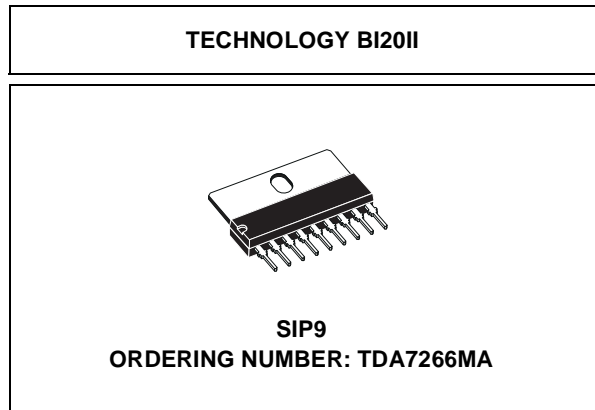




# TDA7266MA

## 7W MONO BRIDGE AMPLIFIER

- WIDE SUPPLY VOLTAGE RANGE (3-18V)
- MINIMUM EXTERNAL COMPONENTS
  - NO SWR CAPACITOR
  - NO BOOTSTRAP
  - NO BOUCHEROT CELLS
  - INTERNALLY FIXED GAIN
- STAND-BY & MUTE FUNCTIONS
- SHORT CIRCUIT PROTECTION
- THERMAL OVERLOAD PROTECTION

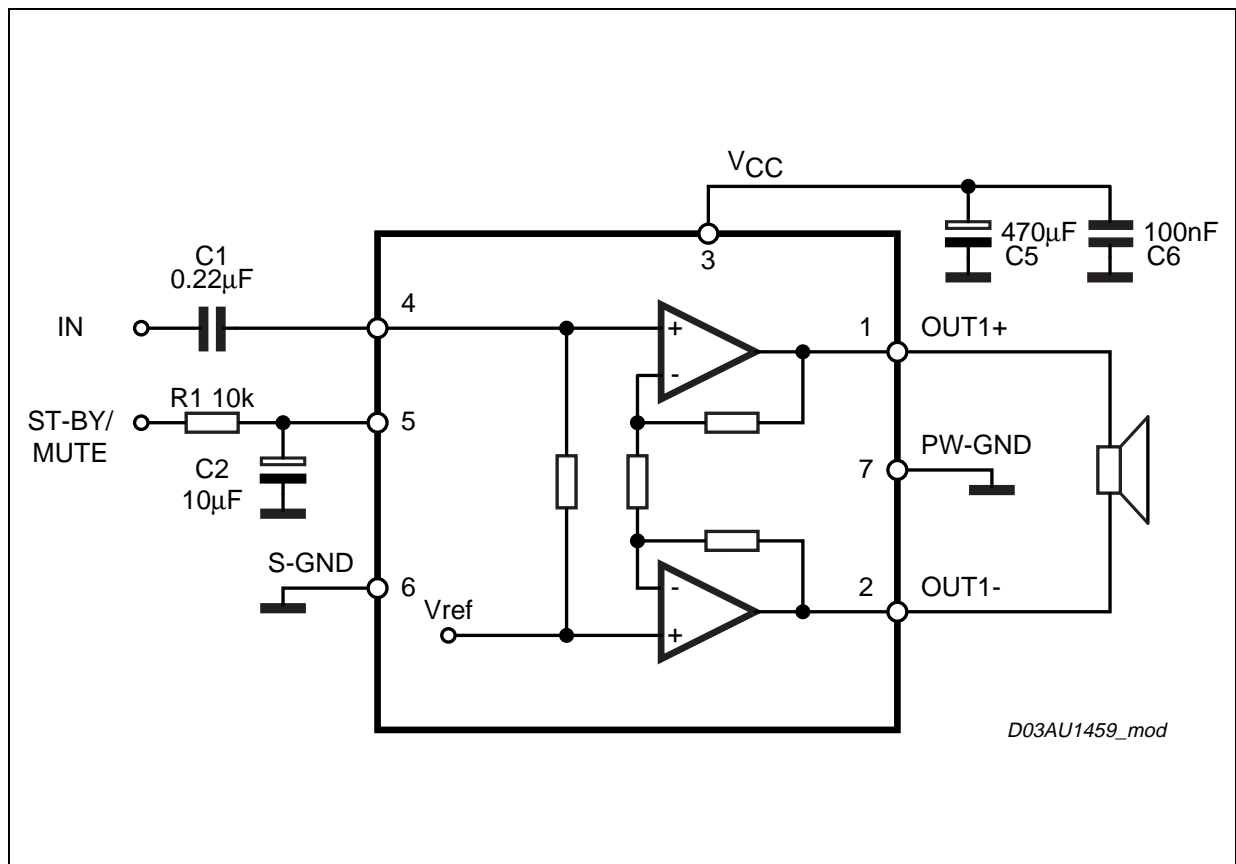


### DESCRIPTION

The TDA7266MA is a mono bridge amplifier specially designed for TV and Portable Radio applications.

