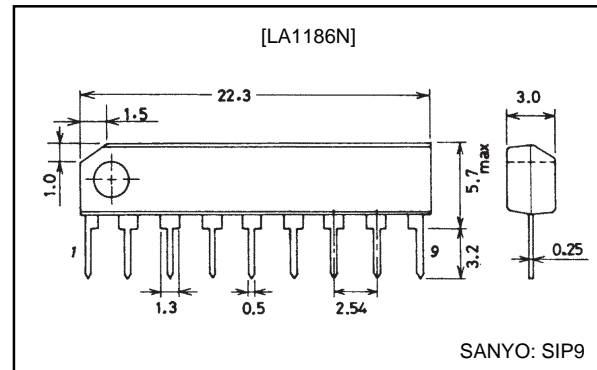
Features and Functions

- 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 $T_a=25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|--------------|-----------------------------|--------------|------------------|
| Maximum supply voltage | V_{CC} max | | 8.0 | V |
| Maximum pin voltage | V3-5 | | 12 | V |
| | V6-5 | | $V_{CC}+0.8$ | V |
| Allowable power dissipation | P_d max | $T_a \leq 80^\circ\text{C}$ | 150 | mW |
| Operating temperature | T_{opr} | | -20 to +80 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | | -40 to +125 | $^\circ\text{C}$ |

Operating Conditions at $T_a=25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|----------------------------|-------------|------------|------------|------|
| Recommended supply voltage | V_{CC} | | 4.5 | V |
| Operating voltage range | V_{CC} op | | 1.8 to 7.5 | V |

Electrical Characteristics at $T_a=25^\circ\text{C}$, $V_{CC}=4.5\text{V}$, $f_I=108\text{MHz}$, $f_{OSC}=118.7\text{MHz}$, See specified Test Circuit.

