

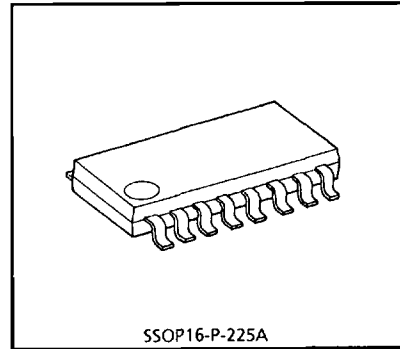
# COMPANDER ICs, FRONT END ICs AND DRIVER ICs

TENTATIVE DATA

## FRONT END IC FOR PAGER

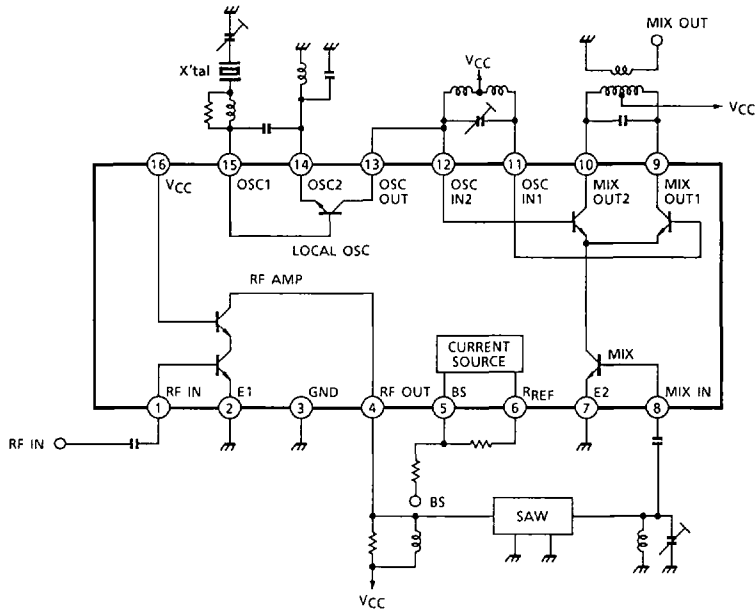
### FEATURES

- Built-in RF AMP, 1<sup>st</sup> MIX and local oscillator circuit
- Built-in battery-saving function
- Operating input frequency : 100~300MHz
- Operating supply voltage : 1.1~5.5V
- Low current consumption :  $I_{CCQ} = 2.5\text{mA}$  (Typ.)



Weight : 0.2g (Typ.)

### BLOCK DIAGRAM



TA31122F-1

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# COMPANDER ICs, FRONT END ICs AND DRIVER ICs

## PIN FUNCTION

PIN No.	PIN NAME	FUNCTION	INTERNAL EQUIVALENT CIRCUIT				
1	RF IN	Input terminal for RF signal					
2	E1	Terminal for emitter of internal transistor. This terminal connects with GND.					
3	GND	Terminal of GND.					
4	RF OUT	Output terminal for RF signal.					
5	BS	Control terminal for battery-saving. <table border="1" style="margin: 10px auto;"> <tr> <td>GND</td> <td>Normal operating</td> </tr> <tr> <td>OPEN</td> <td>Battery-saving ON</td> </tr> </table>	GND	Normal operating	OPEN	Battery-saving ON	
GND	Normal operating						
OPEN	Battery-saving ON						
6	RREF	The terminal determines reference current. Reference current determines by external resistance.					
7	E2	Terminal for emitter of internal transistor. This terminal connects with GND.					
8	MIX IN	Input terminal for MIX.					
9	MIX OUT1	Output terminal for MIX.					
10	MIX OUT2						
11	OSC IN1	Input terminal for local oscillator.					
12	OSC IN2						
13	OSC OUT	Output terminal for local oscillator.					
14	OSC2	Oscillation terminal for local oscillator.					
15	OSC1						
16	VCC	Terminal of power supply.					



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# COMPANDER ICs, FRONT END ICs AND DRIVER ICs

MAXIMUM RATING (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	6	V
Power Dissipation	P <sub>D</sub>	370	mW
Operating Temperature	T <sub>opr</sub>	-30~85	°C
Storage Temperature	T <sub>stg</sub>	-55~150	°C

## ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, Ta = 25°C, V<sub>CC</sub> = 1.4V, f<sub>in</sub> = 281.987MHz, Δf = ±4kHz, f<sub>mod</sub> = 600Hz)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current Consumption	I <sub>ccq</sub>	—	—	1.8	2.5	3.0	mA
Current Consumption (at Battery-Saving)	I <sub>cco</sub>	—	BS = H	—	0	10	μA
RF AMP. Gain	G <sub>V-R</sub>	—	—	—	21	—	dB
MIX Conversion Gain	G <sub>V-M</sub>	—	—	—	24	—	dB

## REFERENCE VALUE

Input/output capacitance, input/output resistance (Typ.)

PIN No.	PIN NAME	CAPACITANCE (pF)	RESISTANCE (Ω)
1	RF IN	4.5	840
4	RF OUT	2.5	—
8	MIX IN	4.9	780
9	MIX OUT1	2.6	—
11	OSC IN1	1.6	1.6k
13	OSC OUT	2.5	—

Current value of each amp. (Typ.)