Pin to pin compatible with: TDA7266S, TDA7266, TDA7266M, TDA7266MA, TDA7266B, TDA7297SA & TDA7297.

Figure 1. Block and Application Diagram



# TDA7266MA

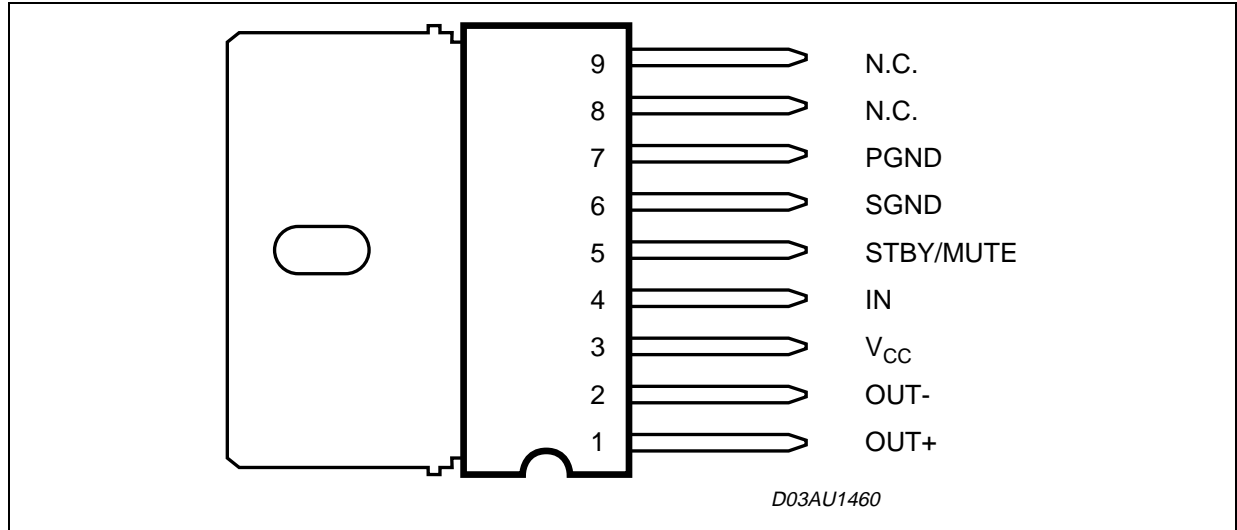
## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
$V_s$	Supply Voltage	20	V
$I_O$	Output Peak Current (internally limited)	2	A
$T_{op}$	Operating Temperature	0 to 70	°C
$T_{stg}, T_j$	Storage and Junction Temperature	-40 to 150	°C

## THERMAL DATA

Symbol	Parameter	Value	Unit
$R_{th\ j-case}$	Thermal Resistance Junction-case	9	°C/W