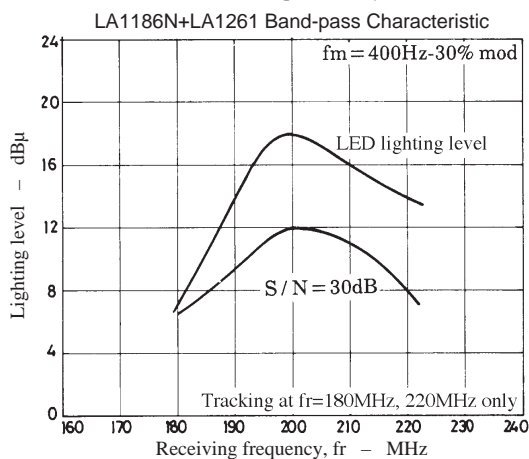
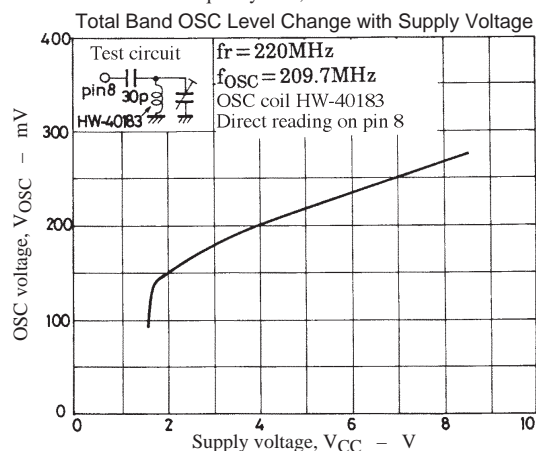
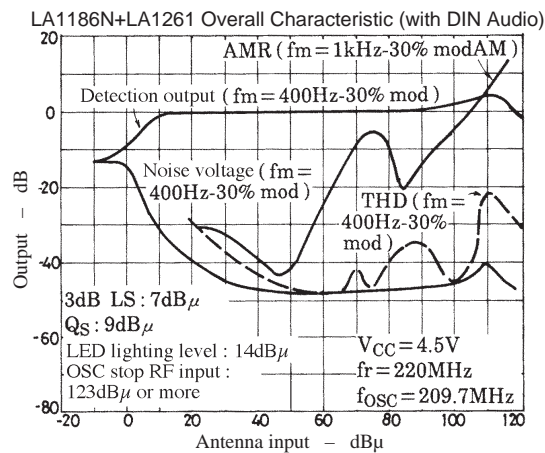
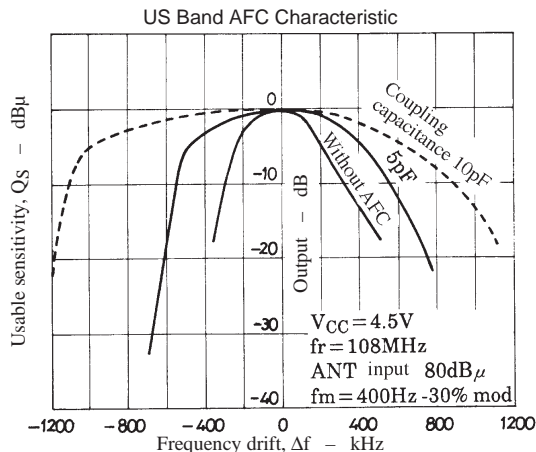
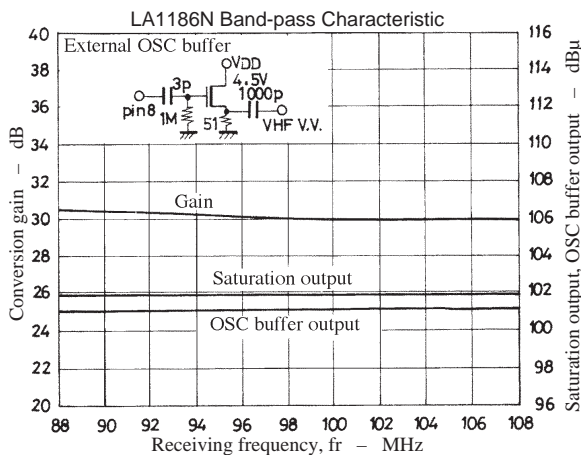
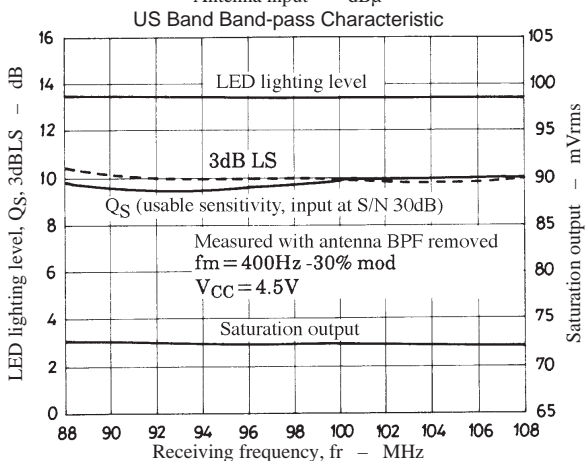
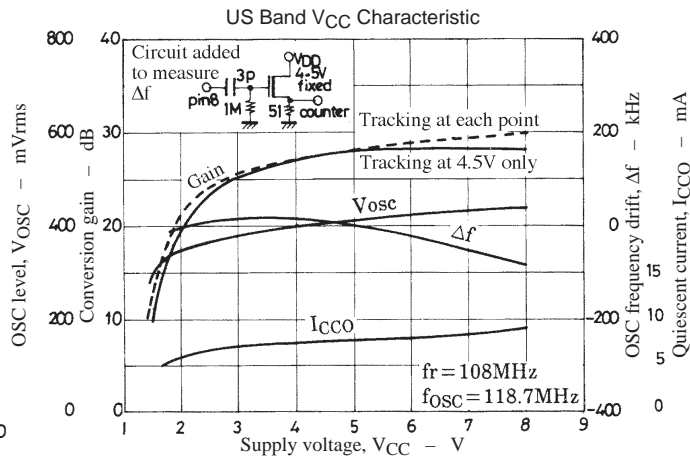
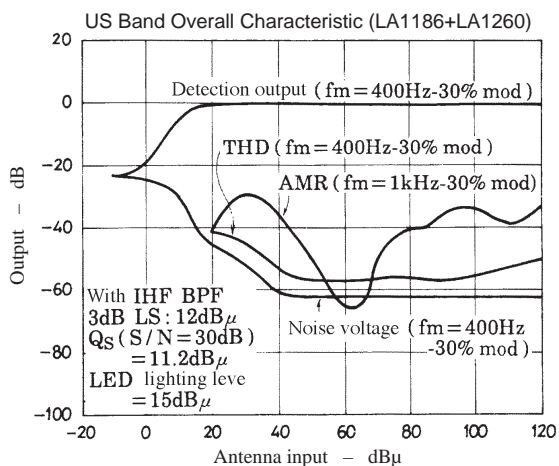
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---------------------------|-----------|--------------------------|---------|-----|-----|-------|
| | | | min | typ | max | |
| Current dissipation | I_{CC} | Quiescent | | 7.0 | 9.5 | mA |
| Output saturation voltage | V_o | $V_{IN}=100\text{dB}\mu$ | 95 | 115 | 135 | V |
| Local OSC voltage | V_{OSC} | $V_{CC}=2\text{V}$ | 200 | 315 | | mVrms |
| Oscillation stop voltage | | | | 1.4 | 1.8 | V |

