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RoHS
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NTE7203
Integrated Circuit
60W Hi–Fi Audio Power Amplifier with Mute/Stand–By

Description:

The NTE7203 is a monolithic integrated circuit in a 7–Lead Staggered SIP type package designed for use as an audio class AB amplifier in TV or Hi–Fi applications. Thanks to the wide voltage range and high out current capability, the NTE7203 is able to supply the highest power into both 4Ω and 8Ω loads even in the presence of poor supply regulation.

Features:

- Supply Voltage Range up to ±25V
- Split Supply Operation
- High Output Power (up to 60W Music Power)
- Low Distortion
- Mute/Stand–By Function
- No Switch ON/OFF Noise
- AC Short Circuit Protection
- Thermal Shutdown
- ESD Protection

Absolute Maximum Ratings:

DC Supply Voltage, V_S . . . . . ±25V
Output Peak Current (Internally Limited), I_O 6A
Power Dissipation (T_C = +70°C), P_{tot} 30W
Junction Temperature Range, T_J . . . . . –40° to +150°C
Operating Temperature Range, T_{opr} . . . . . 0° to +70°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 2.5°C/W

Electrical Characteristics: (G_V = 32dB, V_S = ±18V, f = 1kHz, T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Range	V_S		±6	–	±25	V
Total Quiescent Current	I_q	V_S = ±22V	20	40	70	mA
Input Bias Current	I_b	V_S = ±22V	–	–	±0.5	μA
Input Offset Voltage	V_{OS}	V_S = ±22V	–	–	±15	mV
Input Offset Current	I_{OS}	V_S = ±22V	–	–	±200	nA

Electrical Characteristics (Cont'd): (G_V = 32dB, V_S = ±18V, f = 1kHz, T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Music Output Power (Note 1)	P_O	V_S = ±22.5V, R_L = 4Ω, d = 10%, t = 1s		50	60	–	W
Output Power (Continuous RMS)	P_O	d = 10%	R_L = 4Ω	35	40	–	W
			R_L = 8Ω	–	22	–	W
			V_S = ±22.5V, R_L = 8Ω	30	33	–	W
		d = 1%	R_L = 4Ω	–	32	–	W
			R_L = 8Ω	–	17	–	W
			V_S = ±22.5V, R_L = 8Ω	–	28	–	W
Total Harmonic Distortion	d	P_O = 0.1 to 20W, f = 100Hz to 15kHz	R_L = 4Ω	–	0.1	0.7	%
			V_S = ±22V, R_L = 8Ω	–	0.1	0.5	%
Slew Rate	SR			3	5	–	V/μs
Open Loop Voltage Gain	G_V			–	80	–	dB
Total Input Noise	e_N	A Curve		–	2	–	μV
		f = 20Hz to 20kHz		–	3	10	μV
Input Resistance	R_i			500	–	–	kΩ
Supply Voltage Rejection	SVR	f = 100Hz, V_{ripple} = $1V_{RMS}$		40	50	–	dB
Thermal Shutdown	T_S			–	145	–	°C
Mute/Stand-By Function (Ref. $-V_S$)							
Stand-By - Threshold	VT_{ST-BY}			1.0	1.8	–	V
Play Threshold	VT_{PLAY}			–	2.7	4.0	V
Quiescent Current at Stand-By	$I_{q\ ST-BY}$	V_{Pin3} = 0.5V		–	1	3	mA
Stand-By Attenuation	$ATT_{ST}BY$			70	90	–	dB
Pin3 Current at Stand-By	I_{Pin3}			–	–1	±10	μA

Note 1. Music Power is (according to the IEC clauses n.268-3 of Jan '83) the maximal power which the amplifier is capable of producing across the rated load resistance (regardless of non-linearity) 1 sec after the application of a sinusoidal input signal of frequency 1kHz.

According to this definition our method of measurement comprises the following steps:

1. Set the voltage supply at the maximum operating value -10%.
2. Apply a input signal in he form of a 1kHz tone burst of 1 sec duration; the repetition period of the signal pulses is > 60 sec.
3. The output voltage is measured 1 sec from the start of the pulse.
4. Increase the input voltage until the output signal show a THD = 10%.
5. The music power is then $V^2_{out}/R1$, where V_{out} is the output voltage measured in the condition of Step 4 an R1 is the rated load impedance.

The target of this method is to avoid excessive dissipation in the amplifier.

Pin Connection Diagram
(Front View)