



DESCRIPTION

PT2313L is a four-channel digital control audio processor utilizing CMOS technology. Volume, Bass, Balance, Front/Rear Fader Processor, Selectable Input Gain are incorporated into a single chip having the highest performance and reliability with the least external components. All functions are programmable using the I²C Bus. PT2313L is housed in 20-pin or 28-pin DIP/SOP package. The 28-pin version provides additional Two Band Tone Control and Loudness Function and is pin-to-pin compatible with TDA7313. Pin assignments and application circuits are optimized for easy PCB layout and cost saving advantages.

FEATURES

- CMOS Technology
- Least External Components
- Treble and Bass Control (available only in the 28-pin version)
- Loudness Function (available only in the 28-pin version)
- 3 Stereo Inputs with Selectable Input Gain
- Input/Output for External Noise Reduction System/Equalizer
- 4 Independent Speaker Controls for Fader and Balance
- Independent Mute Function
- Volume Control in 1.25 dB/step
- Low Distortion
- Low Noise and DC Stepping
- Controlled by I²C Bus Micro-Processor Interface
- Pin-to-Pin Compatible with TDA7313 (for 28-pin version)

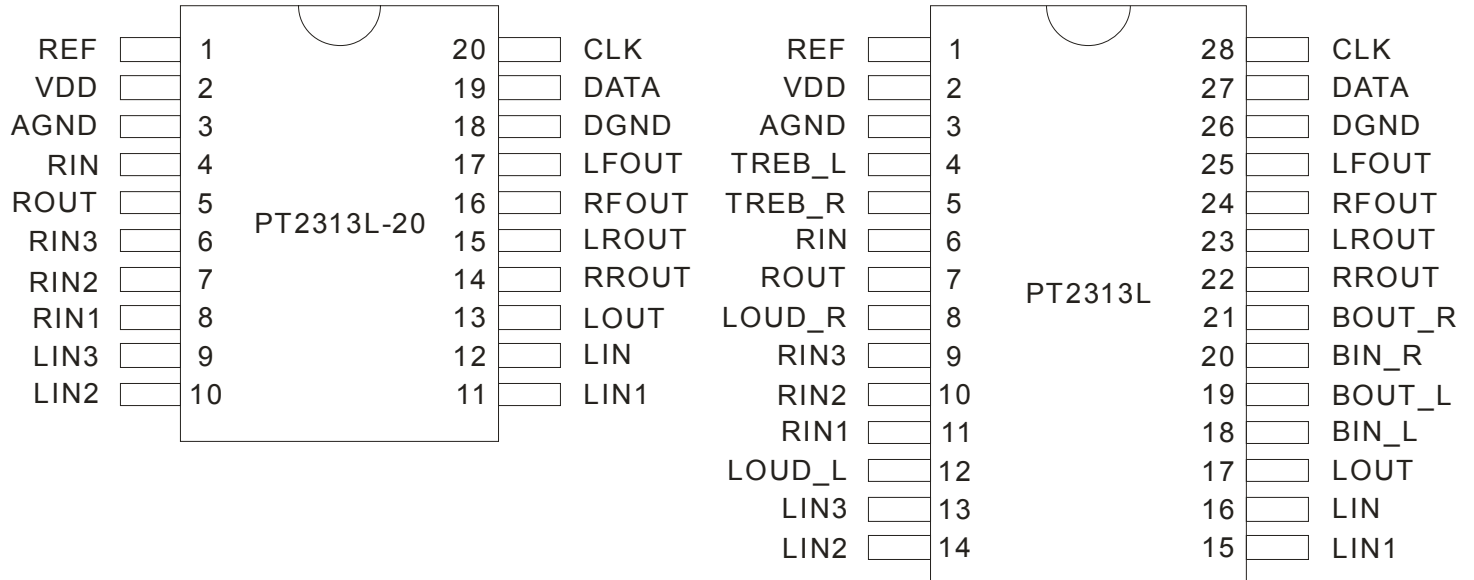
APPLICATIONS

- Car Stereo (Audio)
- Hi-Fi Audio System
- LCD Monitor

Note: Purchase of I²C Component of Princeton Technology Corporation (PTC) conveys a license under Philips I²C Patent. Right to use these components in any I²C System, provided that the system conforms to the I²C Standard Specification defined by Philips.

