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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°C
Operating Ambient Temperature Range, T_A	-30° to +70°C
Storage Temperature Range, T_{stg}	-65° to +150°C

Electrical Characteristics: ($V_{CC} = 6V$, $f_o = 10.7\text{MHz}$, $\Delta f = \pm 3.0\text{kHz}$, $f_{\text{mod}} = 1.0\text{kHz}$, 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

