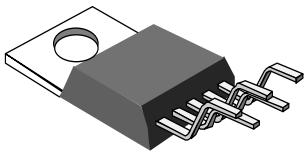
ILA2003

10W AUDIO AMPLIFIER

DESCRIPTION

The main features of ILA 2003, are very low number of external components, easy of assembly, space and cost saving.
The device provides a high output current capability (up to 3.5A), very low harmonic and cross-over distortion.
Completely safe operation is guaranteed due to protection against DC and AC short circuit between all pins and ground, thermal over-range, load dump voltage up to 40V and open ground.



TO 220 AB/5

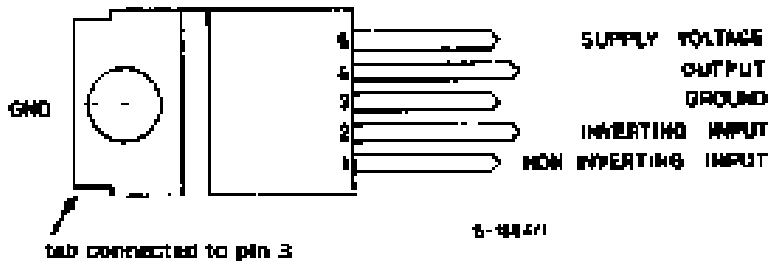
PENTAWATT

ORDERING NUMBERS : ILA2003

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
Vs	Peak supply voltage (50 ms)	40	V
Vs	DC supply voltage	28	V
Vs	Operating supply voltage	18	V
Io	Output peak current (repetitive)	3.5	A
Io	Output peak current (non repetitive)	4.5	A
Ptot	Power dissipation at Tcase =90°C	20	W
Tstg,Tj	Storage and junction temperature	-40 to 150	°C

PIN CONNECTION



THERMAL DATA

Symbol	Parameter		Value	Unit
Rth-j-case	Thermal resistance junction-case	max	3	°C/W

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ELECTRICAL CHARACTERISTICS (V_S = 14.4V, T_{amb} =25 °C unless otherwise specified)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
DC CHARACTERISTICS						
Vs	Supply voltage		8		18	V
Vo	Quiescent output voltage (pin 4)		6.1	6.9	7.7	V
Id	Quiescent drain current (pin 5)			44	50	mA
AC CHARACTERISTICS						
Po	Output power	d = 10% f = 1 kHz RL =4Ω RL =2Ω RL = 3.2Ω RL = 1.6Ω	 5.5 9	 6 10 7.5 12		 W W W W
Vi(rms)	Input saturation voltage		300			mV
Vi	Input sensitivity	f = 1 kHz Po = 0.5W RL =4Ω Po =6W RL =4Ω Po = 0.5W RL =2Ω Po 10W RL =2Ω		 14 55 10 50		 mV mV mV mV
B	Frequency response (-3 dB)	Po =1W RL =4Ω	40 to 15000			Hz
d	Distortion	f = 1 kHz Po = 0.05 to4.5W RL =4Ω Po = 0.05 to7.5W RL =2Ω		 0,15 0,15		 % %
Ri	Input resistance (pin1)	f = 1 kHz	70	150		kΩ
Gv	Voltage gain (open loop)	f = 1 kHz f = 10 kHz		80 60		dB dB
Gv	Voltage gain (closed loop)	f = 1 kHz RL =4Ω	 39,3	 40	 40,3	 dB
eN	Input noise voltage			1	5	µV
iN	Input noise current			60	200	pA
h	Efficiency	f = 1 kHz Po =6W RL =4Ω Po 10W RL =2Ω		 69 65		 % %
SVR	Supply voltage rejection	f = 100 Hz Vripple = 0.5V Rg =10 kΩ RL =4 Ω	 30	 36		 dB

(0) Filter with noise bandwidth: 22 Hz to 22 kHz

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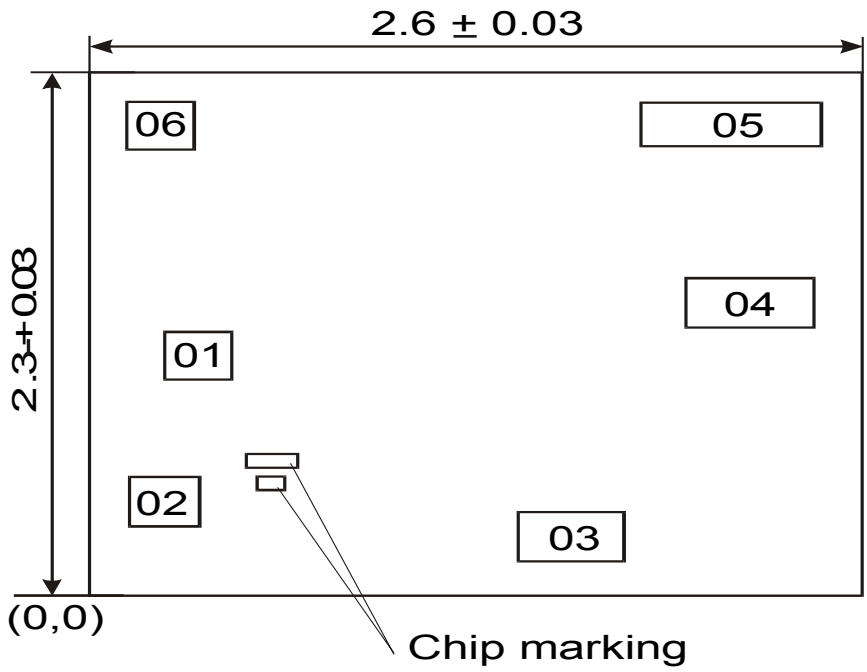
CHIP DIAGRAM



