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NTE7059
Integrated Circuit
Dual BTL 14W Audio Power Amplifier

Description:

The NTE7059 is an integrated circuit in a 16–Lead Staggered SIP type package designed for a 14W (13.2V, 4Ω) output power amplifier. Stereo operation is enabled due to incorporating two BTL amplifiers. High reliability is obtained due to incorporating protectors. ON/OFF is enabled even if power is supplied to the power supply pin by applying stand–by circuit.

Features:

- High Output Power: 14W x 2
- Incorporates Protection Circuits:
  Temperature, Overvoltage, V_{OUT}–GND Short, R_L Short, V_{OUT}–V_{CC} Short
- Low Shock Noise from Power ON/OFF Operation
- Fewer External Components
- High Stable Operation

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

Supply Voltage (No Signal), V_{CC} 24V
Peak Supply Voltage (Time = 0.2s), $V_{CC(surge)}$ 50V
Supply Current, I_{CC} 6A
Power Dissipation (R_{thJC} = 2°C/W), P_D 62.5W
Operating Ambient Temperature Range, T_{opr} . . . . . –30° to +75°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C

Electrical Characteristics: (V_{CC} = 13.2V, R_L = 4Ω, f = 1kHz, T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	I_{CQ}	V_{in} = 0mV	–	120	200	mA
Output Noise Voltage	V_{no}	V_{in} = 0mV, R_g = 10kΩ, Note 1	–	0.6	1.5	mV
Voltage Gain	G_V	V_{in} = 5mV	50.0	52.5	54.5	dB
Total Harmonic Distortion	THD	V_{in} = 5mV	–	0.20	0.75	%
Maximum Output Power (4Ω)	P_O	THD = 10%	9.0	12.5	–	W

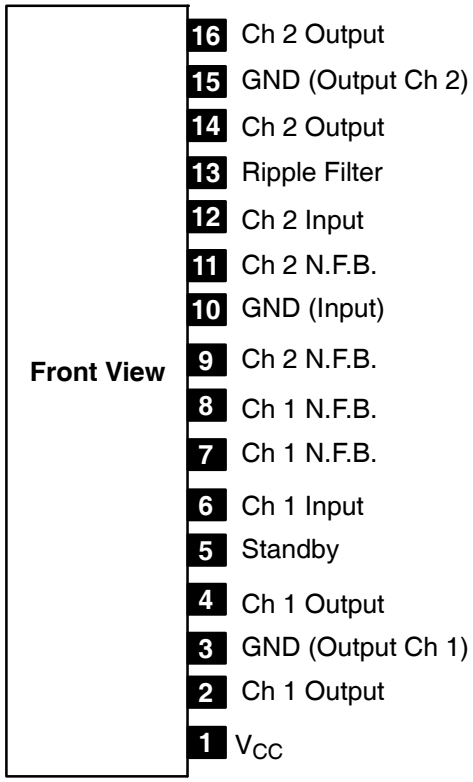
Note 1. 15Hz to 30kHz (12dB/oct) With Filter

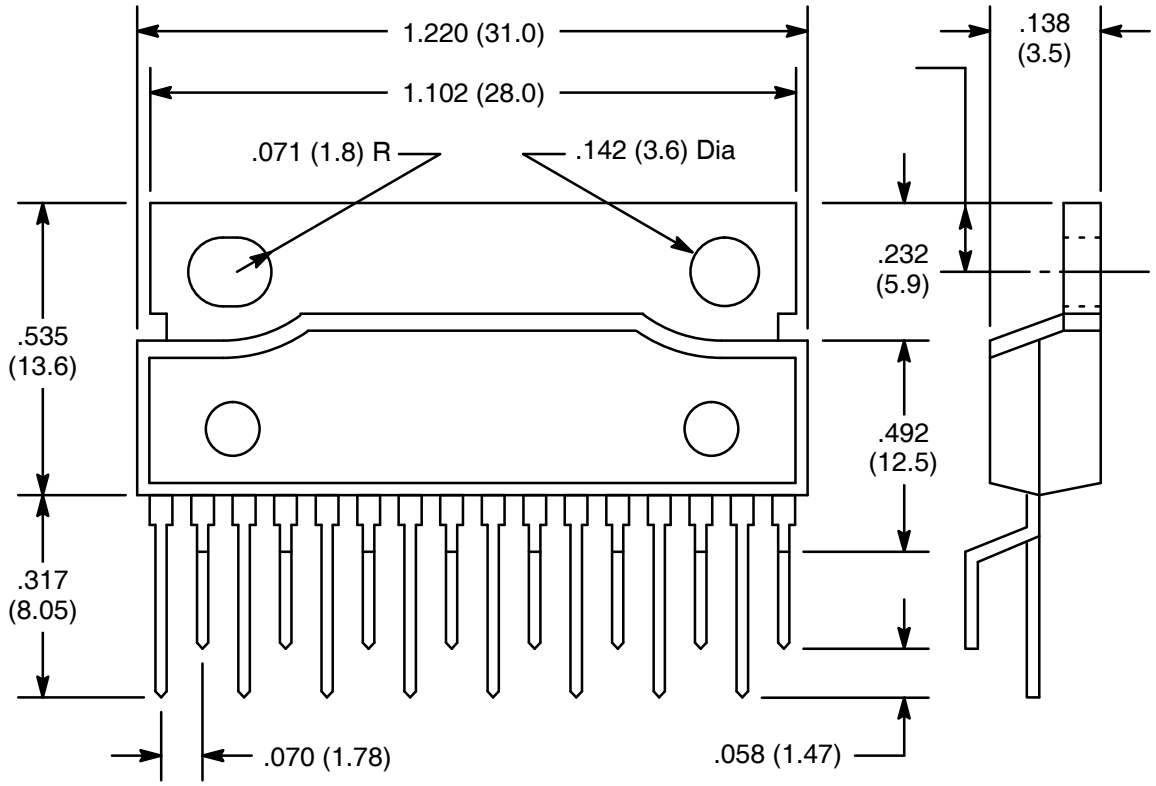
Electrical Characteristics (Cont'd): (V_{CC} = 13.2V, R_L = 4Ω, f = 1kHz, T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Ripple Rejection Ratio	RR	R_g = 0Ω, V_{in} = 0mV, Ripple = 300mV, 120Hz, Note 1	35	40	–	dB
Output Offset Voltage	$V_{O(offset)}$	V_{in} = 0mV	–300	0	+300	mV
Channel Balance	CB	V_{in} = 5mV	–1	0	+1	dB
Total Harmonic Distortion	THD	V_{in} = 5mV, 100Hz	–	0.26	–	%
		V_{in} = 5mV, 10Hz	–	0.45	–	%
Frequency Characteristics	f_{CH}	V_{in} = 5mV, –3dB down	–	22	–	kHz
	f_{CL}	V_{in} = 5mV, –3dB down	–	21	–	Hz
Quiescent Circuit Current at Stand–by Pin ON	$I_{CQ(STBY–ON)}$	Stand–by Pin ON	–	21	–	μA
Crosstalk	CT	V_{in} = 5mV, R_g = 10kΩ	–	61	–	dB

Note 1. 15Hz to 30kHz (12dB/oct) With Filter

Pin Connection Diagram




1.220 (31.0)
1.102 (28.0)
.071 (1.8) R
.142 (3.6) Dia
.138
(3.5)
.232
(5.9)
.535
(13.6)
.492
(12.5)
.317
(8.05)
.070 (1.78)
.058 (1.47)