## PIN CONNECTION (Top view)



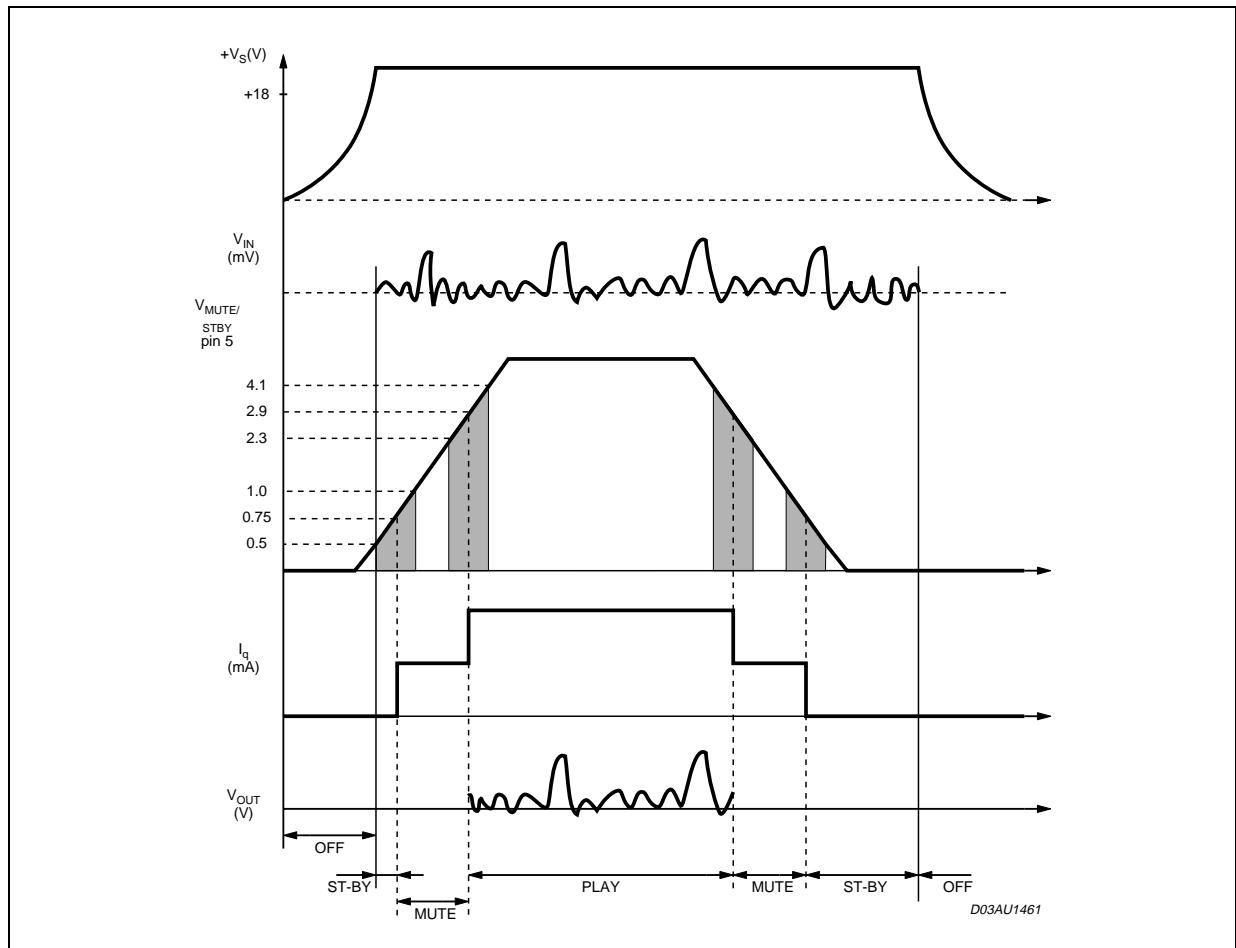
## ELECTRICAL CHARACTERISTICS

( $V_{CC} = 11V$ ,  $R_L = 8\Omega$ ,  $f = 1KHz$ ,  $T_{amb} = 25^\circ C$  unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$V_{CC}$	Supply Range		3	11	18	V
$I_q$	Total Quiescent Current			50	65	mA
$V_{OS}$	Output Offset Voltage				120	mV
$P_O$	Output Power	THD 10%	6.3	7		W
THD	Total Harmonic Distortion	$P_O = 1W$		0.05	0.2	%
		$P_O = 0.1W$ to $2W$ $f = 100Hz$ to $15KHz$			1	%
SVR	Supply Voltage Rejection	$f = 100Hz$ , $V_R = 0.5V$	40	56		dB
$A_{MUTE}$	Mute Attenuation		60	80		dB
$T_w$	Thermal Threshold			150		°C
$G_V$	Closed Loop Voltage Gain		25	26	27	dB
$R_i$	Input Resistance		25	30		K $\Omega$

**ELECTRICAL CHARACTERISTICS** (continued)(V<sub>CC</sub> = 11V, R<sub>L</sub> = 8Ω, f = 1KHz, T<sub>amb</sub> = 25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
VT <sub>MUTE</sub>	Mute Threshold	for V <sub>CC</sub> > 6.4V; Vo = -30dB	2.3	2.9	4.1	V
		for V <sub>CC</sub> < 6.4V; Vo = -30dB	V <sub>CC</sub> /2 -1	V <sub>CC</sub> /2 -075	V <sub>CC</sub> /2 -0.5	V
VT <sub>ST-BY</sub>	St-by Threshold		0.8	1.3	1.8	V
I <sub>ST-BY</sub>	St-by Current V6 = GND				100	μA
e <sub>N</sub>	Total Output Voltage	A Curve; f = 20Hzto 20KHz		150		μV

**APPLICATION SUGGESTION****STAND-BY AND MUTE FUNCTIONS****Figure 2. Microprocessor Driving Signals**

The St-by and mute terminals are tied together and they are connected to the supply line via an external voltage divider.

The device is switched-on/off from the supply line and the external capacitor C4 is intended to delay the St-by and mute threshold exceeding, avoiding "Popping" problems.

