



LA1185

FM Front-end for Radio-cassette Recorder, Home Stereo Applications

Overview

The LA1185 is an FM receiver front-end IC for radio-cassette recorder, music center applications. Its mixer is of double-balanced type. The built-in oscillator and buffer amplifier improves the strong input characteristic.

Use

- FM front-end IC for radio-cassette recorders and music centers

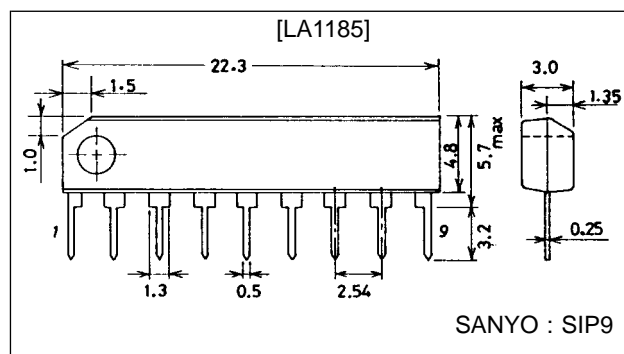
Functions and Features

- RF amplifier, mixer, local oscillator
- Improvement in cross modulation characteristics due to the use of double-balanced mixer.
- Improvement in strong input characteristic.
- Minimum number of external parts required.
- Less spurious radiation from local oscillator.
- Operating voltage range : 1.5 to 8.0 V

Package Dimensions

unit : mm

3017C-SIP9



Specifications

Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|---------------------|-----------------------|-----------------------|------|
| Maximum supply voltage | V _{CC} max | | 8 | V |
| Maximum pin voltage | V ₃₋₅ | | 12 | V |
| | V ₆₋₅ | | V _{CC} + 0.8 | V |
| Allowable power dissipation | P _d max | T _a ≤ 80°C | 150 | mW |
| Operating temperature | T _{opr} | | -20 to +80 | °C |
| Storage temperature | T _{stg} | | -40 to +125 | °C |

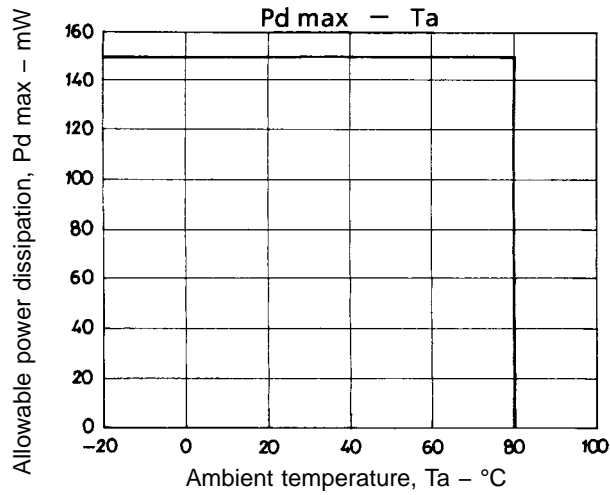
Operating Conditions at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|----------------------------|-------------------|------------|------------|------|
| Recommended supply voltage | V _{CC} | | 4.5 | V |
| Operating voltage range | V _{CCOP} | | 1.5 to 8.0 | V |