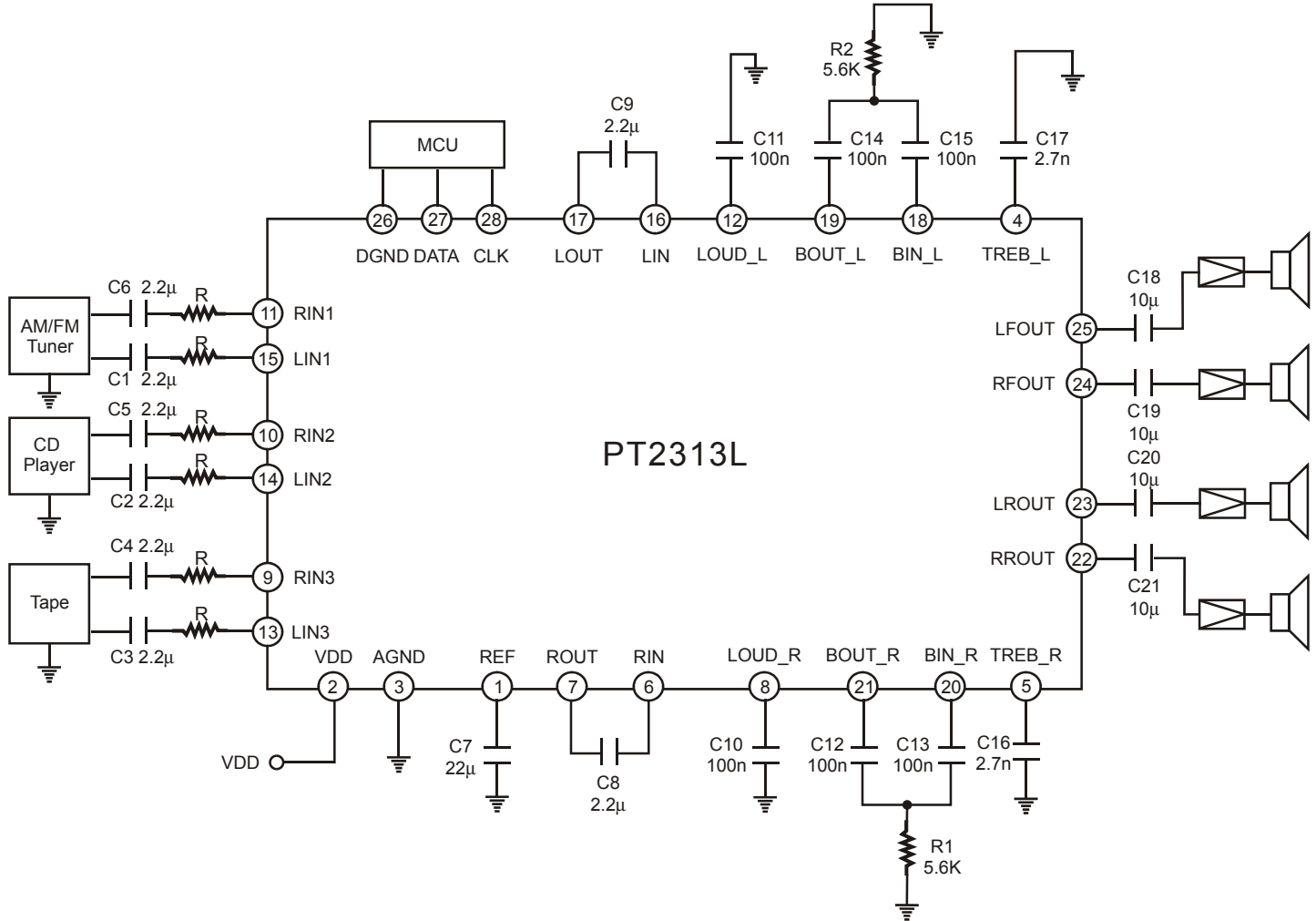


PIN CONFIGURATION





APPLICATION CIRCUIT



Notes:

