



DESCRIPTION

PT2308 is a Class AB stereo headphone driver chip utilizing CMOS Technology specially designed for portable digital audio applications. It is housed in an 8-pin DIP or SOP package and is functionally compatible with TDA1308. Pin assignments and application circuit are optimized for lower cost effectiveness and easy PCB Layout.

FEATURES

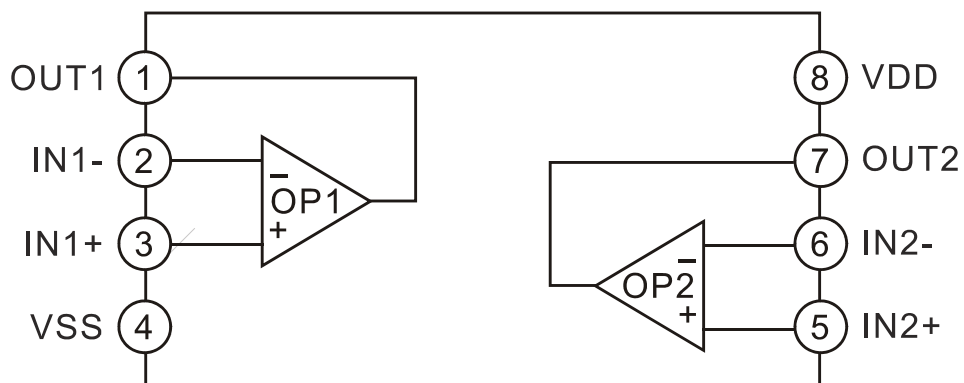
- CMOS technology
- Low power consumption
- Wide temperature range
- Excellent power supply ripple rejection
- High signal-to-noise ratio, S/N=110dB
- Low harmonic distortion, THD=0.001%
- Large output voltage swing

APPLICATIONS

- Portable digital audio
- Hi-fi audio system
- Walkman
- CD-ROM

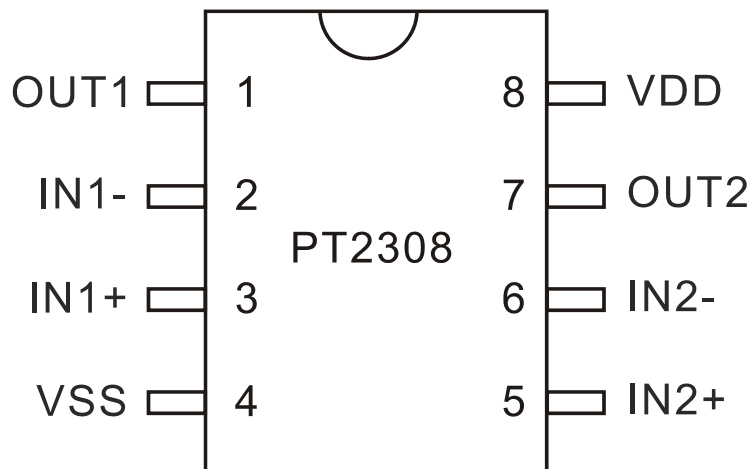


BLOCK DIAGRAM





PIN CONFIGURATION



PIN DESCRIPTION

Symbol	I/O	Description	Pin No.
OUT1	O	Output pin 1	1
IN1-	I	Inverting input pin 1	2
IN1+	I	Non-inverting input pin 1	3
VSS	-	Negative power supply	4
IN2+	I	Non-inverting input pin 2	5
IN2-	I	Inverting input pin 2	6
OUT2	O	Output pin 2	7
VDD	-	Positive power supply	8



Headphone Driver IC

PT2308

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Supply voltage	VDD	8	V
Operating temperature	Topr	-40~+85	°C
Storage temperature	Tstg	-65~+150	°C