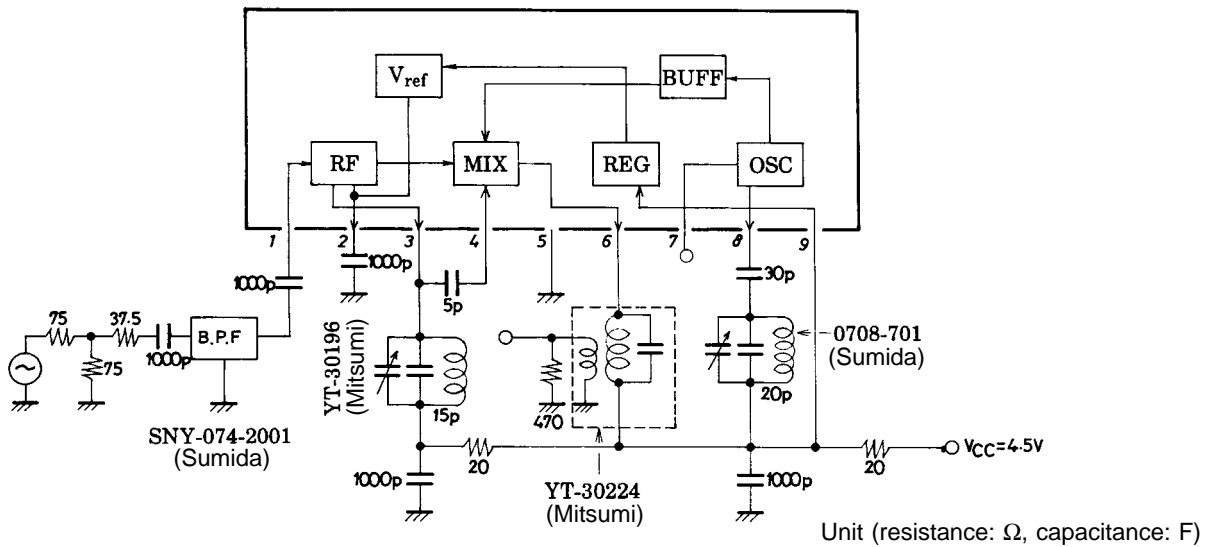
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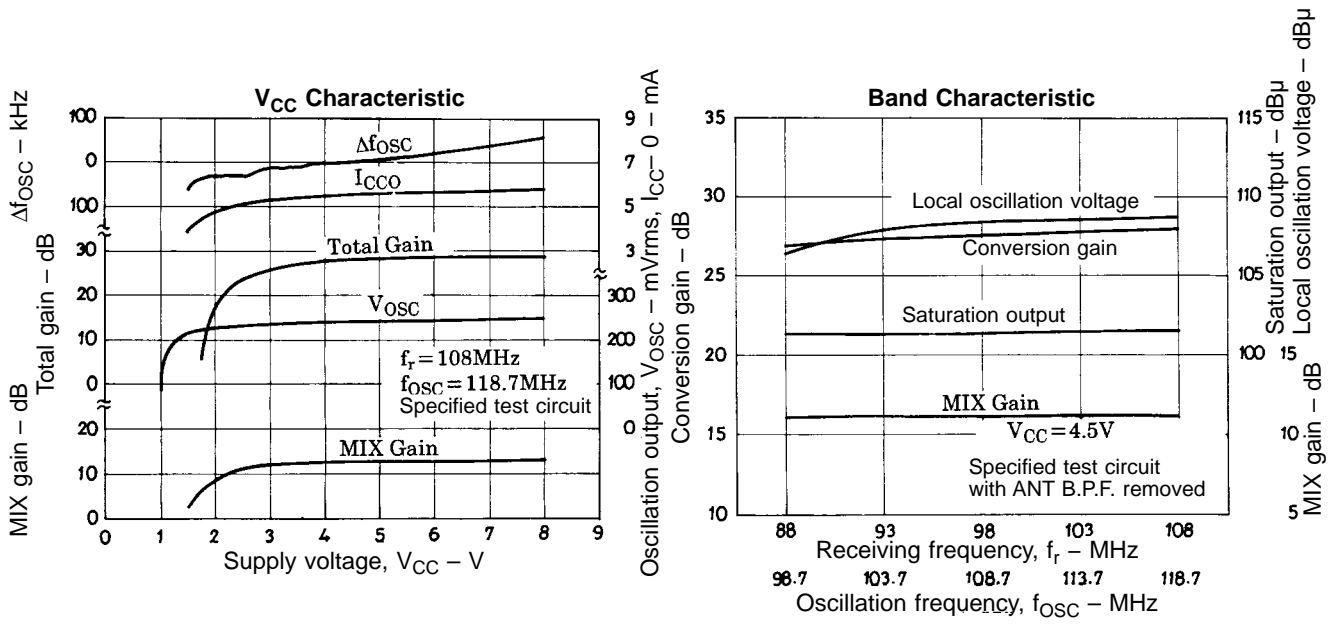
**Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 4.5\text{ V}$, $f_r = 108\text{ MHz}$, $f_{OSC} = 118.7\text{ MHz}$,
See specified Test Circuit**

| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---------------------------|------------|-----------------------|-----|-----|-----|-------|
| Current dissipation | I_{CC} | Quiescent | | 5.5 | 8.0 | mA |
| Output saturation voltage | V_o | 100 dB μ | 95 | 115 | 135 | mVrms |
| Local oscillation voltage | V_{OSC} | $V_{CC} = 2\text{ V}$ | 190 | 235 | | mVrms |
| Oscillation stop voltage | V_{stop} | | | 1.4 | 1.6 | V |

