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NTE723 Integrated Circuit FM Sound System

Description:

The NTE723 is a monolithic integrated circuit FM detector/limiter and audio preamplifier that requires a minimum of external components for operation. It includes three stages of IF limiting and a differential-peak-detection circuit.

Features:

- Simple detector alignment: one coil
- Sensitivity: 3dB limiting voltage 250µV typical at 10.7MHz
- Low harmonic distortion
- Excellent AM rejection 55dB typ. at 10.7MHz
- Internal audio preamplifier

Absolute Maximum Ratings:

Power Supply Current (Pin5)	30mA
Supply Voltage (Pin5)	12.5V
Power Dissipation (Note 1), P _D	715mW
Operating Temperature Range, T _{opr}	-40° to +85°C
Storage Temperature Range, T _{stg}	-65° to +150°C
Lead Temperature (During Soldering , 10sec), T _L	+300°C

Note 1. For operation in ambient temperatures above 25°C, the device must be derated based on a 150°C maximum junction temperature and a thermal resistance of 175°C/W junction to ambient.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Supply Current	I ₅	V _{CC} = 8.5V	8.5	15	-	mA
		V _{CC} = 11.2V	-	17.5	-	mA
		V _{CC} = 12.5V	-	19	29	mA
Detector Output Level, High	V ₇		-	6.1	-	V
Detector Output Level, Low	V ₈	V _{CC} = 11.2	-	5.4	-	V
Audio Amplifier Output	V ₁₂		-	5.2	-	V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics ($V_+ = 11.2\text{V}$, $f_o = 10.7\text{MHz}$, $\Delta f = \pm 75\text{kHz}$, $f_m = 400\text{Hz}$)						
Input Limiting Threshold	$V_{IN(LIM)}$		–	250	600	μV
AM Rejection	AMR	AM: 1kHz @ 30%, $V_{IN} = 100\text{mV}$	–	55	–	dB
Recovered AF Voltage (At Pin12)	$V_{O(AF)}$		–	1.5	–	V
Total Harmonic Distortion	THD		–	1	2	%
Audio Preamplifier						
Voltage Gain	$A_{V(AF)}$	$V_{IN} = 100\text{mV}$, $f = 400\text{Hz}$	–	21	–	dB
Total Harmonic Distortion	THD	$V_{OUT} = 2\text{V}$, $f = 400\text{Hz}$	–	1.5	5.0	%

Pin Connection Diagram