Figure 3. Stand-alone low-cost Application

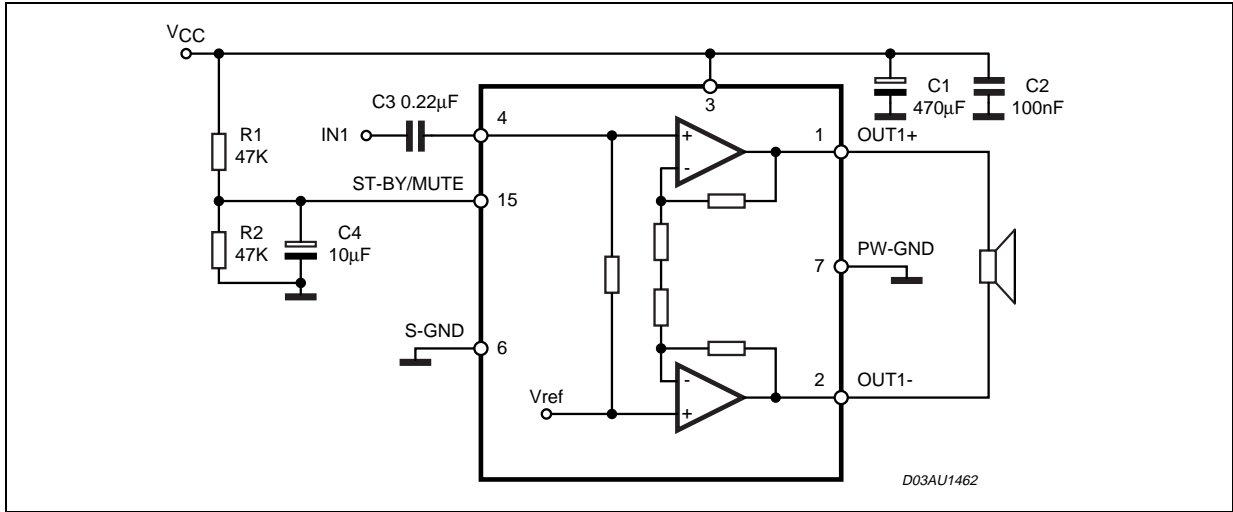


Figure 4. Distortion vs Ouput Power

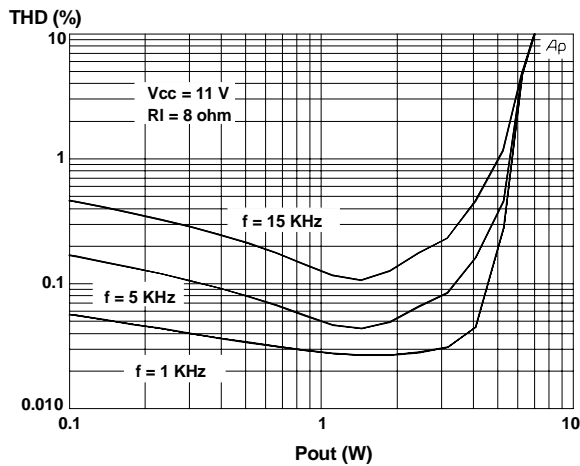


Figure 6. Distortion vs. Frequency

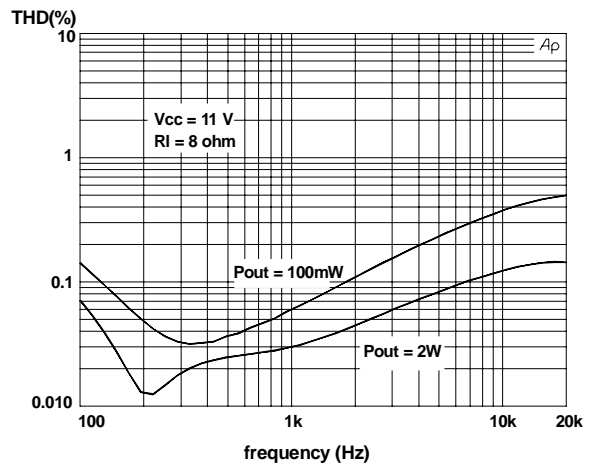


Figure 5. Distortion vs Ouput Power

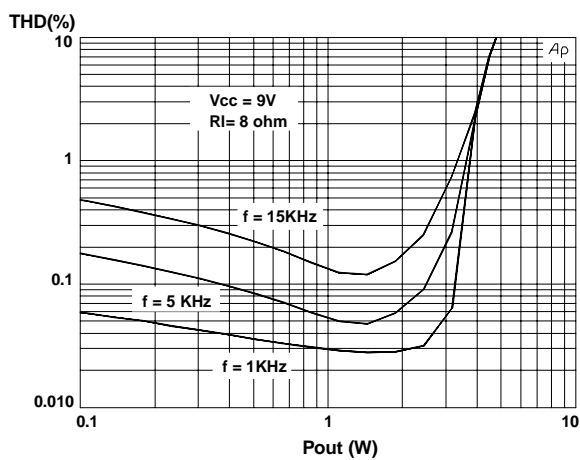


