

**Description**

The CXA1474M/N is an ultra low current consumption FM IF amplifier, employed the latest bipolar process. It is suitable for radio communication system requested low current consumption and compact sets.

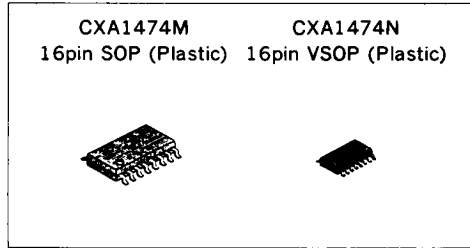
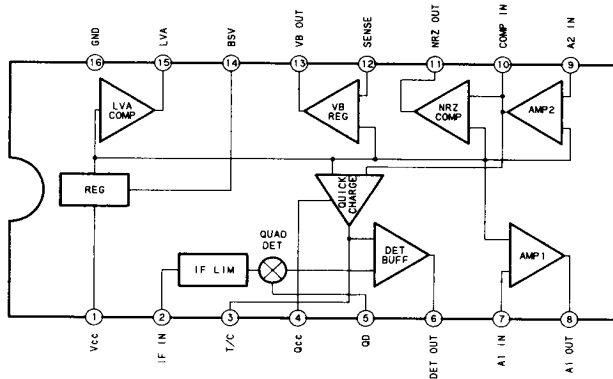
**Features**

- Ultra low current consumption 500 $\mu$ A ( $V_{CC}=1.5V$  Typ.)
- Low voltage operation  $V_{CC}=1.0$  to 4.0V
- Fewer external parts
- Built-in reference power supply for operational amplifier and comparator
- Ultra small package 16pin VSOP

**Functions**

- 2nd IF, LIM
- FM detector
- 2 operational amplifiers for 4 length LPF
- FSK comparator (invertible)
- Regular OUT for RF, 1st MIX
- Power saving function
- Low voltage alarm

**Block Diagram**



**Applications**

- Single super pager (Japan)
- Low power double super pager (Overseas)

**Absolute Maximum Ratings (Ta=25°C)**

- Supply voltage  $V_{CC}$  12 V
- Operating temperature  $T_{OPR}$  -20 to +75 °C
- Storage temperature  $T_{STG}$  -65 to +150 °C

**Operating Condition**

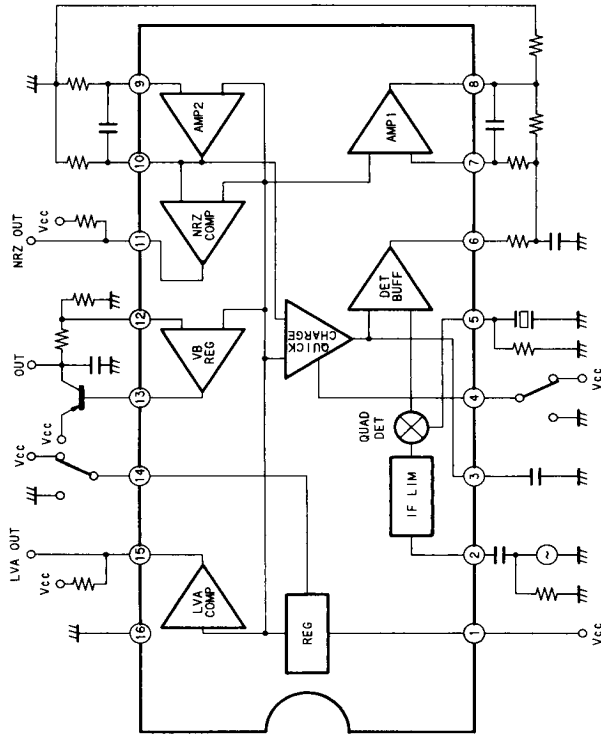
- Supply voltage  $V_{CC}$  1.0 to 4.0 V

**Electrical Characteristics** ( $V_{CC}=1.5V$ ,  $T_a=25^{\circ}C$ ,  $f_s=455kHz$ ,  $f_{MOD}=256Hz$ ,  $f_{DIV}=2.3kHz$ ,  $AM_{MOD}=30\%$ )