1. The Resistor (R) Range=2.0KΩ to 3.6KΩ
2. Resistor (R) Recommended Value=2.4KΩ



ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT2313L-D	28 Pins, DIP, 300mil	PT2313L-D
PT2313L	28 Pins, SOP, 300mil	PT2313L
PT2313L-20	20 Pins, SSOP, 150mil	PT2313L-20

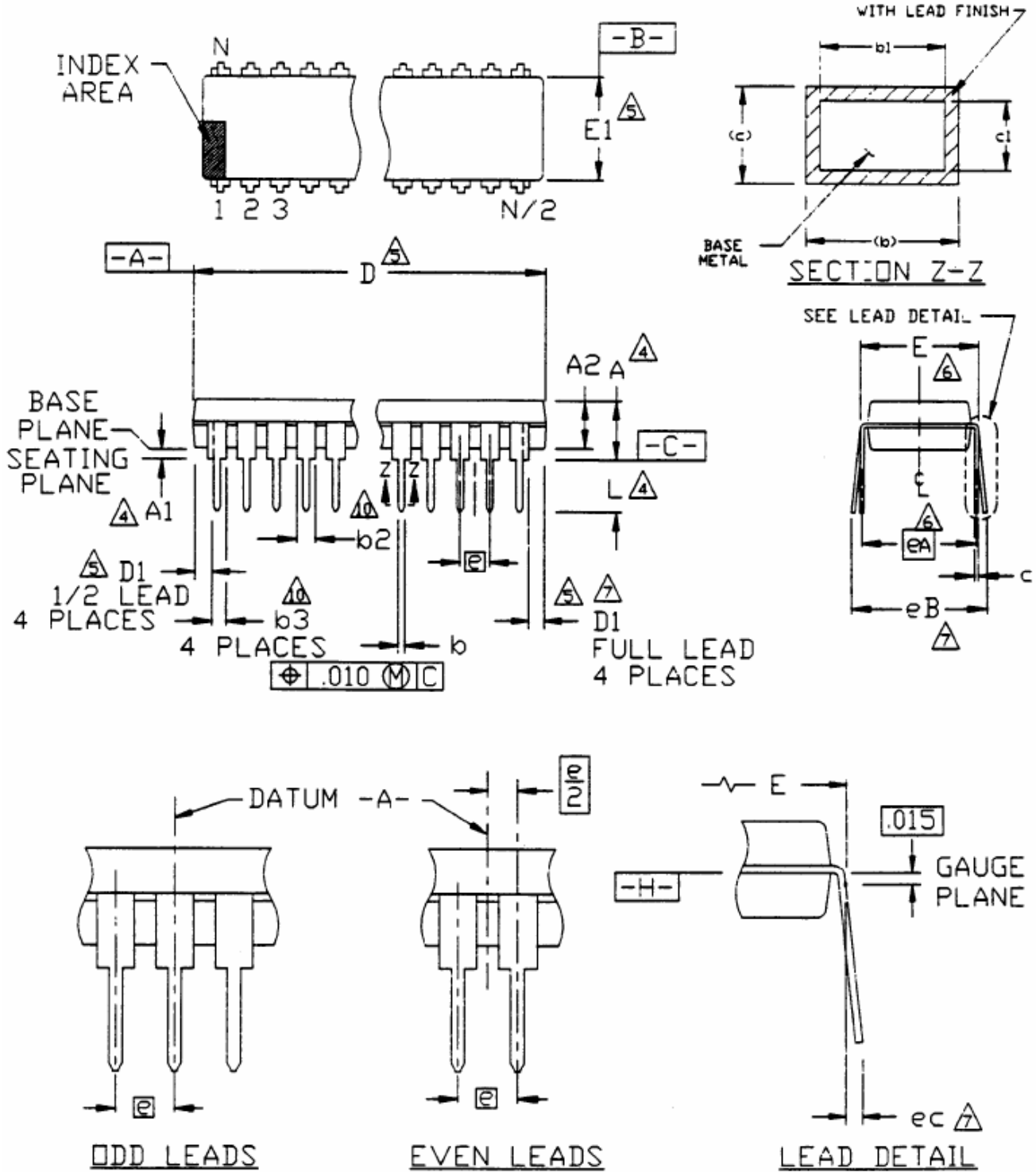


4 Channel Audio Processor

PT2313L

PACKAGE INFORMATION

28 PINS, DIP, 300MIL





4 Channel Audio Processor

PT2313L

Symbol	Min.	Nom.	Max.
A	-	-	0.210
A1	0.015	-	-
A2	0.115	0.130	0.195
b	0.014	0.018	0.022
b1	0.014	0.018	0.020
b2	0.045	0.060	0.070
b3	0.030	0.039	0.045
c	0.008	0.010	0.014
c1	0.008	0.010	0.011
D	1.345	1.365	1.400
D1	0.005	-	-
E	0.300	0.310	0.325
E1	0.240	0.250	0.280
e	-	0.100 BSC	-
eA	-	0.300 BSC	-
eB	-	-	0.430
eC	0.000	-	0.060
L	0.115	0.130	0.150

Notes:

1. All dimensions are in INCHES.
2. Dimensioning and tolerancing per ANSI Y14.5M-1982.
3. Dimension A, A1 and L are measured with the package seated in JEDEC Seating Plane Gauge GS-3.
4. D, D1, and E1 dimensions do not include mold flash or protrusions. Mold flash or protrusions shall not exceed 0.010 inch.
5. E and eA measured with the leads constrained to be perpendicular to datum $\square C$.
6. eB and eC are measured at the lead tips with the leads constrained.
7. N is the number of terminal positions (N=28)
8. Pointed or rounded lead tips are preferred to ease insertion.
9. b2 and b3 maximum dimensions do not include dambar protrusions. Dambar protrusions shall not exceed 0.010" (0.25mm).
10. This variation is a ½ lead package.
11. Distance between leads including dambar protrusions to be 0.005 inch minimum.
12. Datum plane $\square H$ coincident with the bottom of lead where lead exits body.
13. Refer to JEDEC MS-001 Variation BF.