Figure 7. Gain vs Frequency

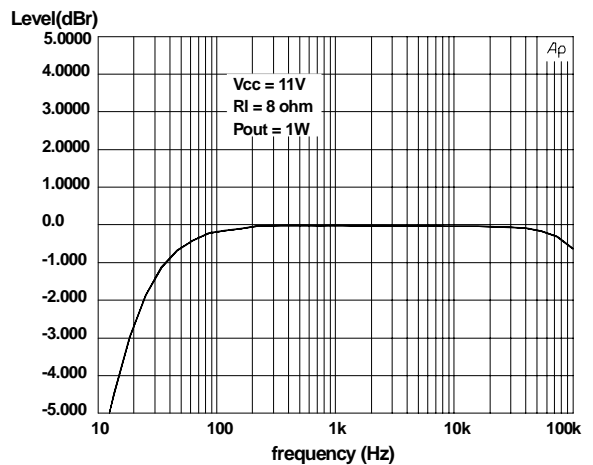


Figure 8. Output Power vs. Supply Voltage

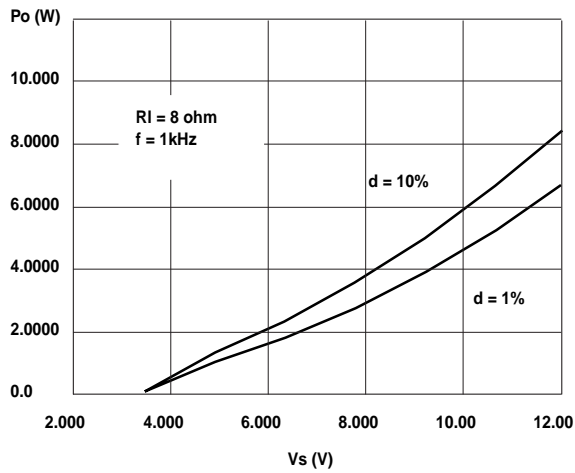


Figure 10. Mute & Stand-By Attenuation vs.  $V_{pin.5}$

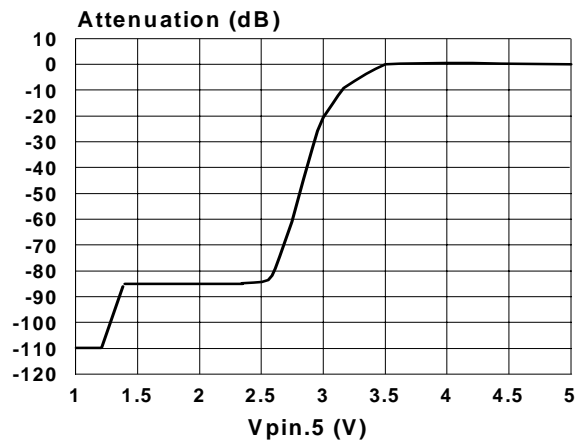


Figure 9.  $P_{tot}$  Dissipation & Efficiency vs.  $P_{out}$

