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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 100dBμ.
- 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°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°C unless otherwise specified)

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

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Signal Meter Output	V_M	106dBμ	–	1.6	–	V
Detector Output Voltage	V_O–V_R	106dBμ, at ±100kHz detuning	–	310	–	mV
DC Offset	$\Delta(V_O–V_R)$	$(V_O–V_R)$ at 0dBμ	–	–90	–	mV
AM IF Sensitivity	S_{IF}	Input Level at Output = 10mV (Mod. = 400Hz and 30%)	–	32	–	dBμ
Recovered AF Voltage	V_O	Input = 74dBμ	–	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 100dBμ and it's –10dB Input Level at S/N = 20dB	–	55	–	dB
Usually Sensitivity	S_{IF}		–	45	–	dB/m

Note 2. FM Input Level; voltage level when SG output is terminated with SG's Rg.
Note 3. AM Input Level; voltage level when SG output is open.

Pin Connection Diagram