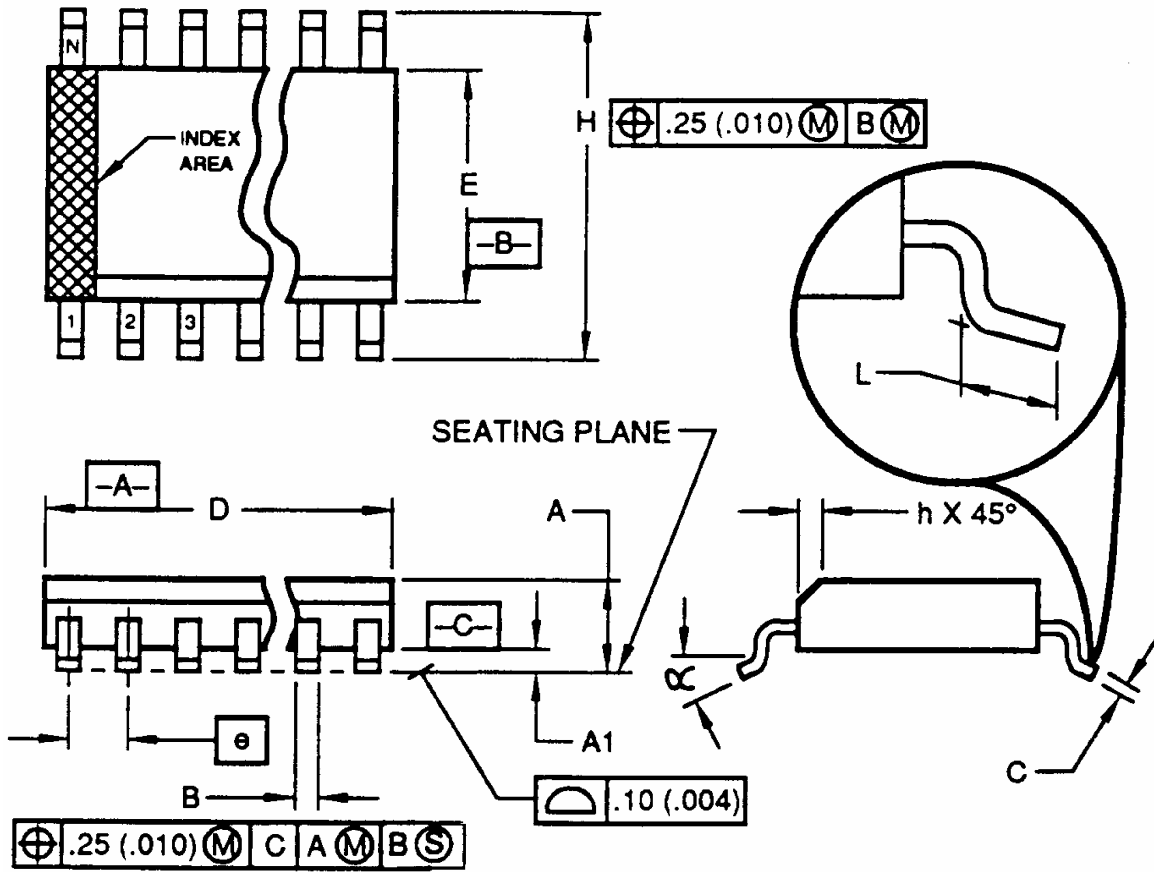
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4 Channel Audio Processor

PT2313L

28 PINS, SOP, 300MIL



Symbol	Min.	Max
A	2.35	2.65
A1	0.10	0.30
B	0.33	0.51
C	0.23	0.32
D	17.70	18.10
E	7.40	7.60
e	1.27 BSC	
H	10.00	10.65
h	0.25	0.75
L	0.40	1.27
α	0°	8°



4 Channel Audio Processor

PT2313L

Notes:

1. Dimensioning and tolerancing per ANSI Y14.5-1982.
2. Dimension D does not include mold flash, protrusions or gate burrs. Mold flash, protrusions and gate burrs shall not exceed 0.15mm (0.006 in) per side.
3. Dimension E does not include interlead flash or protrusions. Interlead flash and protrusion shall not exceed 0.15mm (0.016in) per side.
4. The chamfer on the body is optional. If it is not present, a visual index feature must be located within the crosshatched area.
5. L is the length of terminal for soldering to a substrate.
6. N is the number of terminal positions (N=28).
7. The lead width B as measured 0.36mm (0.014in) or greater above the seating plane, shall not exceed a maximum value of 0.61 mm (0.024 in).
8. Controlling dimension: MILLIMETER
9. Refer to JEDEC MS-013 Variation AE.