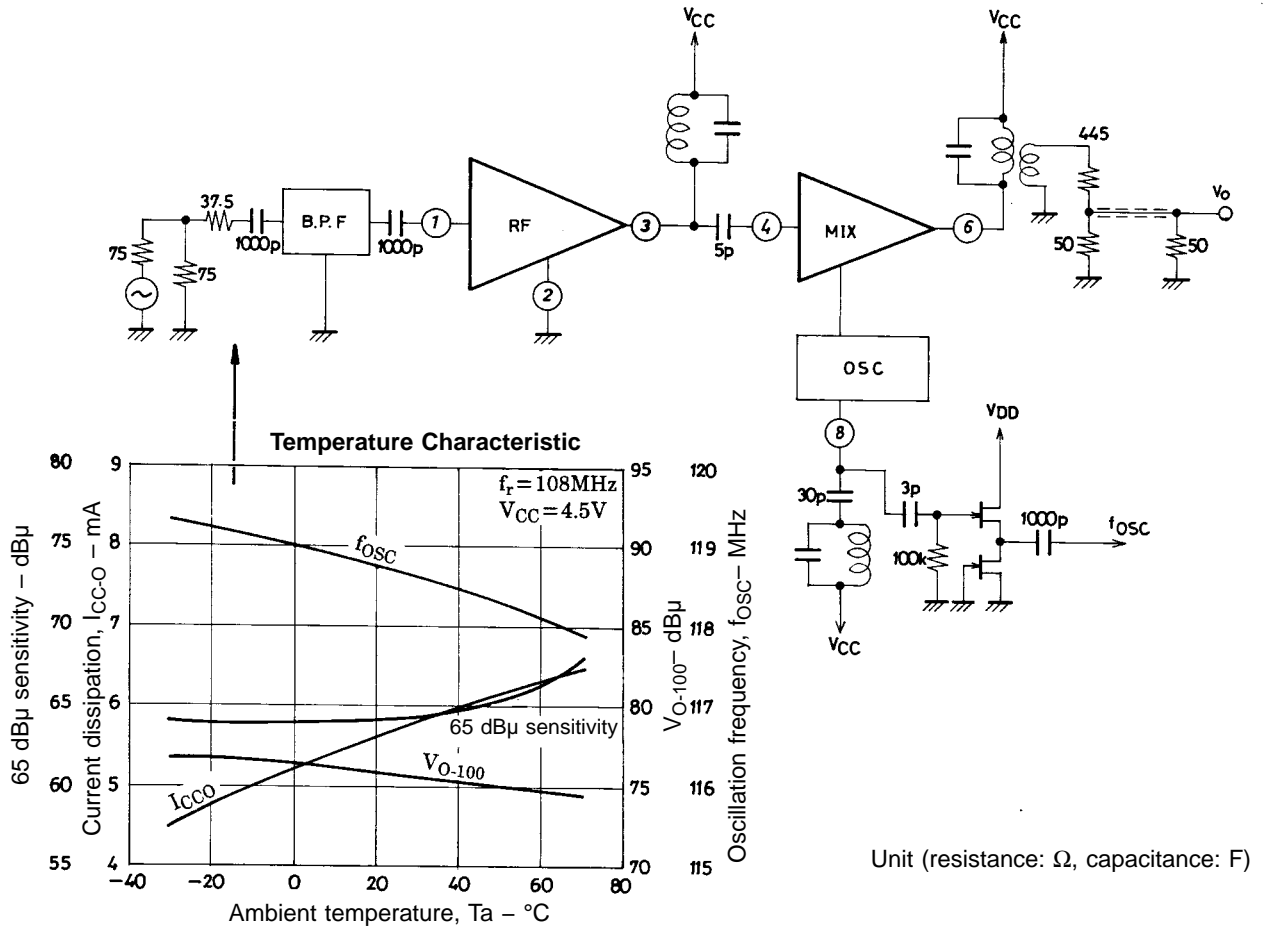


Test Circuit and Equivalent Circuit Block Diagram



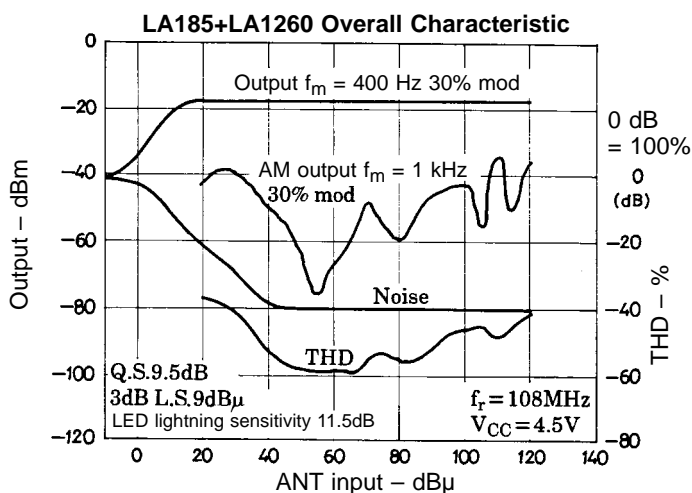
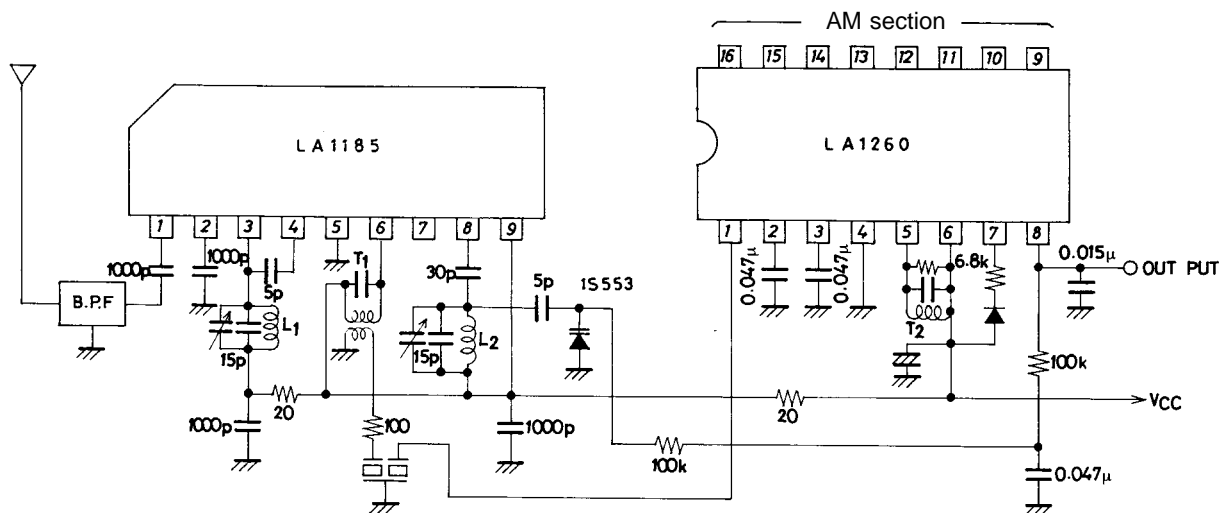


Temperature Characteristic Test Circuit



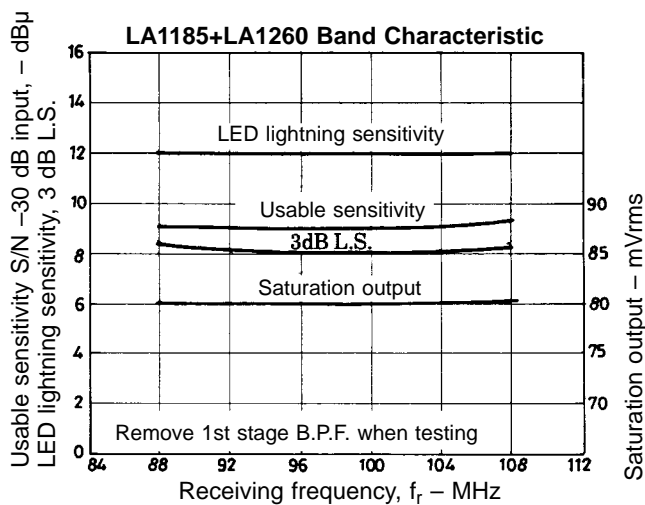
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Sample Application Circuit: LA1185 + LA1260 US band



Unit (resistance: Ω, capacitance: F)

| | Mitsumi | Sumida |
|--------|----------|---------------|
| T1 | YT-30224 | 2153-4016-006 |
| T2 | YT-30194 | 2153-4095-339 |
| L1 | YT-30196 | 0708-700 |
| L2 | YT-40001 | 0708-701 |
| B.P.F. | YT-30025 | SNY-074-2001 |



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