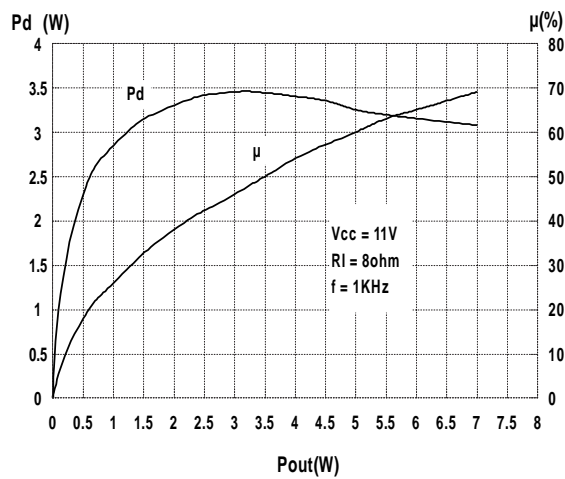


Figure 11. Quiescent Current vs. Supply Voltage

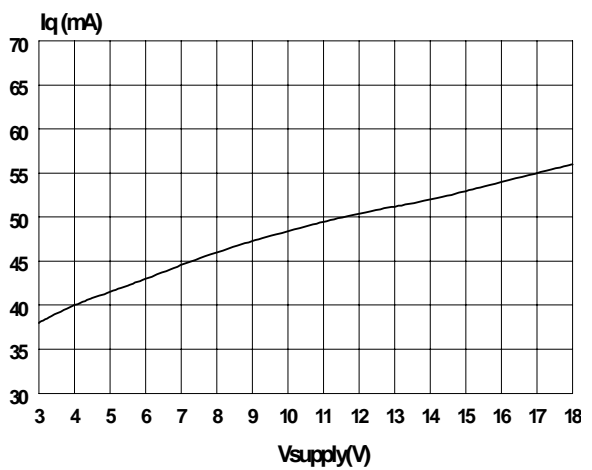


Figure 12. PC Board Component Layout

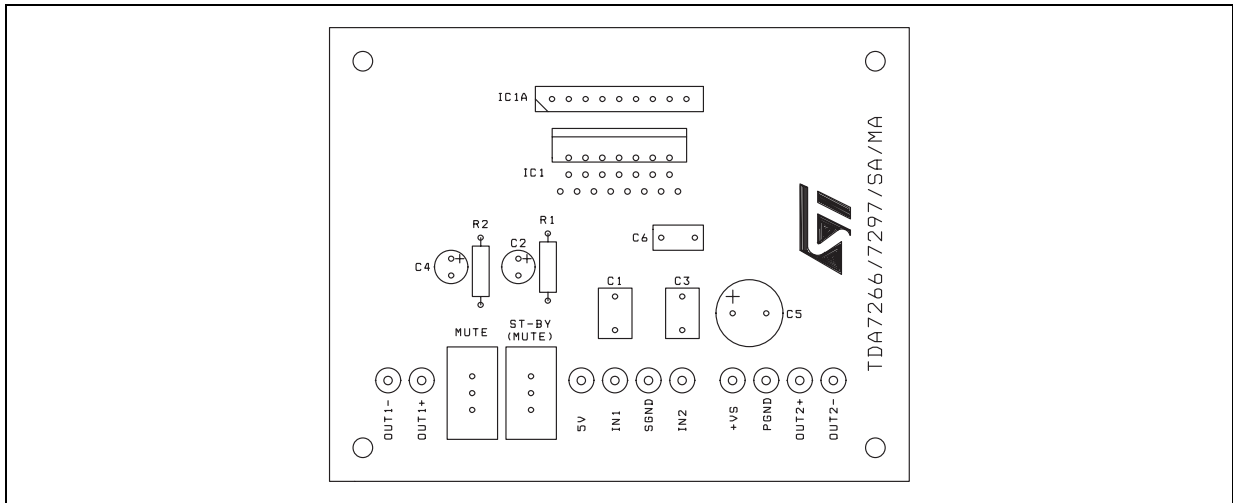


Figure 13. Evaluation Board Top Layer Layout

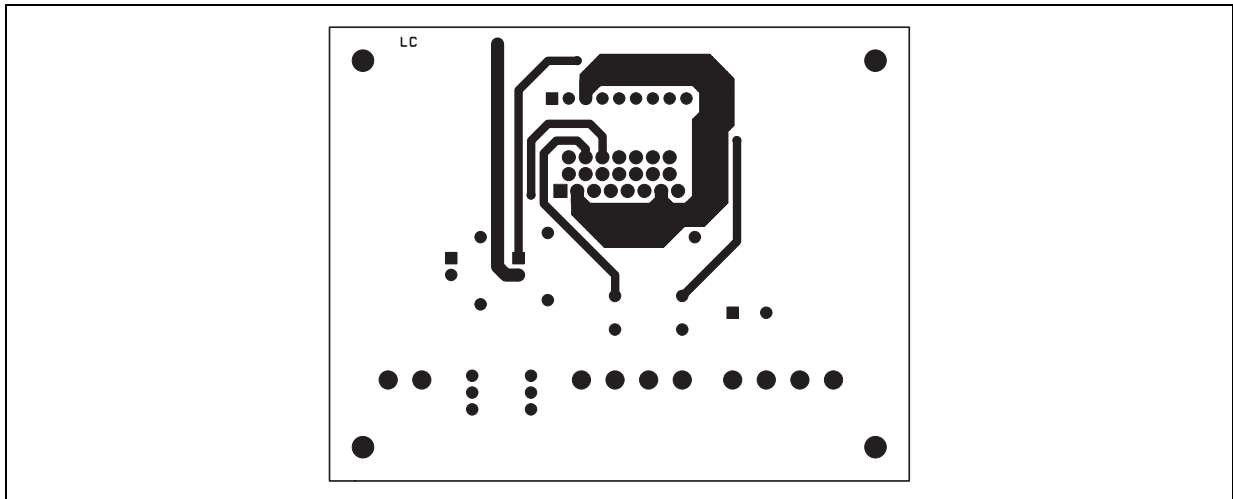
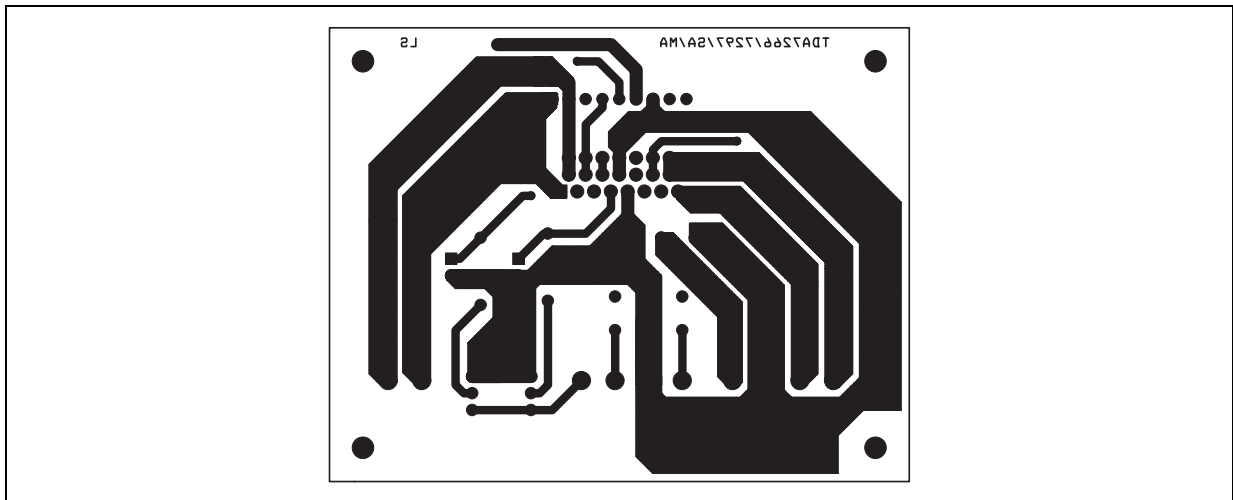


