

SANYO

No.1338C

**LA1180**

Monolithic Linear IC
FM FRONT END
FOR RADIO-CASSETTE RECORDER USE

The LA1180 is an FM front end for radio-cassette recorder, music center use. It has a wide operating voltage range and provides a stable high gain. The on-chip AFC diode minimizes the number of external parts required.

Functions

. RF amp . MIX . OSC . AFC diode

Features

- . Wide operating voltage range
- . Stable high gain.
- . Minimum number of external parts required because of on-chip AFC diode.

Maximum Ratings at $T_a=25^{\circ}\text{C}$

			unit
Maximum Supply Voltage	$V_{CC\max}$	7	V
Maximum Pin Voltage	V_{3-5} Pin3 V_{6-5} Pin6 V_{7-5} Pin7	10 10 10	V
Allowable Power Dissipation	$P_{D\max}$ $T_a=80^{\circ}\text{C}$	100	mW
Operating Temperature	T_{opg}	-20 to +80	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40 to +125	$^{\circ}\text{C}$

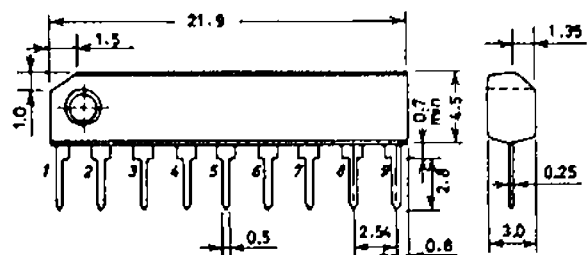
Operating Conditions at $T_a=25^{\circ}\text{C}$

			unit
Recommended Supply Voltage	V_{CC}	4	V
Operating Voltage Range	V_{CCop}	1.8 to 6	V

Operating Characteristics at $T_a=25^{\circ}\text{C}$, $V_{CC}=4\text{V}$, $f_r=83\text{MHz}$, $f_{OSC}=72.3\text{MHz}$, See specified Test Circuit.

			min	typ	max	unit
Current Dissipation	I_{CC}	Quiescent		3	5	mA
Output Saturation Voltage	V_o	100dBu	100	125	160	mVrms
Local Oscillation Voltage	V_{OSC}	$V_{CC}=2\text{V}$	180	300		mVrms
Oscillation Stop Voltage	V_{stop}		1.4	1.6		V

Case Outline 3017B-S9IC
(unit:mm)



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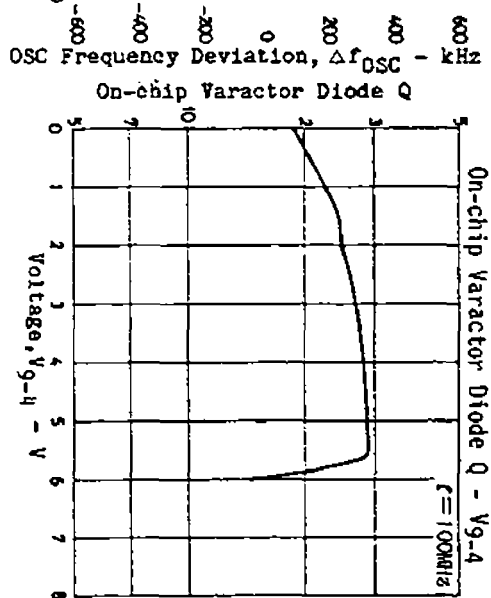
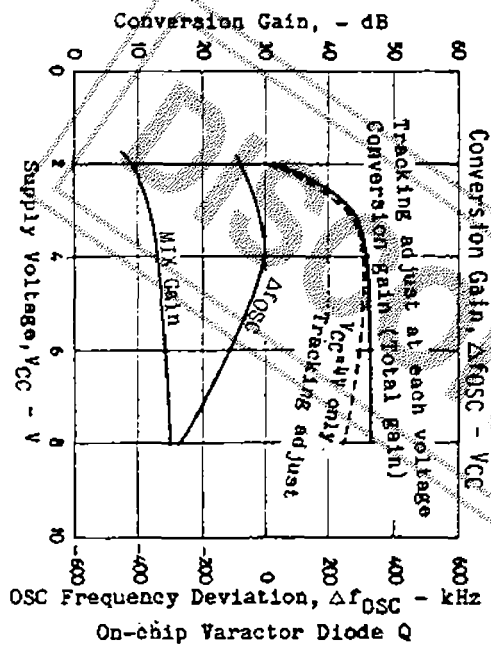
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$f_0 = 89\text{MHz}$
 $f_{OSC} = 72.3\text{MHz}$
 $V_{DD} = 4\text{V}$

