BA4114

FM-IF detector

The BA4114 IC is a narrow band FM-IF detection IC that is designed to be used in FM double superheterodyne receivers.

Features

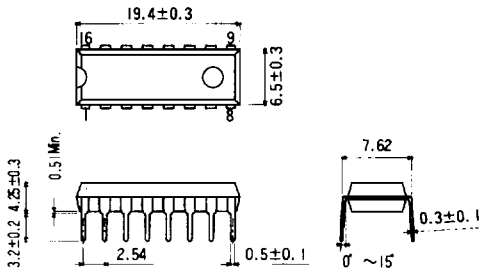
- available in a DIP16 package
- low power supply voltage (1.8 ~ 7.0 V)
- low power consumption (typically 3.5 mA)
- high sensitivity, typically V_{IN} = 6.0 dBμV
- stable operation under variable voltage and temperature conditions
- built-in squelch scan control

Applications

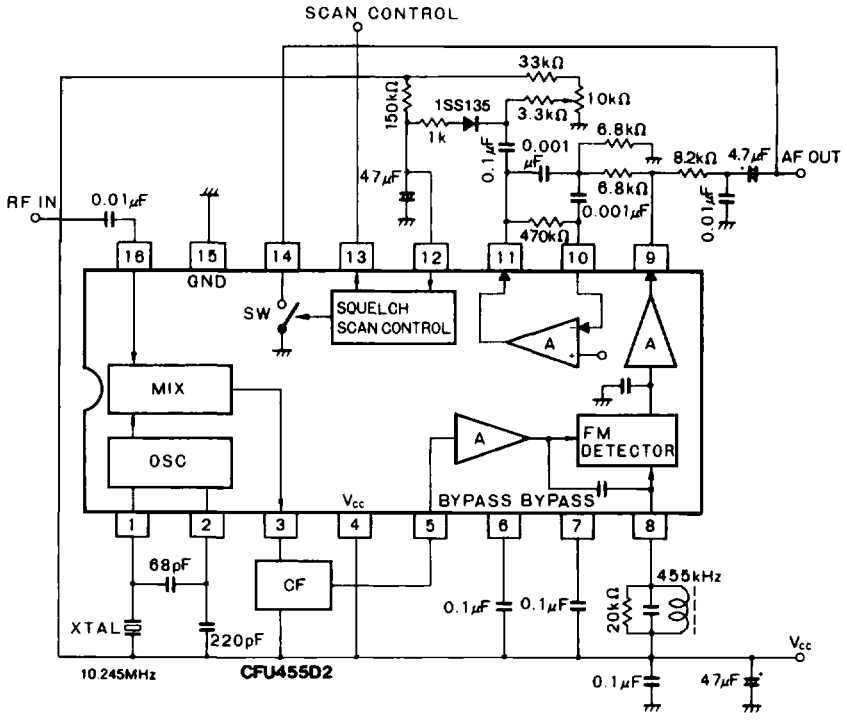
- VHF-band FM transceivers
- cordless telephones
- radio-controlled devices
- personal radio
- MCA

Dimensions (Units : mm)

BA4114 (DIP16)



Block diagram and external circuit



Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Limits	Unit	Conditions
Power supply voltage	V_{CC}	8.0	V	
Power dissipation	P_d	550	mW	Reduce power by 5.5 mW/°C for each degree above 25°C.
Operating temperature	T_{opr}	−25 ~ +75	°C	
Storage temperature	T_{stg}	−55 ~ +125	°C	

Recommended operating conditions (T_a = 25°C)

Parameter	Symbol	Min	Typical	Max	Unit
Power supply voltage	V_{CC}	1.8		7	V
Mixer input frequency	f_{in}			60	MHz

Electrical characteristics (unless otherwise noted, T_a = 25°C, V_{CC} = 4 V, f_{IN} = 10.7 MHz, $\Delta f = \pm 3$ kHz, f_m = 1 kHz)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Quiescent current	I_Q		3.5	7.0	mA	Squelch off
20 dB signal/noise sensitivity	20 dB S/N	15	20	25	dBμV	
AF output voltage	V_{ODC}	100	150	250	mV	
Mixer conversion gain	$G_{V(fil)}$		28		dB	
Filter amplifier gain	G_V	40	49		dB	V_{IN} = 0.3 MHz