ELECTRONICS, INC.
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NTE7102
Integrated Circuit
Dual Audio Power Amplifier, 5.5W/Ch (20W BTL)

Description:

The NTE7102 is a class B dual audio power amplifier in a 14–Lead DIP type package designed for use in a music center and a radio cassette player.

Features:

- High Output Power: 20W Typ @ V_{CC} = 18V, R_L = 8Ω (BTL)
  5.5W/Ch Typ @ V_{CC} = 18V, R_L = 8Ω
  7W/Ch Typ @ V_{CC} = 15V, R_L = 4Ω
  5.7W/Ch Typ @ V_{CC} = 12V, R_L = 3Ω
  4.6W/Ch Typ @ V_{CC} = 12V, R_L = 4Ω
- Wide Operating Voltage Range: V_{CC} = 6 to 20V
- Low Quiescent Current: I_{CC} = 23mA Typ @ V_{CC} = 15V
- Low Noise: N_L = 0.25mV_{rms} Typ
- High Supply Voltage Rejection: SVR = 55dB Typ
- No Shock Noise at Power Supply Switch ON and OFF
- Soft Clipping Wave Form
- Built–In Thermal Shutdown Circuit
- Low Thermal Resistance: $R_{\Theta JC}$ = 3°C/W
- Few External Components

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

Supply Voltage,
No Signal, V_{CC1} 28V
Operating, V_{CC2} 25V
Powewr Dissipation (100 x 100 x 2mm Al Heat Sink), P_D 14W
Operating Temperature Range, T_{opr} . . . . . –20° to +70°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C

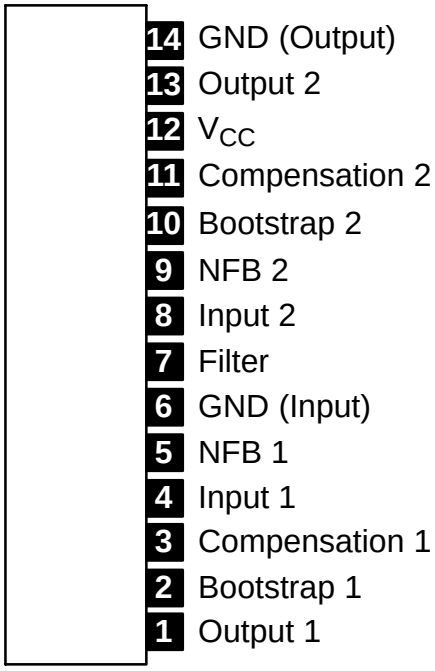
Recommended Operating Conditions: (T_A = +25°C unless otherwise specified)

