

NTE860 Integrated Circuit Low-Power, Narrow-Band FM IF

Description:

The NTE860 is an integrated circuit in an 18-Lead DIP type package which includes an oscillator, mixer, limiting amp, AFC, quadrature discriminator, op/amp, squelch, scan control and mute switch.

Absolute Maximum Ratings: ($T_A = +25^{\circ}\text{C}$, unless otherwise specified)

Power Supply Voltage, $V_{CC}(\text{max})$ 12V
 Operating Supply Voltage Range, V_{CC} 4V to 9V
 Input Voltage ($V_{CC} \geq 6.0$ Volts), V_{18} $1.0V_{\text{rms}}$
 Mute Function, V_{16} -0.7 to $12V_{\text{pk}}$
 Operating Junction Temperature, T_J $+150^{\circ}\text{C}$
 Operating Ambient Temperature Range, T_A -30° to $+70^{\circ}\text{C}$
 Storage Temperature Range, T_{stg} -65° to $+150^{\circ}\text{C}$

Electrical Characteristics: ($V_{CC} = 6\text{V}$, $f_0 = 10.7\text{MHz}$, $\Delta f = \pm 3.0\text{kHz}$, $f_{\text{mod}} = 1.0\text{kHz}$, 50Ω source, $T_A = +25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Test Conditions	Min	Typ	Max	Unit
Drain Current (Pin4 & Pin8)	Squelch OFF	—	3.6	6.0	mA
	Squelch ON	—	5.4	7.0	mA
Input for 20dB Quieting		—	8.0	—	μA_{rms}
Input for -3dB Limiting		—	2.0	—	μA_{rms}
Mixer Voltage Gain	Pin18 to Pin3, Open	—	46	—	
Mixer Third Order Intercept	50Ω Input	—	-1.0	—	dBm
Mixer Input Capacitance		—	2.2	—	pF
Recovered Audio, Pin10	Input Signal $1.0\text{mV}_{\text{rms}}$	450	700	—	mV_{rms}
Detector Center Frequency Slope, Pin10		—	0.3	—	V/kHz
AFC Center Slope, Pin11	Unloaded	—	12	—	V/kHz
Filter Gain		40	51	—	dB
Squelch Threshold	Through 10K to Pin14	—	0.01	1.0	μA
Scan Control Current, Pin15	Pin14 High	—	0.01	1.0	μA
	Pin14 Low	2.0	2.4	—	mA
Mute Switch Impedance	Pin14 High	—	5.0	—	$\text{M}\Omega$
	Pin14 Low	—	1.5	—	$\text{M}\Omega$

Pin Connection Diagram

Crystal OSC	1	18	RF Input
Crystal OSC	2	17	GND
Mixer Output	3	16	Audio Mute
V _{CC}	4	15	Scan Control
Limiter Input	5	14	Squelch Input
Decoupling	6	13	Filter Output
Decoupling	7	12	Filter Input
Quadrature Input	8	11	Demodulator Output
Demodulator Filter	9	10	Recovered Audio

