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## NTE1527 Integrated Circuit FM, IF Amp/AFC & Meter Driver

### Function:

- FM Section:  
IF Amp., Det., Driver for Tuning Meter
- AM Section:  
Conv., IF Amp

### Features:

#### FM

- Incorporates a Full-Balance Differential Circuit to Obtain Stable, High Gain in the IF Amplifying Stage
- Incorporates a Low-Distortion, Quadrature Detection Circuit (0.3% distortion at 100% modulation).
- The Tuning Meter's Driver Voltage is Logarithmic to Input

#### AM

- A High-Gain IF Amplifying Stage, with Input Level Allowable up to 100dB $\mu$ .
- The Frequency Converting Stage Consists of a Single Transistor, while the Base, Emitter, and Collector are Provided with Pins to Ensure Handling Ease.

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

Supply Voltage (Note 1), $V_{CC}$ .....	8V
Power Dissipation, $P_T$ .....	420mW
Operating Temperature Range, $T_{opr}$ .....	-20° to +70°C
Storage Temperature Range, $T_{stg}$ .....	-55° to +125°C

Note 1. Standard Operating Voltage = 5.5V

### Electrical Characteristics: ( $T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
FM Limiting Sensitivity	$V_{in(lim)}$	-3dB point	-	30	-	dB $\mu$
Recovered AF Voltage	$V_O$	106dB $\mu$ , 10.7MHz	-	430	-	mV
Total Harmonic Distortion	THD	Mod. = 400Hz and 100%	-	0.3	-	%
Signal-to-Noise Ratio	S/N		-	76	-	dB
AM Rejection Ratio	AMR	FM = 100%, 400Hz, FM 106dB $\mu$ , AM = 30%, 1kHz mod.	-	55	-	dB

**Electrical Characteristics (Cont'd):** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Signal Meter Output	$V_M$	106dB $\mu$	-	1.6	-	V
Detector Output Voltage	$V_O-V_R$	106dB $\mu$ , at $\pm 100\text{kHz}$ detuning	-	310	-	mV
DC Offset	$\Delta(V_O-V_R)$	$(V_O-V_R)$ at 0dB $\mu$	-	-90	-	mV
AM IF Sensitivity	$S_{IF}$	Input Level at Output = 10mV (Mod. = 400Hz and 30%)	-	32	-	dB $\mu$
Recovered AF Voltage	$V_O$	Input = 74dB $\mu$	-	120	-	mV
Total Harmonic Distortion	THD	Mod. = 400Hz and 30%	-	0.3	-	%
Signal-to-Noise Ratio	S/N		-	60	-	dB
AGC Figure of Merit	AGC	Between 100dB $\mu$ and it's -10dB Input Level at	-	55	-	dB
Usually Sensitivity	$S_{IF}$	S/N = 20dB	-	45	-	dB/m

Note 2. FM Input Level; voltage level when SG output is terminated with SG's  $R_g$ .

Note 3. AM Input Level; voltage level when SG output is open.

**Pin Connection Diagram**

1 <sup>st</sup> AM IF Input	17	
FM IF Input	1	16 AM Converter Output
Bypass	2	15 AM OSC
Bypass	3	14 AM Converter Input
Decoupling	4	13 Bypass
GND	5	12 2 <sup>nd</sup> AM IF Output
FM Output	6	11 AGC Bias
Detector	7	10 V <sub>CC</sub>
Phase Compensation	8	9 Signal Meter Output
GND	18	