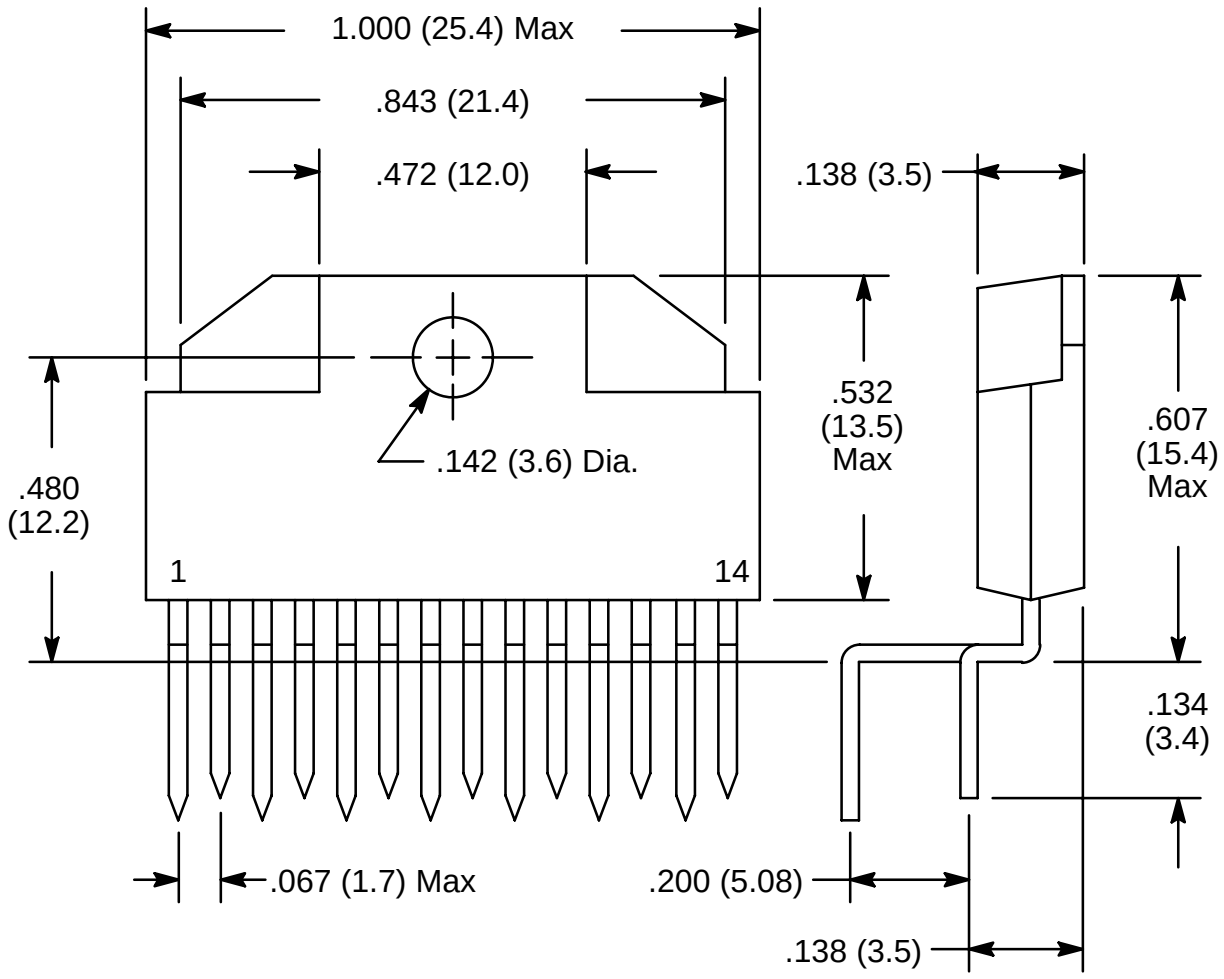
Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	V_{CC}	6.0	12.15	20.0	V
Load Impedance (Dual)	R_L	3	4	8	Ω
Load Impedance (BTL)	R_L	–	–	8	Ω
Voltage Gain	Aν	38	48	–	dB

Electrical Characteristics: (V_{CC} = 15V, R_L = 4Ω, f = 1kHz, T_A = +25°C, 100 x 100 x 2mm Al panel Heat Sink unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Circuit Current	I_{CC}	No Signal		–	23	36	mA
Voltage Gain	Av			46	48	50	dB
Output Power	P_O	THD = 10%	V_{CC} = 12V, R_L = 4Ω	–	4.6	–	W
			V_{CC} = 12V, R_L = 3Ω	–	5.7	–	W
			V_{CC} = 15V, R_L = 4Ω	6.0	7.0	–	W
			V_{CC} = 18V, R_L = 8Ω	–	5.5	–	W
		THD = 10%, BTL, V_{CC} = 18V, R_L = 4Ω		–	20	–	W
Total Harmonic Distortion	THD	P_O = 1W		–	0.2	1.0	%
Output Noise Voltage	NL	DIN AUDIO, R_G = 0		–	0.26	0.6	mV_{rms}
Crosstalk	CT	P_O = 2W, other Ch, R_G = 0		45	55	–	dB
Channel Balance	Ch. B	P_O = 4W		–1	0	+1	dB
Ripple Rejection	SVR	R_G = 0, f = 100Hz, V = 0.3mV_{rms}		45	55	–	dB
Input Impedance	Z_{in}			20	30	–	kΩ

Pin Connection Diagram
(Front View)




1.000 (25.4) Max
.843 (21.4)
.472 (12.0)
.138 (3.5)
.532
(13.5)
Max
.607
(15.4)
Max
.480
(12.2)
.142 (3.6) Dia.
1
14
.134
(3.4)
.067 (1.7) Max
.200 (5.08)
.138 (3.5)