Figure 14. Evaluation Board Bottom Layer Layout



**HEAT SINK DIMENSIONING:**

In order to avoid the thermal protection intervention, that is placed approximatively at  $T_j = 150^\circ\text{C}$ , it is important the dimensioning of the Heat Sink  $R_{Th}$  ( $^\circ\text{C}/\text{W}$ ).

The parameters that influence the dimensioning are:

- Maximum dissipated power for the device ( $P_{dmax}$ )
- Max thermal resistance Junction to case ( $R_{Th\ j-c}$ )
- Max. ambient temperature  $T_{amb\ max}$
- Quiescent current  $I_q$  (mA)

Example:

$V_{CC} = 11\text{V}$ ,  $R_{load} = 80\text{ohm}$ ,  $R_{Th\ j-c} = 9\ ^\circ\text{C}/\text{W}$ ,  $T_{amb\ max} = 50^\circ\text{C}$

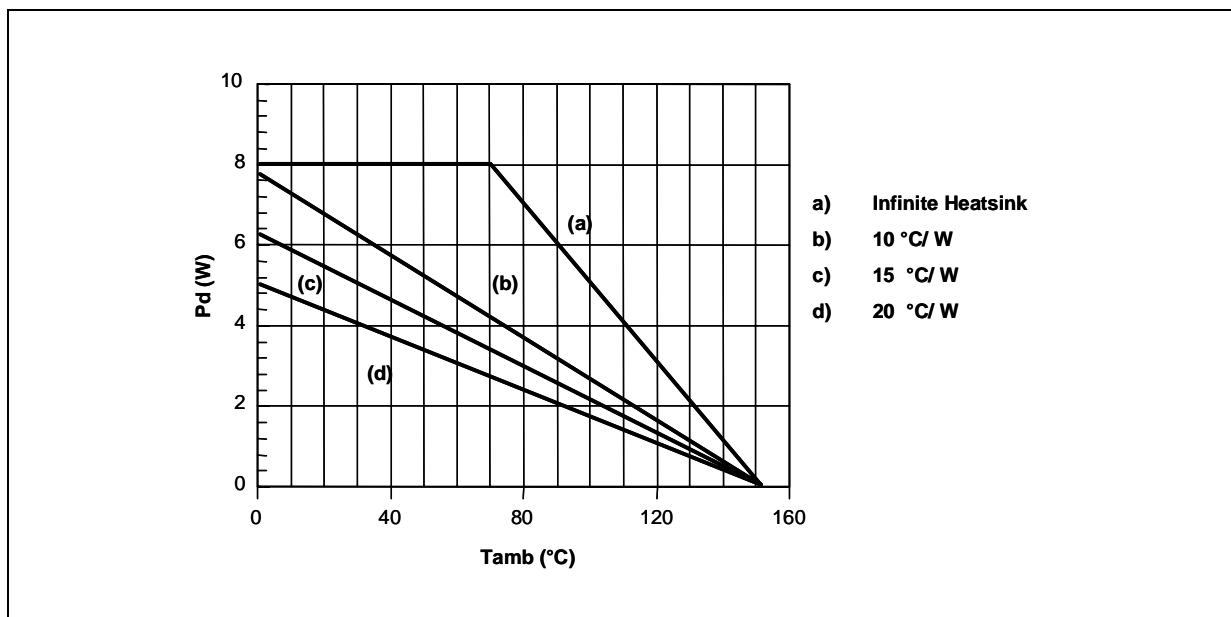
$$P_{dmax} = (N^\circ \text{ channels}) \cdot \frac{V_{CC}^2}{\Pi^2 \cdot \frac{R_{load}}{2}} + I_q \cdot V_{CC}$$

$$P_{dmax} = 1 \cdot (3) + 0.5 = 3.5\text{W}$$

$$(\text{Heat Sink}) R_{Th\ c-a} = \frac{150 - T_{amb\ max}}{P_{d\ max}} - R_{Th\ j-c} = \frac{150 - 50}{3.5} - 9 = 19.5^\circ\text{C}/\text{W}$$