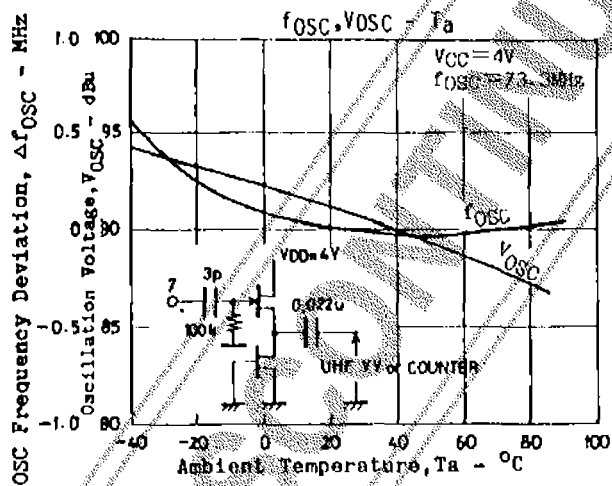
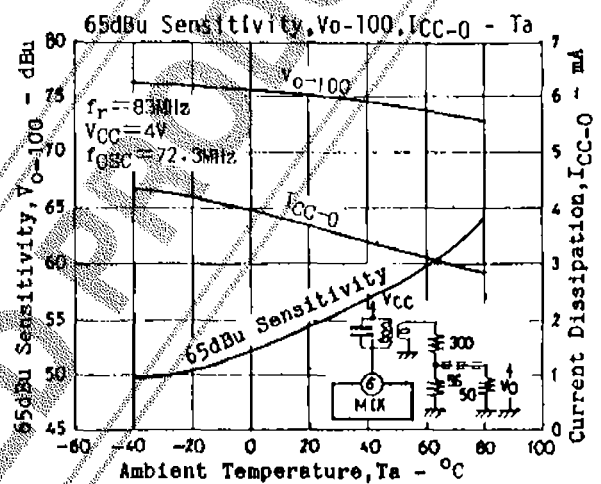
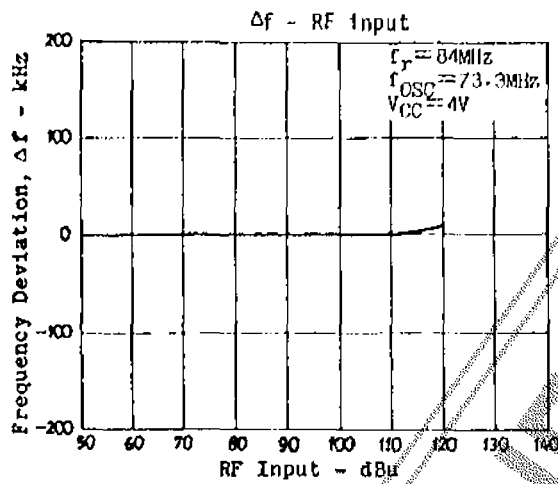
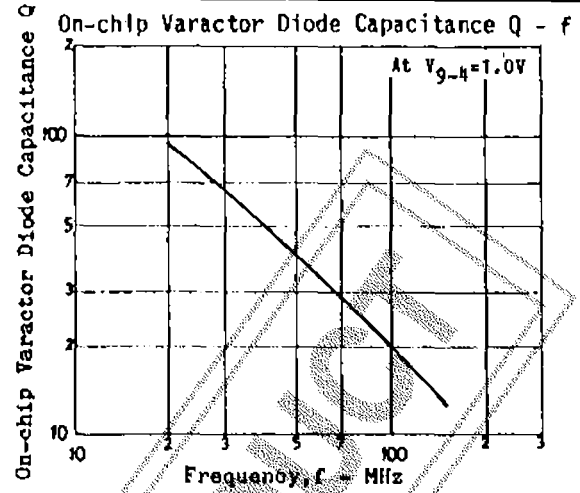
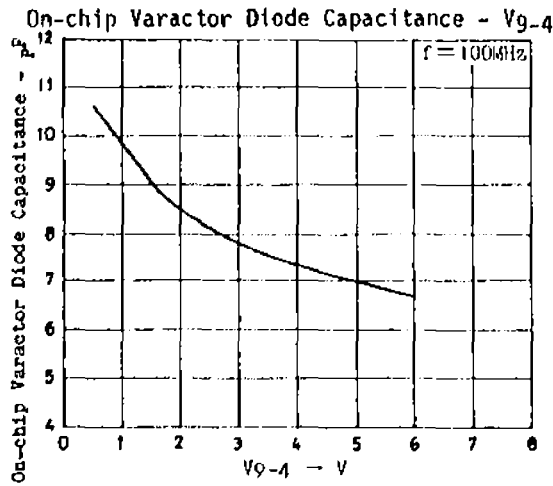