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power consumption	$I_{CC}$	OPERATION	350	500	650	$\mu A$
Power consumption	$I_{CCS}$	POWER SAVE			20	$\mu A$
Input limiting	$V_{IN}$			7		$dB\mu$
AM rejection ratio	AMRR	$V_{IN}=60dB\mu$	25			dB
Input bias current	$I_{BIAS}$			30	100	$\mu A$
OP amp open loop gain	$A_V$		45	60		dB
OP amp output voltage amplitude	$V_O$		0.25			V <sub>p-p</sub>
Comparator hysteresis width	$V_{TW}$			20		mV
NRZ output leak current	$I_{LNRZ}$				5.0	$\mu A$
NRZ saturation voltage	$V_{SATNRZ}$				0.4	V
VB output current	$I_{OUT}$		10			mA
VB output voltage	$V_{BOUT}$		0.9			V
Sense voltage	$V_{SEN}$		180	200	220	mV
LVA threshold voltage	$V_{PML}$		1.05	1.10	1.15	V
LVA hysteresis width	$V_{PMTH}$		40	50	70	mV
LVA output leak current	$I_{LLVA}$				5.0	$\mu A$
LVA saturation voltage	$V_{SATLVA}$				0.4	V
Recovered signal voltage	$V_{DET}$		15	20	25	mV <sub>rms</sub>
BSV high level	$V_{THBSV}$		0.95			V
BSV low level	$V_{TLBSV}$				0.35	V

**Design Reference Values**

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
IF input resistance	$R_{IN(IF)}$		1.6	2.0	2.4	k $\Omega$
IF gain stability	GS (IF)	$T_a=-20$ to $60^{\circ}C$	-6		+6	dB
Detector output resistance	$R_{OUT(QD)}$			-	200	$\Omega$
OP amp MAX input voltage	$V_{IN MAX}$		0.39			V
OP amp MIN input voltage	$V_{IN MIN}$				0.05	V
Comparator MAX input voltage	$V_{IN MAXCOMP}$		0.39			V
Comparator MIN input voltage	$V_{IN MINCOMP}$				0.05	V
OP amp offset voltage	$V_{OFS}$				3	mV

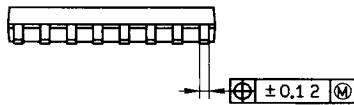
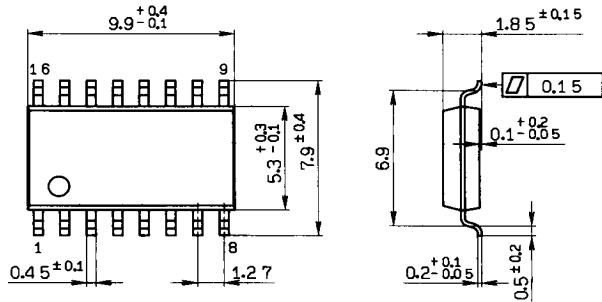


Test Circuit

Package Outline Unit : mm

CXA1474M

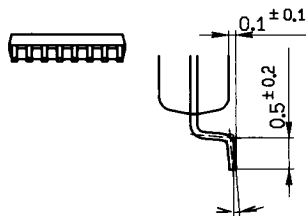
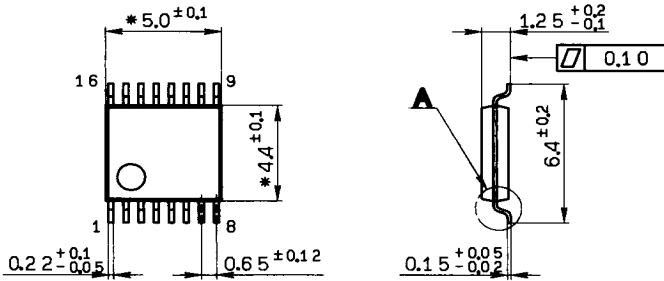
16pin SOP (Plastic) 300mil 0.2g



SONY NAME	SOP-16P-L01
EIAJ NAME	*SOP016-P-0300-A
JEDEC CODE	_____

CXA1474N

16pin VSOP (Plastic) 225mil



SONY NAME	VSOP-16P-L01
EIAJ NAME	SSOP016-P-0225-*
JEDEC CODE	_____

\*(Similar)

Detailed diagram of A

Dimensions marked with \* do not include resin residue.