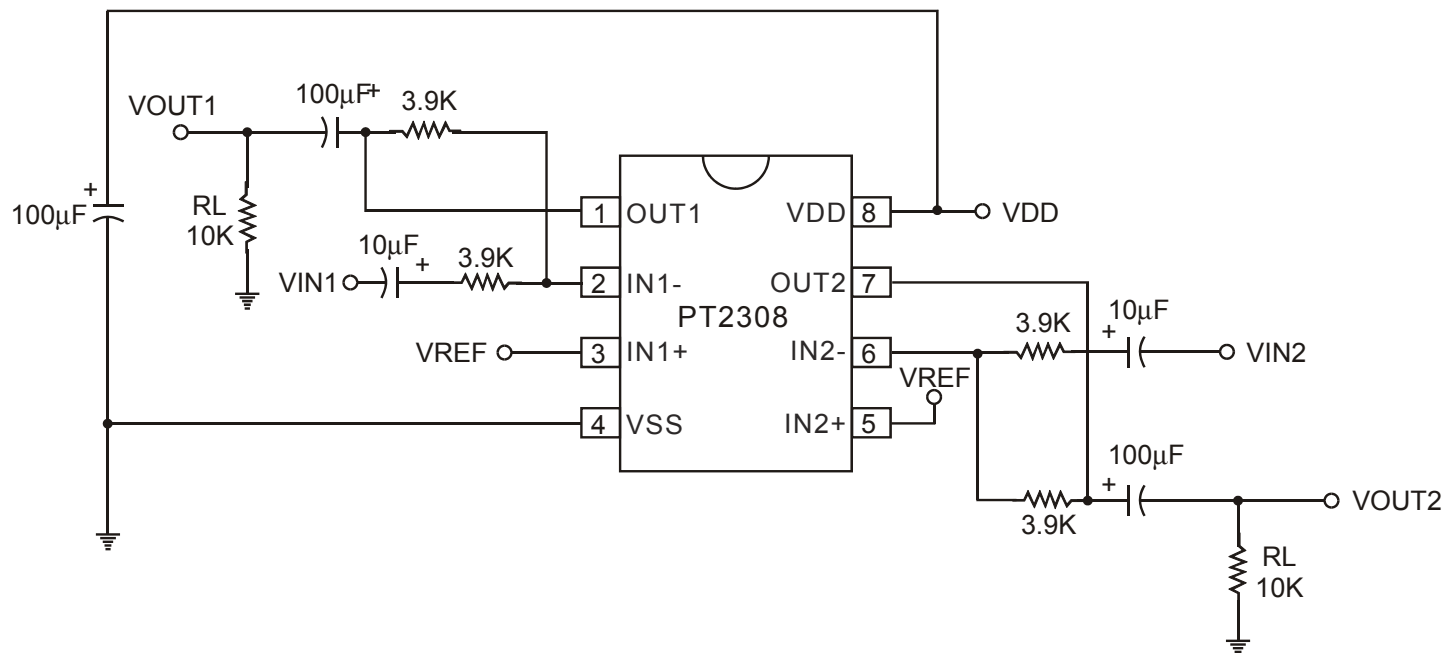
ELECTRICAL CHARACTERISTICS

(Unless otherwise stated, VDD=5V, VSS=0V, Ta=25°C, fin=1KHz, RL=32Ω)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Signal supply voltage	VDD		3.0	5.0	7.0	V
Dual supply voltage			1.5	2.5	3.5	
Negative power voltage	VSS		-1.5	-2.5	-3.5	V
Supply current	IDD	No Load	-	7.0	-	mA
Total power dissipation	Ptot	No Load	-	35	-	mW
Maximum output power	Po		-	60	-	mW
Total harmonic distortion	THD	Vo(p-p)=3.5V	-	0.03	0.06	%
		Vo(p-p)=3.5V RL=5KΩ	-	0.001	-	
Signal-to-noise ratio	S/N		100	110	-	dB
Channel separation	α_{cs}		-	70	-	dB
		RL=5KΩ	-	105	-	
Power supply ripple rejection	PSRR	fin=100Hz; Vripple(p-p)=100mV	-	90	-	dB
Maximum input voltage	VImax	THD<0.1%	-	1.4	-	V
Output resistance	ROUT		-	2	-	Ω



APPLICATION CIRCUIT



Note: $V_{REF} = 1/2 V_{DD}$



ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT2308	8 Pins, DIP, 300mil	PT2308
PT2308-S	8 Pins, SOP, 150mil	PT2308-S
PT2308 (L)	8 Pins, DIP, 300mil	PT2308
PT2308-S (L)	8 Pins, SOP, 150mil	PT2308-S

Notes:

1. (L), (C) or (S) = Lead Free.
2. The Lead Free mark is put in front of the date code.