Allowable Power Dissipation,
 $P_{dmax} - \text{mW}$

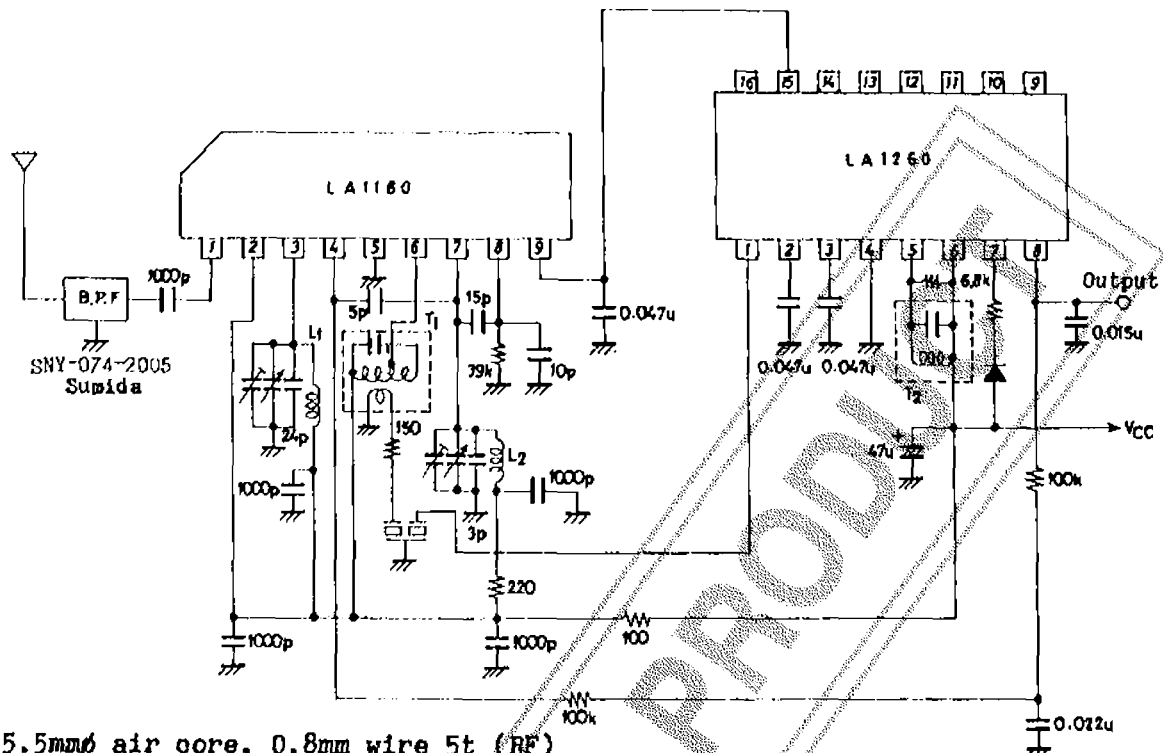
Ambient Temperature, $T_a - ^\circ\text{C}$	0	20	40	60	80	100
$P_{dmax} - \text{mW}$	120	100	80	60	40	20

Test Circuit and Equivalent Circuit Block Diagram

The diagram shows a test circuit and its equivalent circuit block diagram. The test circuit includes an AC source (75 ohms) connected to a 100pF capacitor, which is connected to the input of the I/P AMP. The output of the I/P AMP is connected to the input of the MIX. The output of the MIX is connected to the input of the OSC. The output of the OSC is connected to a 35pF capacitor, which is connected to a 50 ohm load. The equivalent circuit block diagram shows the I/P AMP, MIX, and OSC blocks connected in series. The input of the I/P AMP is connected to a 100pF capacitor. The output of the I/P AMP is connected to the input of the MIX. The output of the MIX is connected to the input of the OSC. The output of the OSC is connected to a 35pF capacitor, which is connected to a 50 ohm load.



Sample Application Circuit: LA1180 + LA1260 FM Section (Japan Band)



L1: 5.5mm ϕ air core, 0.8mm wire 5t (RF)

L2: 5.5mm ϕ air core, 0.8mm wire 6t (OSC)

T1: Mitsumi YT-30070

T2: Mitsumi YT-30194

Polystyrene film variable capacitor: FVC-22KTL

ANT B.P.F: Sumida SNY-074-2005

