

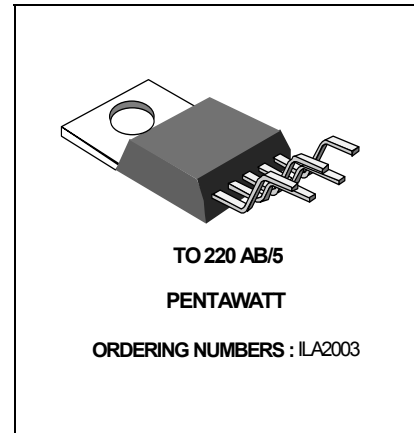
## 10W AUDIO AMPLIFIER

### 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.

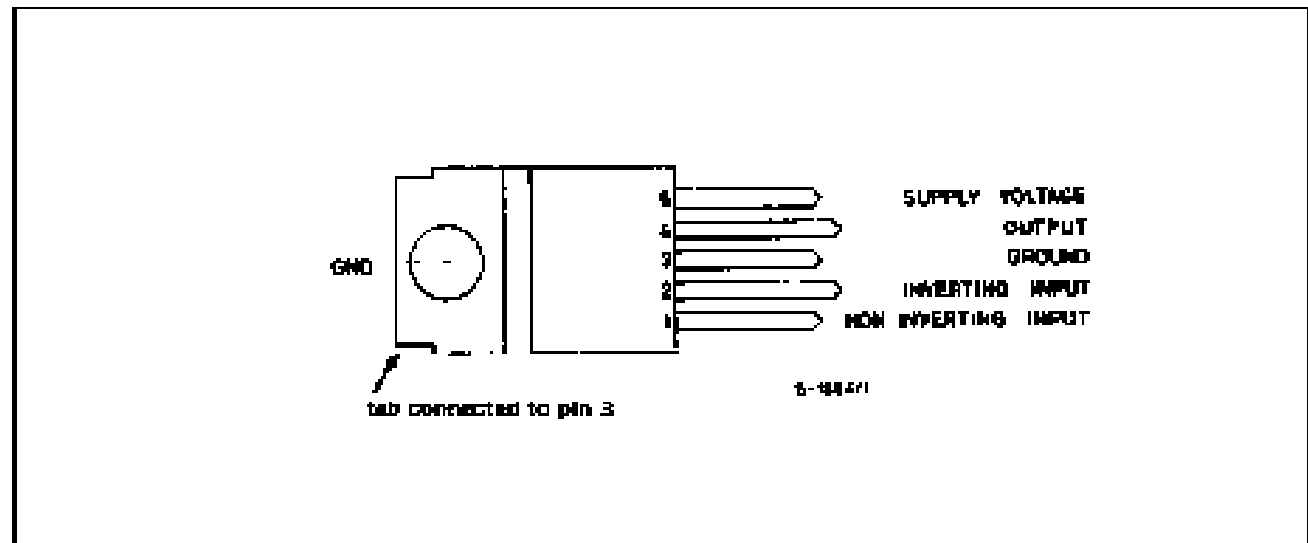
Completely safe operation is guaranteed due to protection against DC and AC short circuit between all pins and ground, thermal over-range, load dump voltage up to 40V and open ground.



### 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



# ILA2003

## ELECTRICAL CHARACTERISTICS ( $V_s = 14.4V$ , $T_{amb} = 25^\circ C$ unless otherwise specified)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
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### DC CHARACTERISTICS

$V_s$	Supply voltage		8		18	V
$V_o$	Quiescent output voltage (pin 4)		6.1	6.9	7.7	V
$I_d$	Quiescent drain current (pin 5)			44	50	mA

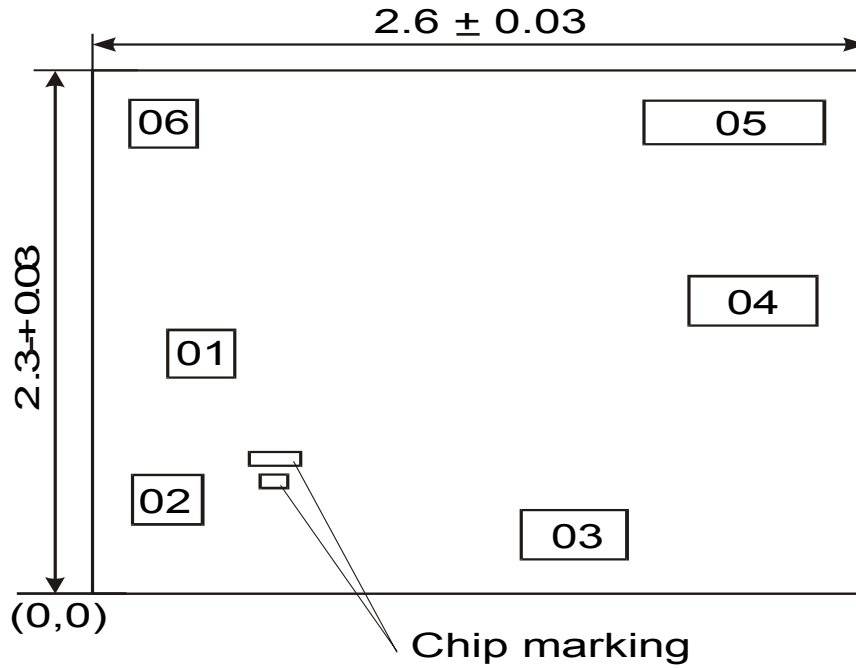
### AC CHARACTERISTICS

$P_o$	Output power	$d = 10\%$ $f = 1 \text{ kHz}$ $R_L = 4\Omega$ $R_L = 2\Omega$ $R_L = 3.2\Omega$ $R_L = 1.6\Omega$	5.5 9	6 10 7.5 12		W W W W
$V_i(\text{rms})$	Input saturation voltage		300			mV
$V_i$	Input sensitivity	$f = 1 \text{ kHz}$ $P_o = 0.5W$ $R_L = 4\Omega$ $P_o = 6W$ $R_L = 4\Omega$ $P_o = 0.5W$ $R_L = 2\Omega$ $P_o 10W$ $R_L = 2\Omega$		14 55 10 50		mV mV mV mV
B	Frequency response ( -3 dB)	$P_o = 1W$ $R_L = 4\Omega$	40 to 15000			Hz
d	Distortion	$f = 1 \text{ kHz}$ $P_o = 0.05 \text{ to } 4.5W$ $R_L = 4\Omega$ $P_o = 0.05 \text{ to } 7.5W$ $R_L = 2\Omega$		0,15 0,15		% %
$R_i$	Input resistance (pin1)	$f = 1 \text{ kHz}$	70	150		k $\Omega$
$G_v$	Voltage gain (open loop)	$f = 1 \text{ kHz}$ $f = 10 \text{ kHz}$		80 60		dB dB
$G_v$	Voltage gain (closed loop)	$f = 1 \text{ kHz}$ $R_L = 4\Omega$	39,3	40	40,3	dB
eN	Input noise voltage			1	5	$\mu V$
iN	Input noise current			60	200	pA
h	Efficiency	$f = 1 \text{ kHz}$ $P_o = 6W$ $R_L = 4\Omega$ $P_o 10W$ $R_L = 2\Omega$		69 65		% %
SVR	Supply voltage rejection	$f = 100 \text{ Hz}$ Vripple = 0.5V $R_g = 10 \text{ k}\Omega$ $R_L = 4 \Omega$	30	36		dB

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





**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



**ILA2003**

## 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