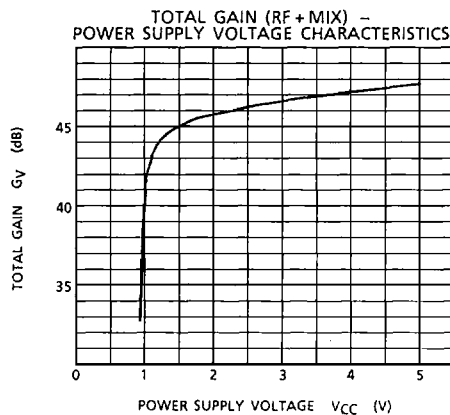
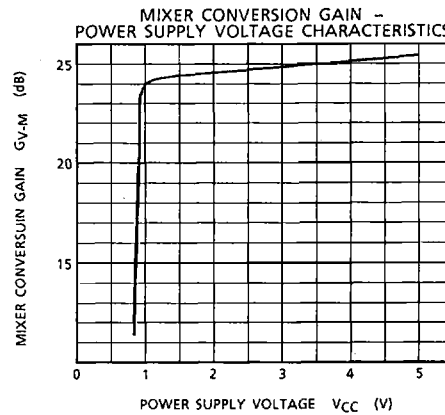
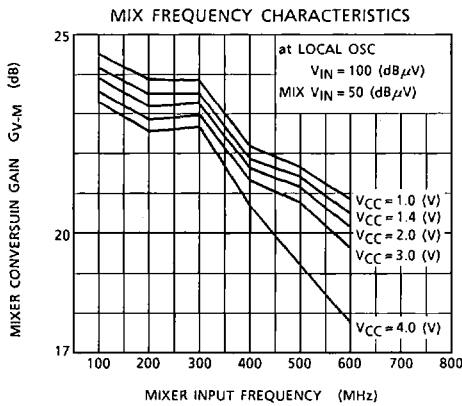
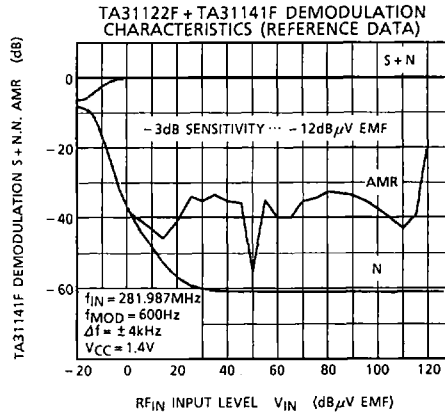
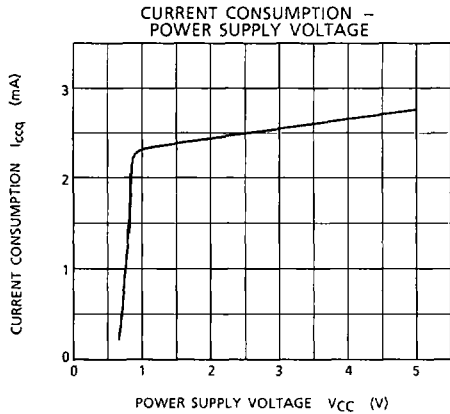
CHARACTERISTIC	CURRENT VALUE
RF CURRENT	720μA (Typ.)
MIXER CURRENT	600μA (Typ.)
LOCAL CURRENT	720μA (Typ.)

Direct voltage of terminals (Typ.) V<sub>CC</sub> = 1.4V

PIN No.	PIN NAME	VOLTAGE (V)	PIN No.	PIN NAME	VOLTAGE (V)
1	RF IN	0.7	9	MIX OUT1	V <sub>CC</sub>
2	E1	GND	10	MIX OUT2	V <sub>CC</sub>
3	GND	GND	11	OSC IN1	V <sub>CC</sub>
4	RF OUT	V <sub>CC</sub>	12	OSC IN2	V <sub>CC</sub>
5	BS	—	13	OSC OUT	V <sub>CC</sub>
6	R <sub>REF</sub>	—	14	OSC2	GND
7	E2	GND	15	OSC1	0.7
8	MIX IN	0.7	16	V <sub>CC</sub>	V <sub>CC</sub>

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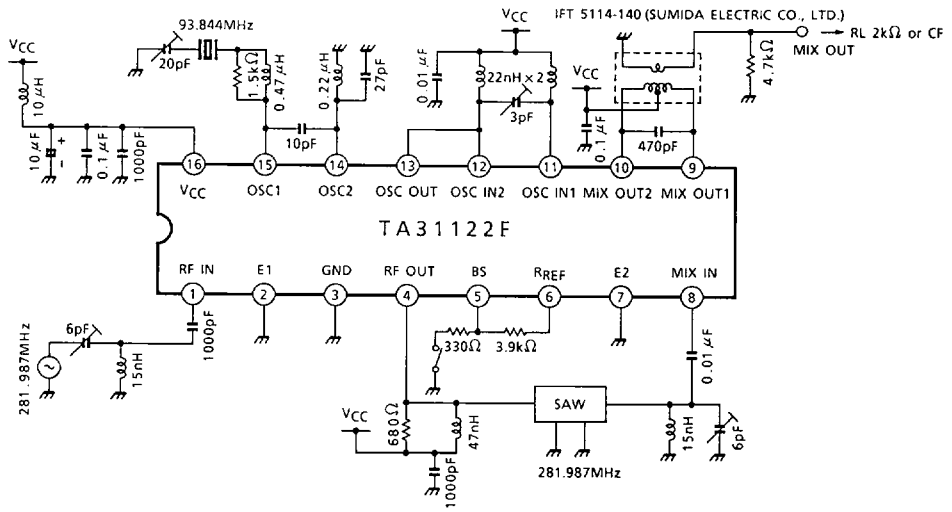
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# COMPANDER ICs, FRONT END ICs AND DRIVER ICs

## APPLICATION CIRCUIT



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