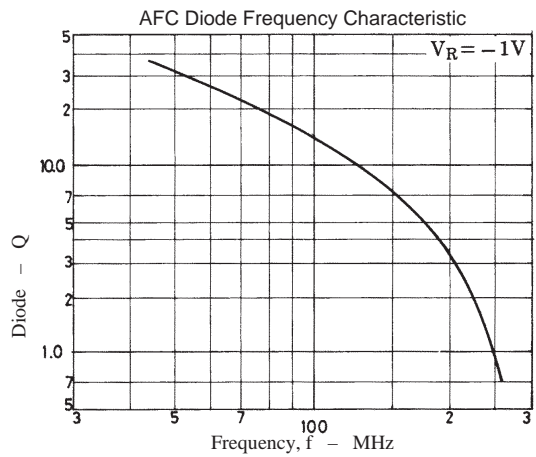
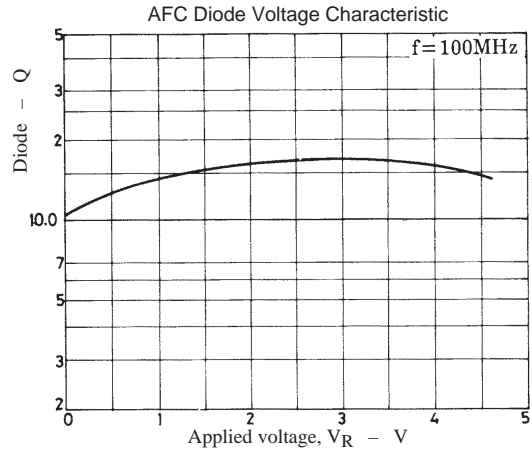
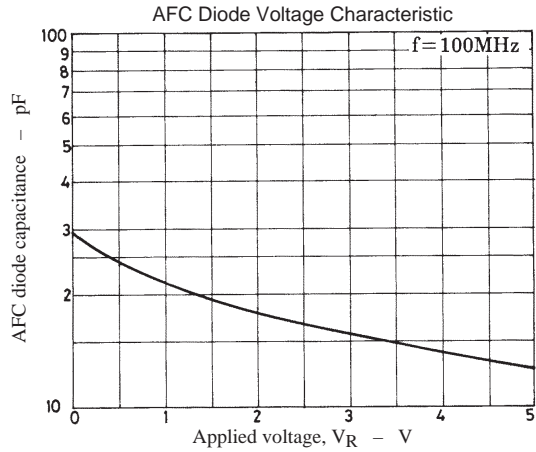
SANYO Electric Co.,Ltd. Semiconductor Business Headquarters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

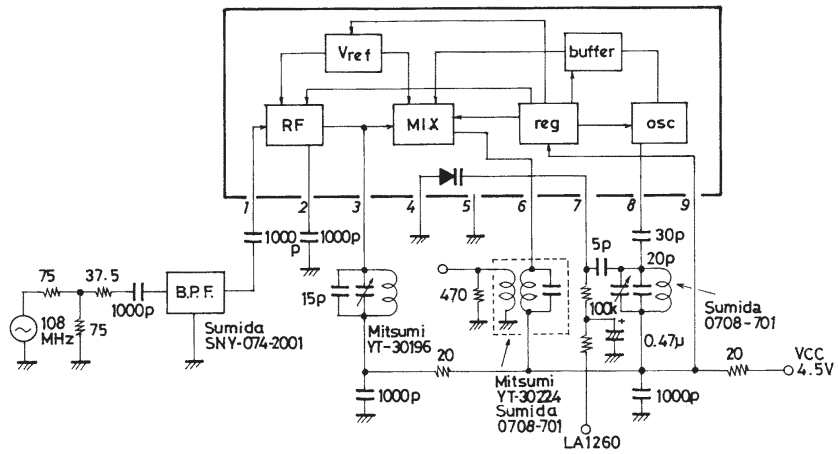
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LA1186N