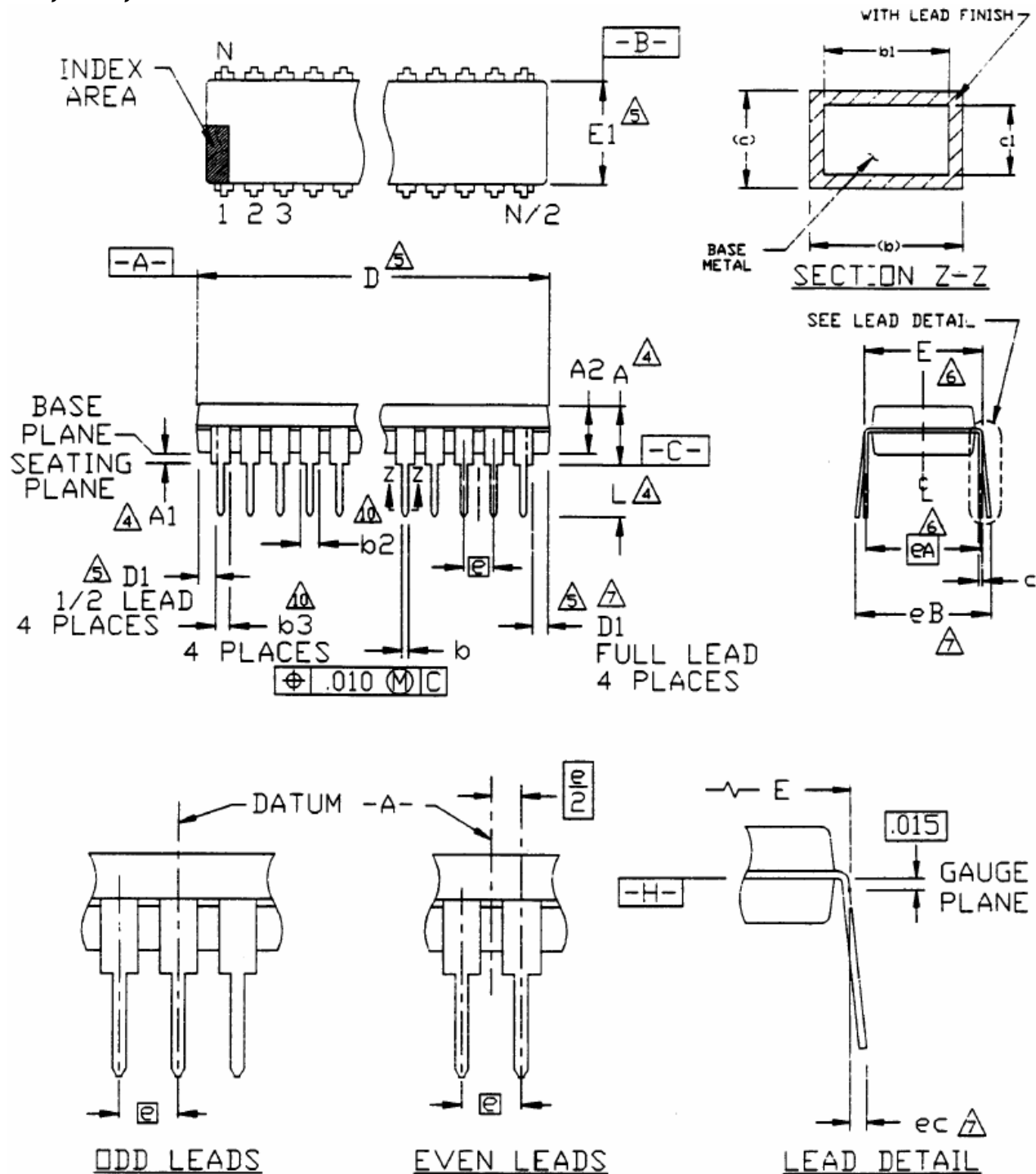


Headphone Driver IC

PT2308

PACKAGE INFORMATION

8 PINS, DIP, 300MIL





Headphone Driver IC

PT2308

Symbol	Dimensions In Inches		
	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	0.355	0.365	0.400
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:

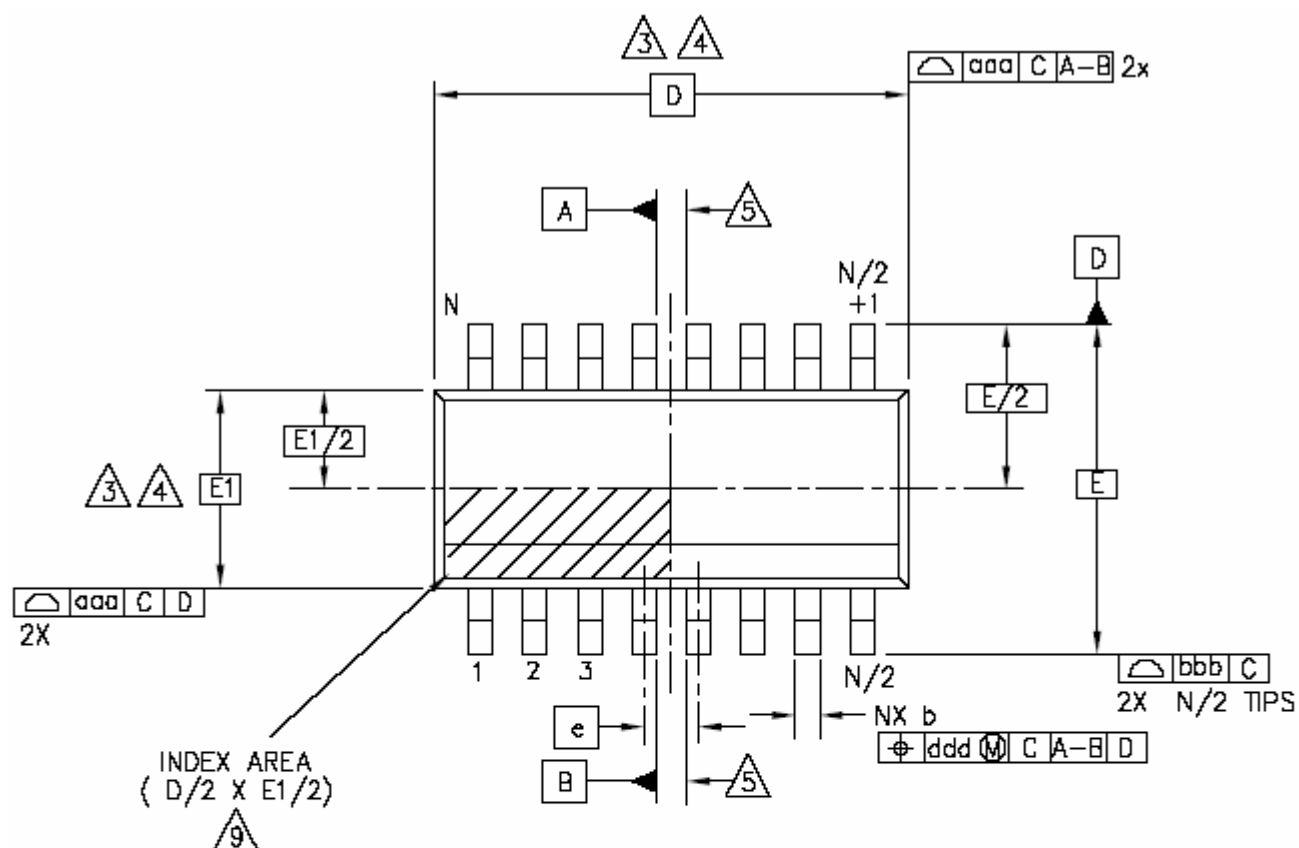
1. Controlling Dimensions: INCHES.
2. Dimensioning and tolerancing per ANSI Y14.5M-1982.
3. Symbols are defined in the "MO Series Symbol LIST" in Section 2.2 of Publication No.95.
4. Dimension A, A1 and L are measured with the package seated in JEDEC Seating Plane Gauge GS-3.
5. D, D1 and E1 dimensions do not include mold flash or protrusions. Mold flash or protrusions shall not exceed 0.010 inch.
6. E and eA measured with the leads constrained to be perpendicular to data -C-.
7. eB and eC are measured at the lead tips with the leads unconstrained.
8. N is the number of leads (N=8)
9. Pointed or rounded lead tips are preferred to ease insertion.
10. b2 and b3 maximum dimensions do not include dambar protrusions. Dambar protrusions shall not exceed 0.010 inch (0.25mm)
11. Variation BA has a b3 dimension and is 1/2 lead package.
12. Distance between the leads including dambar protrusions to be 0.005 inch minimum.
13. Datum plane -H- coincident with the bottom of lead, where lead exits the body.
14. Refer to JEDEC MS-001, Variation BA.