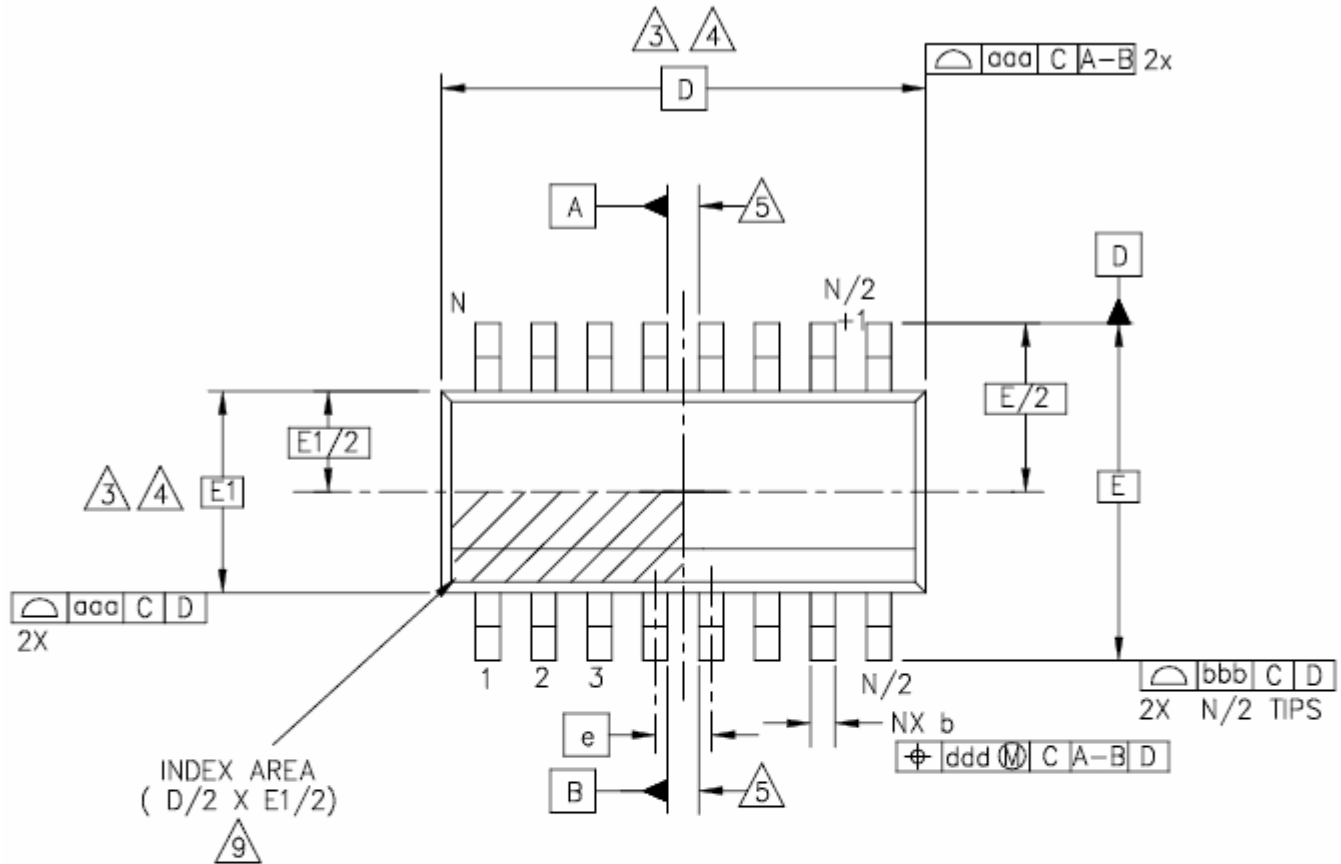
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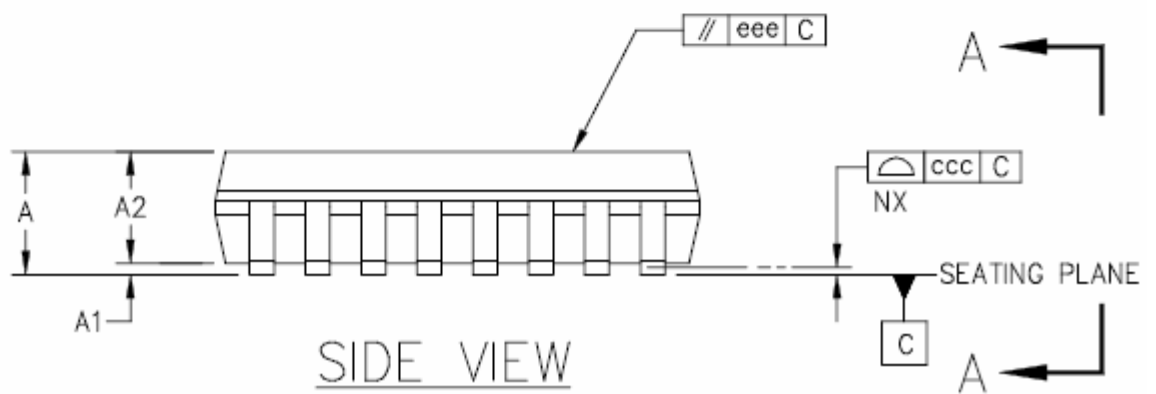
4 Channel Audio Processor