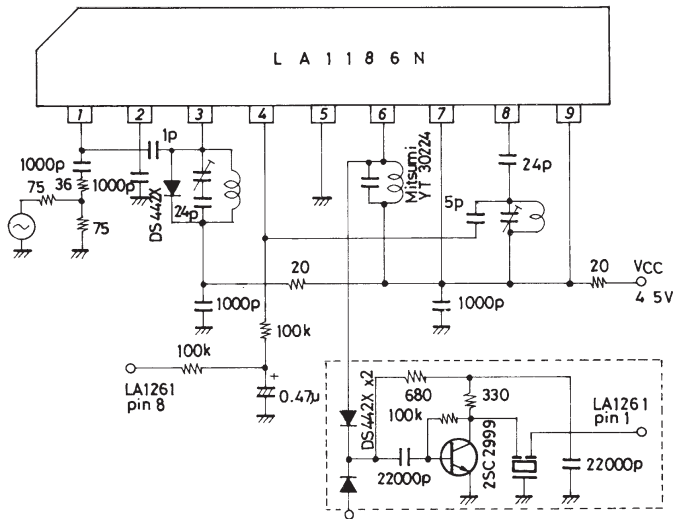
US Band Test Circuit



Unit (resistance : Ω , capacitance : F)

LA1186N

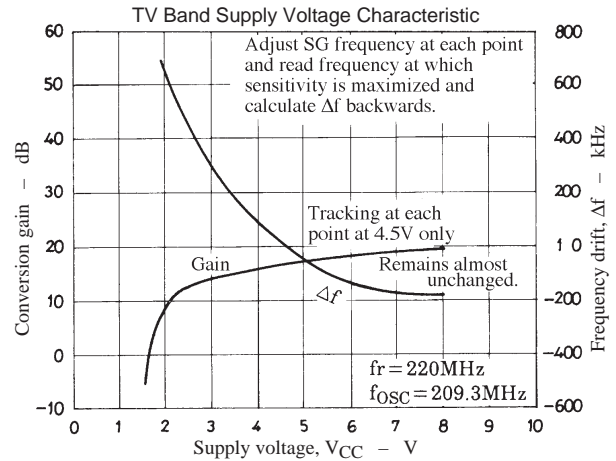
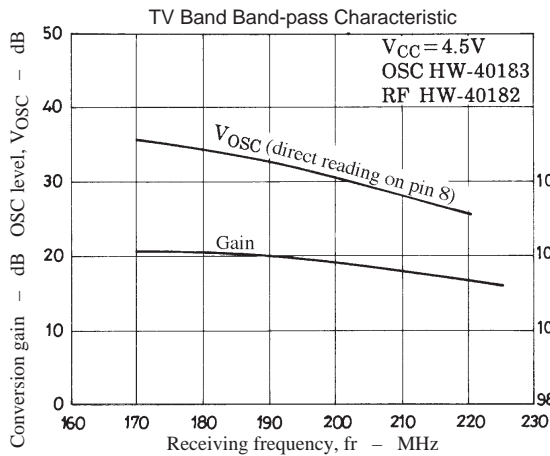
Sample Application Circuit for TV Band