Chip marking (X=0,540, Y=0,530) **YH14**

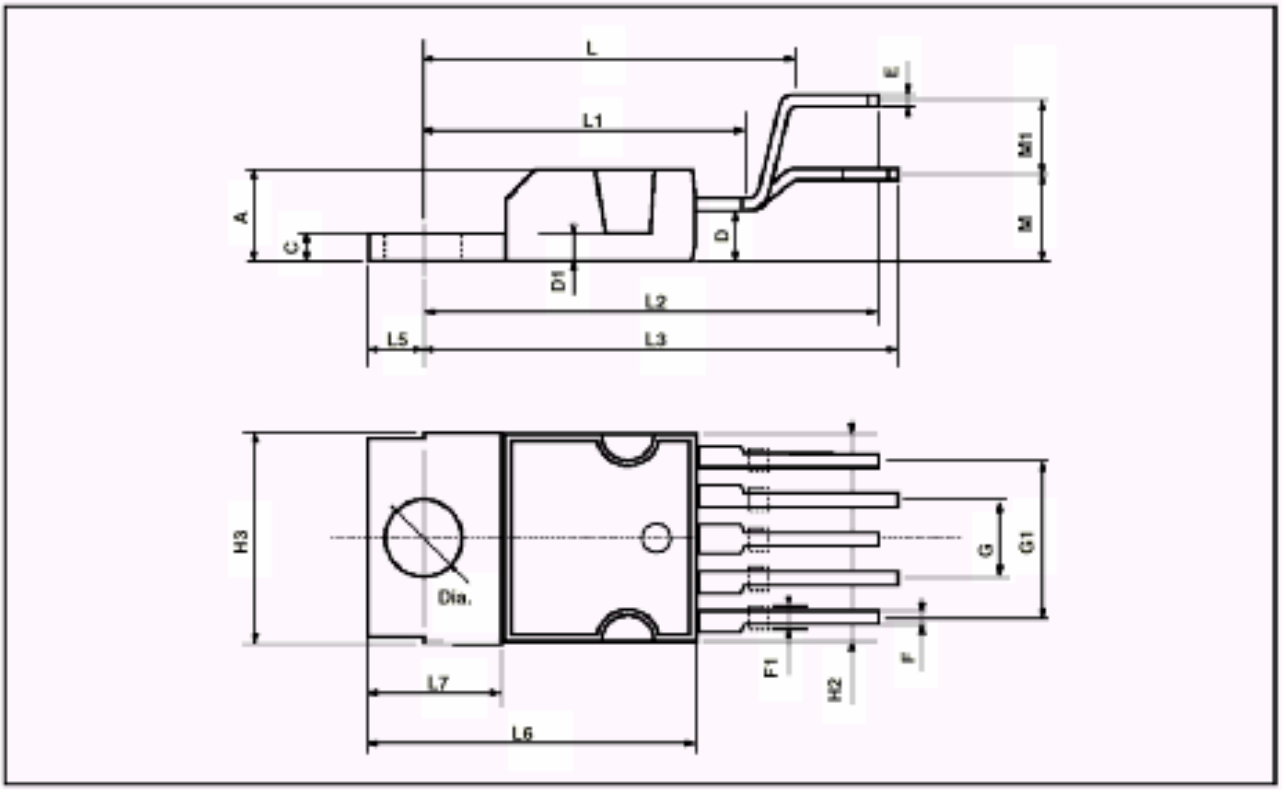
PAD LOCATION

Pin No	Pad No	Symbol	X	Y	Pad size (mm)
01	01	IN	0.224	0.890	0.230 x 0.219
02	02	$\overline{\text{IN}}$	0.113	0.291	0.230 x 0.209
03	03	GND	1.367	0.195	0.437 x 0.266
04	04	OUT	1.985	1.078	0.500 x 0.238
05	05	Ud	1.812	1.942	0.673 x 0.230
03	06	GND	0.132	1.957	0.258 x 0.230

Pad size is given as per metallization layer

PENTAWATT PACKAGE MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			4.8			0.189
C			1.37			0.054
D	2.4		2.8	0.094		0.110
D1	1.2		1.35	0.047		0.053
E	0.35		0.55	0.014		0.022
F	0.8		1.05	0.031		0.041
F1	1		1.4	0.039		0.055
G		3.4		0.126	0.134	0.142
G1		6.8		0.260	0.268	0.276
H2			10.4			0.409
H3	10.05		10.4	0.396		0.409
L		17.85			0.703	
L1		15.75			0.620	
L2		21.4			0.843	
L3		22.5			0.886	
L5	2.6		3	0.102		0.118
L6	15.1		15.8	0.594		0.622
L7	6		6.6	0.236		0.260
M		4.5			0.177	
M1		4			0.157	
Dia	3.65		3.85	0.144		0.152



INTEGRAL