PT2313L

20 PINS, SSOP, 150MIL



TOP VIEW

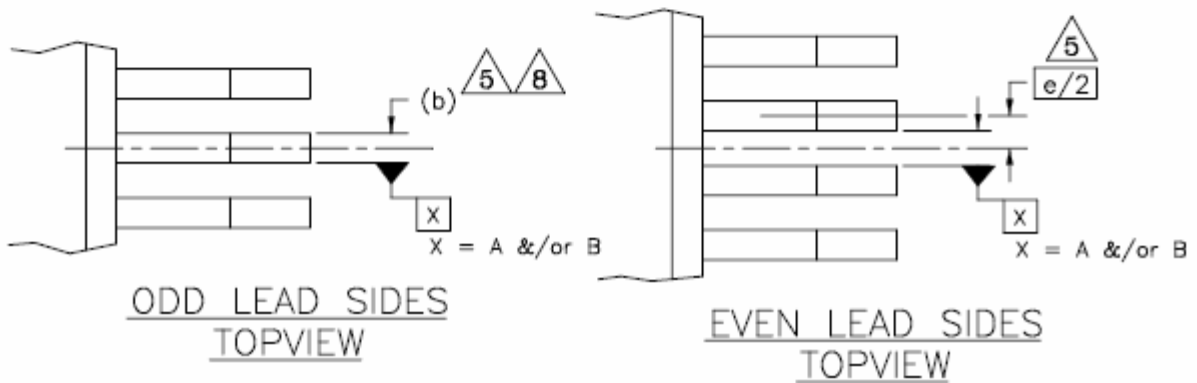
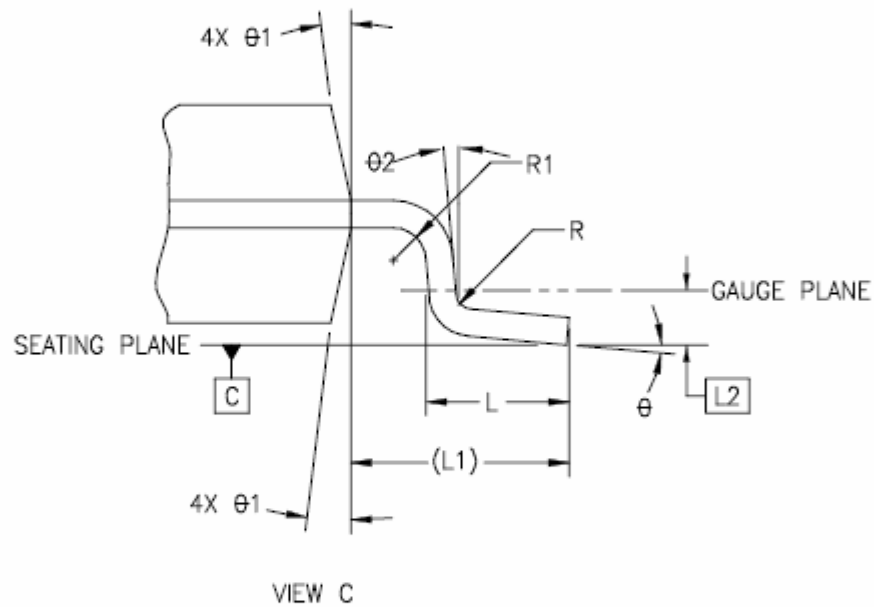
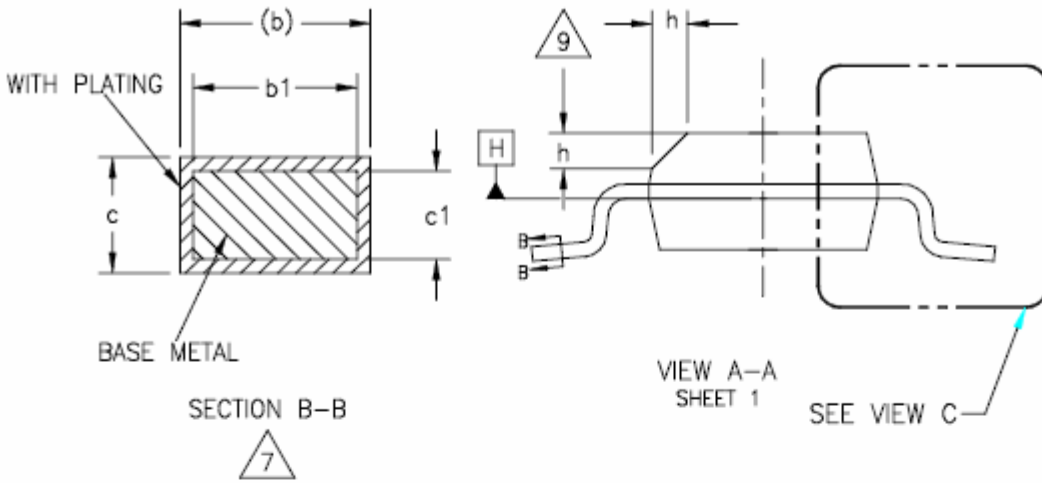