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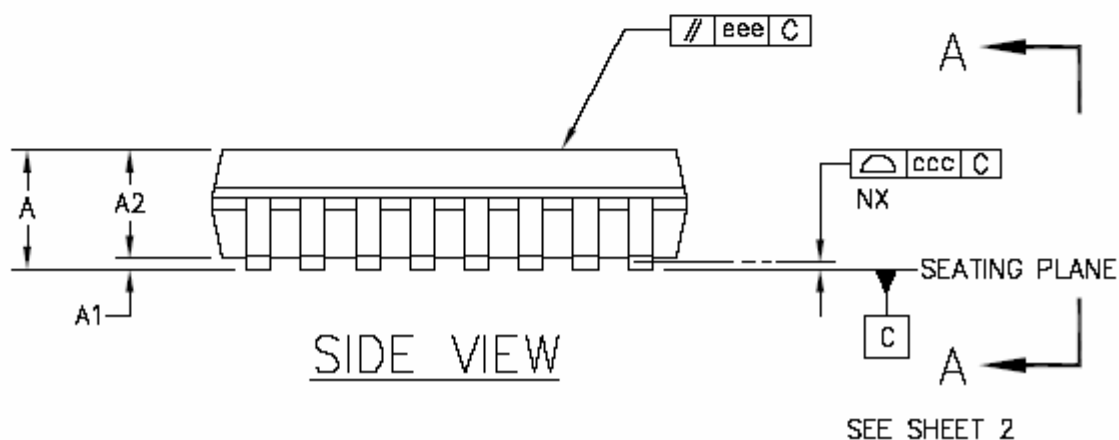
Headphone Driver IC

