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NTE1578
Integrated Circuit
FM Mixer/IF Amp

Description:

The NTE1578 is an FM front–end integrated circuit in a 16–Lead DIP type package designed for use in car radio and home stereo applications. This device has a built–in AGC driver circuit which improves interference characteristics. It thereby offers advantages such as improved interference characteristics without sacrificing usable sensitivity and the conventional DX–LOCAL change–over switch.

Features:

- Double–Balanced Type MIX (Improved Spurious Characteristic)
- Keyed AGC/Keyed Classical AGC (Improved Intermodulation, Cross Modulation Characteristic)
- Differential IF Amplification (Improved Limiting Characteristic)

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Maximum Supply Voltage (Pin12, Pin15), V_{CC1}max 8.5V
Maximum Supply Voltage (Pin5, Pin6), V_{CC2}max 16V
Allowable Power Dissipation ($T_A \le$ +50°C, Note 1), $P_D$max 600mW
Operating Temperature Range, T_{opg} . . . . . –20° to +70°C
Storage Temperature Range, T_{stg} . . . . . –40° to +125°C

Note 1. $P_D$max = 460mW at T_A = +70°C

Recommended Operation Condition: (T_A = +25°C unless otherwise specified)

Recommended Supply Voltage (Pin12, Pin15), V_{CC1} 8V
Recommended Supply Voltage (Pin5, Pin6), V_{CC2} 13V

Electrical Characteristics: (T_A = +25°C, V_{CC1} = 8V, V_{CC2} = 13V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dissipation Current	I_{CC1}	Pin 12, 15	17	25	36	mA
	I_{CC2}	Pin 5, 6	5	8	11	mA
Local OSC Input Offset	ΔV_{INOSC}		–20	0	20	mV
MIX Input Offset	ΔV_{INMIX}		–20	0	20	mV
MIX Output Offset	$\Delta I_{OUT\ MIX}$		–600	0	600	μA
High Level AGC Output	$V_{AGC\ H}$	V_i = 0dBu, V_{CL} = 4V	7.6	7.9	–	V
Low Level AGC Output	$V_{AGC\ L}$	V_i = 100dB, V_{CL} = 4V	–	0.5	1	V

Electrical Characteristics (Cont'd): (T_A = +25°C, V_{CC1} = 8V, V_{CC2} = 13V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
AGC Control Input	$V_{CL\ 7}$	V_i = 100dBu, V_{AGC} = 7V	–	0.35	0.6	V
	$V_{CL\ 2}$	V_i = 100dBu, V_{AGC} = 2V	1.2	1.7	2.2	V
IF Input Resistance	R_{IN}		230	330	430	ohm
Voltage Gain	VG	V_i = 62dBu	80	85	90	dBµ
Input Limiting Voltage	$V_{i\ lim}$	V_{AGC} = 2V	62	71	80	dBµ
AGC Input Voltage	$V_{i\ AGC}$	V_{AGC} = 2V	62	71	80	dBµ
Saturation Output Voltage	V_{OUT}	V_i = 100dBµ	91	95	–	dBµ

Pin Connection Diagram