SIDE VIEW



4 Channel Audio Processor

PT2313L





4 Channel Audio Processor

PT2313L

Symbol	Min.	Nom.	Max.
A	0.053	-	0.069
A1	0.004	-	0.010
A2	0.049	-	0.065
b	0.008	-	0.012
b1	0.008	0.010	0.011
c	0.006	-	0.010
c1	0.006	0.008	0.009
D	0.341 BSC		
E	0.236 BSC		
E1	0.154 BSC		
e	0.025 BAS		
L	0.016	-	0.050
L1	0.041 REF		
L2	0.010 BAS		
R	0.003	-	-
R1	0.003	-	-
θ	0°	-	8°
θ_1	5°	-	15°
θ_2	0°	-	-
aaa	0.004		
bbb	0.008		
ccc	0.004		
ddd	0.007		
eee	0.004		



4 Channel Audio Processor

PT2313L

Notes:

1. Dimensioning and tolerancing per ANSI Y14.5M-1982.
2. Dimensions in inches (angles in degrees)
3. Dimension D does not include mold flash, protrusions or gate burrs. Mold flash, protrusions or gate burrs shall not exceed 0.006" per end. Dimension E1 does not include interlead flash or protrusions. Interlead flash or protrusions shall not exceed "0.006" per side. D1 and E1 dimensions are determined at datum H.
4. The package top may be smaller than the package bottom. Dimensions D and E1 are determined at the outermost extremes of the plastic body exclusive of mold flash, tie bar burrs, gate burrs and interlead flash, but including any mismatch between the top and bottom of the plastic.
5. Datums A and B to be determined at datum H.
6. N is the maximum number of terminal position. (N=20)
7. The dimensions apply to the flat section of the lead between 0.004 to 0.010 inches from the lead tip.
8. Dimension b does not include dambar protrusion. Allowable dambar protrusion shall be 0.004" total in excess of b dimension at maximum material condition. The dambar can not be located on the lower radius of the foot.
9. Refer to JEDEC MO-137 variation AD.

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