PT2308

8 PINS, SOP, 150MIL



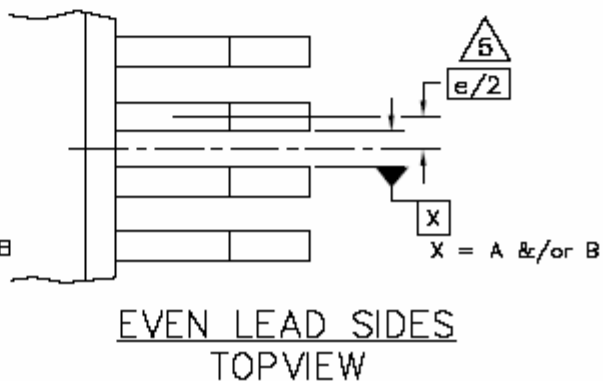
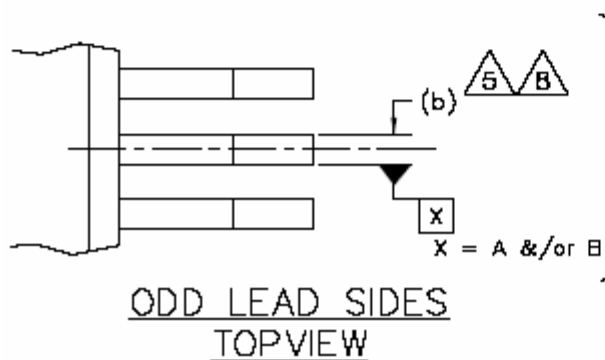
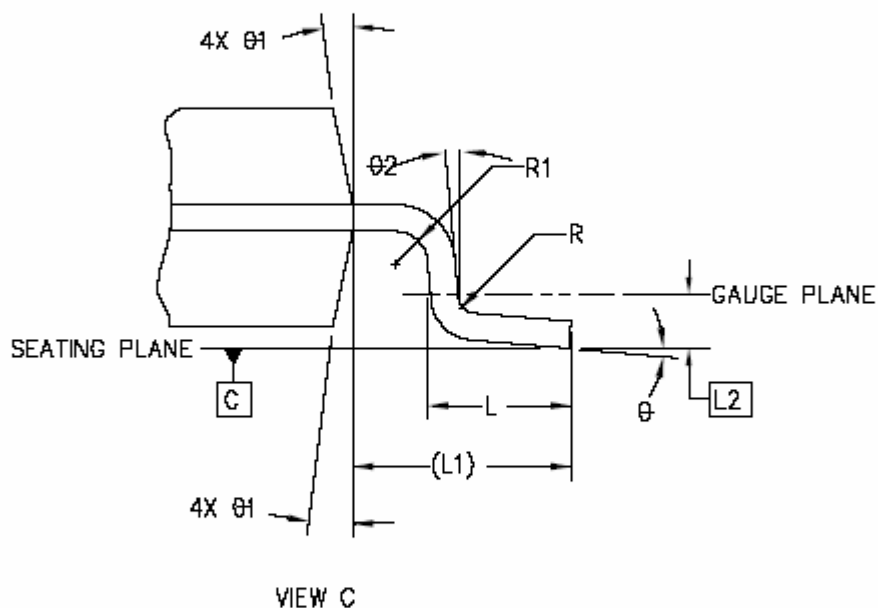
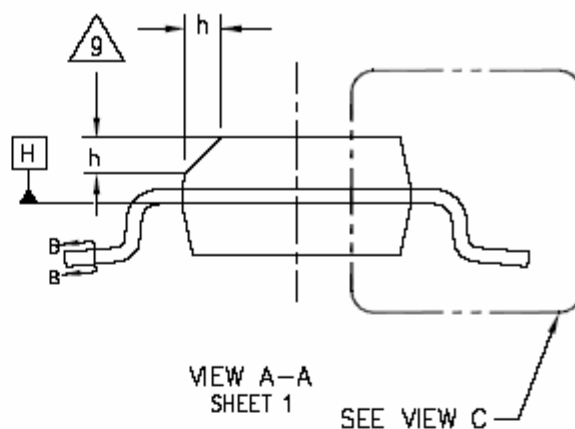
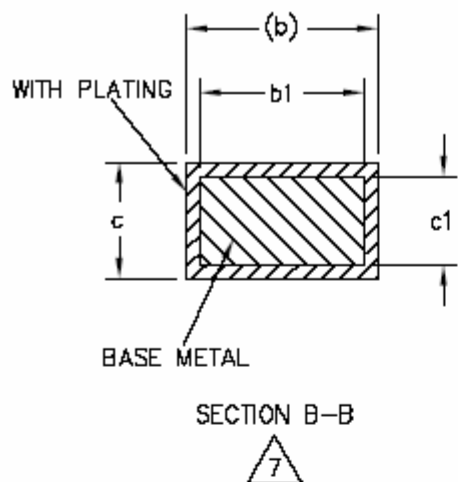
TOP VIEW





Headphone Driver IC

PT2308





Headphone Driver IC

PT2308

Symbol	Min.	Typ.	Max.
A	1.35	-	1.75
A1	0.10	-	0.25
A2	1.25	-	1.65
b	0.31	-	0.51
b1	0.28	-	0.48
c	0.17	-	0.25
c1	0.17	-	0.23
D	4.90 BSC.		
E	6.00 BSC.		
E1	3.90 BSC.		
e	1.27 BSC.		
L	0.40	-	1.27
L1	1.04 REF.		
L2	0.25 BSC.		
R	0.07	-	-
R1	0.07	-	-
h	0.25	-	0.50
θ	0°	-	8°
θ1	5°	-	15°
θ2	0°	-	-

Notes:

1. Dimensioning and tolerancing per ANSI Y 14.5M-1994
2. Controlling Dimension: MILLIMETERS.
3. Dimension D does not include mold flash protrusions or gate burrs. Mold flash, protrusions or gate burrs shall not exceed 0.15 mm (0.006 in) per end. Dimension E1 does not include interlead flash or protrusion. Interlead flash or protrusion shall not exceed 0.25mm per side. D 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 body.
5. Datums A & B to be determined at datum H.
6. N is the number of terminal positions. (N=8)
7. The dimensions apply to the flat section of the lead between 0.10 to 0.25mm from the lead tip.
8. Dimension "b" does not include dambar protrusion. Allowable dambar protrusion shall be 0.10mm total in excess of the "b" dimension at maximum material condition. The dambar cannot be located on the lower radius of the foot.
9. This chamfer feature is optional. If it is not present, then a pin 1 identifier must be located within the index area indicated.
10. Refer to JEDEC MS-012, Variation AA.
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