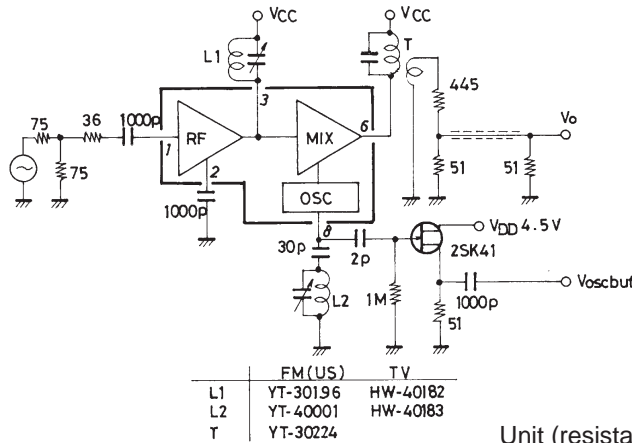
FM band LA1186 MIX output

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

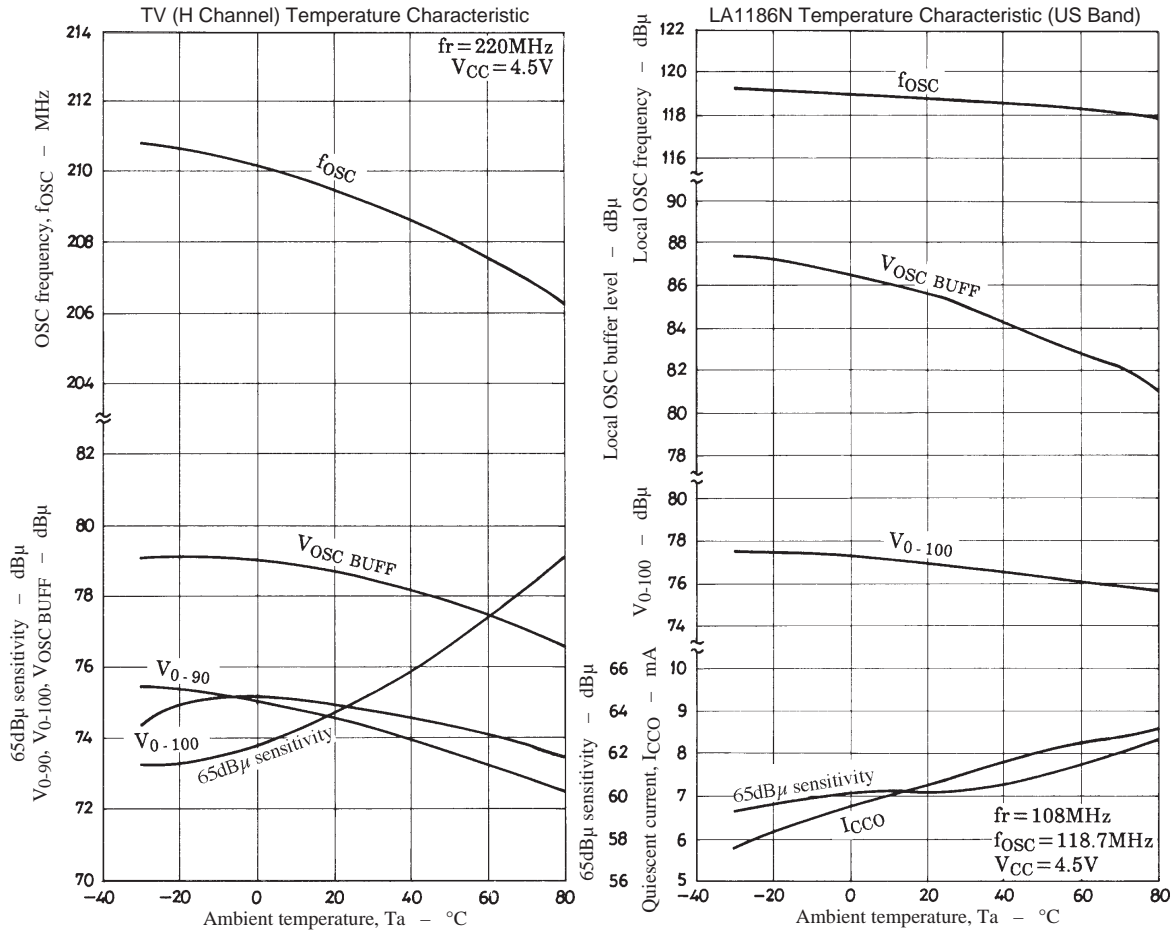
Unit (resistance : Ω , capacitance : F)



LA1186N Temperature Characteristic Test Circuit



Unit (resistance : Ω , capacitance : F)



(Note) 65dBμ sensitivity : Input at 65 dBμ in Temperature Characteristic Test Circuit

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