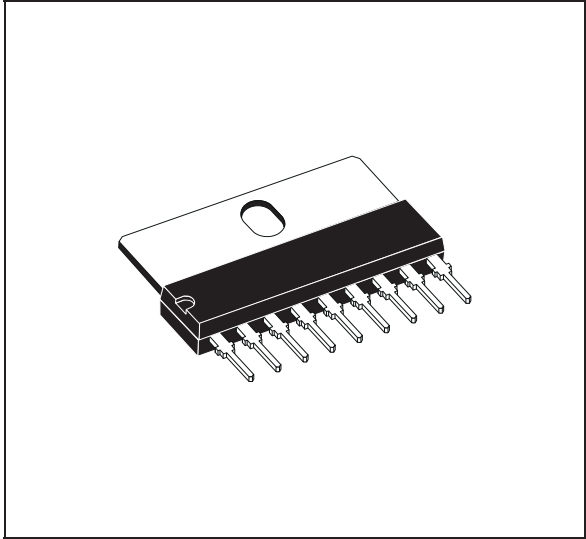
In figure 15 is shown the Power derating curve for the device.

**Figure 15. Power derating curve**

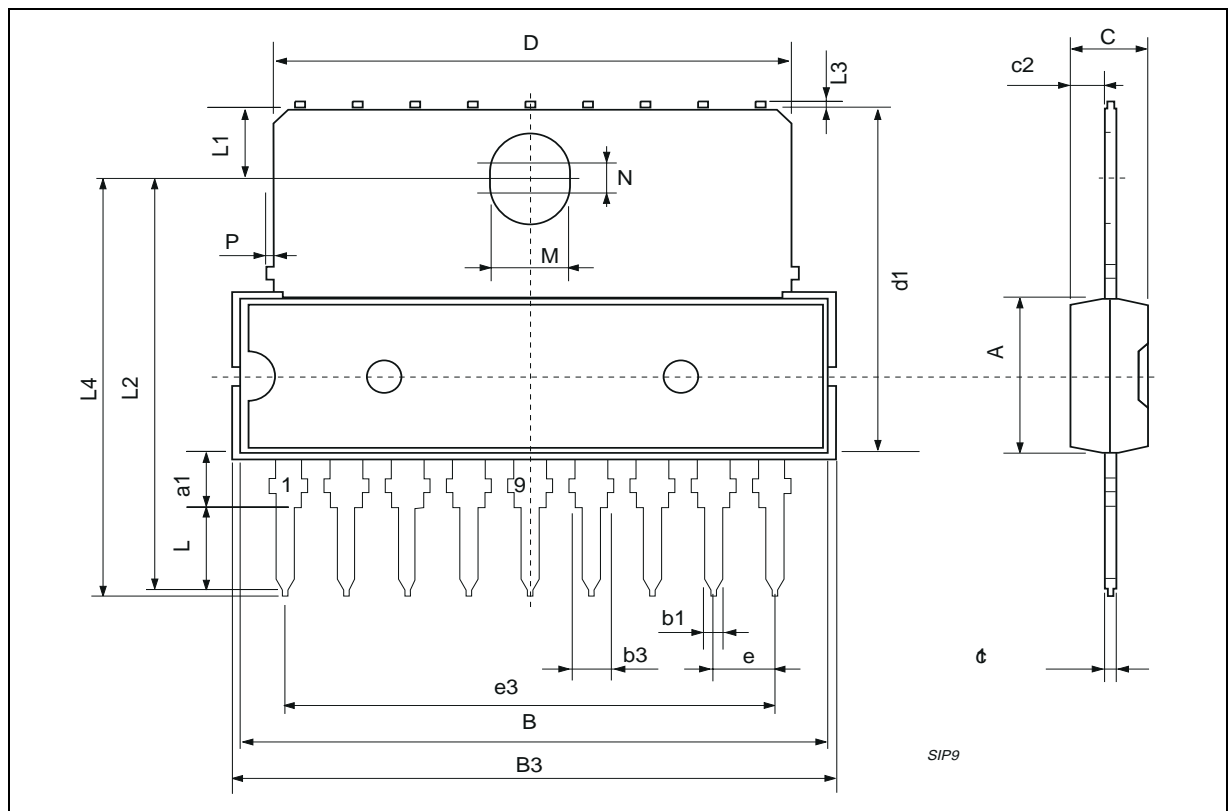


DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			7.1			0.280
a1	2.7		3	0.106		0.118
B			23			0.90
B3			24.8			0.976
b1		0.5			0.020	
b3	0.85		1.6	0.033		0.063
C		3.3			0.130	
c1		0.43			0.017	
c2		1.32			0.052	
D			21.2			0.835
d1		14.5			0.571	
e		2.54			0.100	
e3		20.32			0.800	
L	3.1			0.122		
L1		3			0.118	
L2		17.6			0.693	
L3			0.25			0.010
L4	17.4		17.85	0.685		0.702
M		3.2			0.126	
N		1			0.039	
P			0.15			0.006

**OUTLINE AND MECHANICAL DATA**



**SIP9**





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