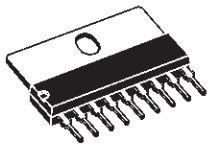
STA7056

3W MONO BRIDGE AMPLIFIER

PRODUCT PREVIEW

- NO EXTERNAL COMPONENTS
- NO POP AT TURN-ON/OFF
- LOW POWER CONSUMPTION
- SHORT CIRCUIT PROOF

BI20II TECHNOLOGY



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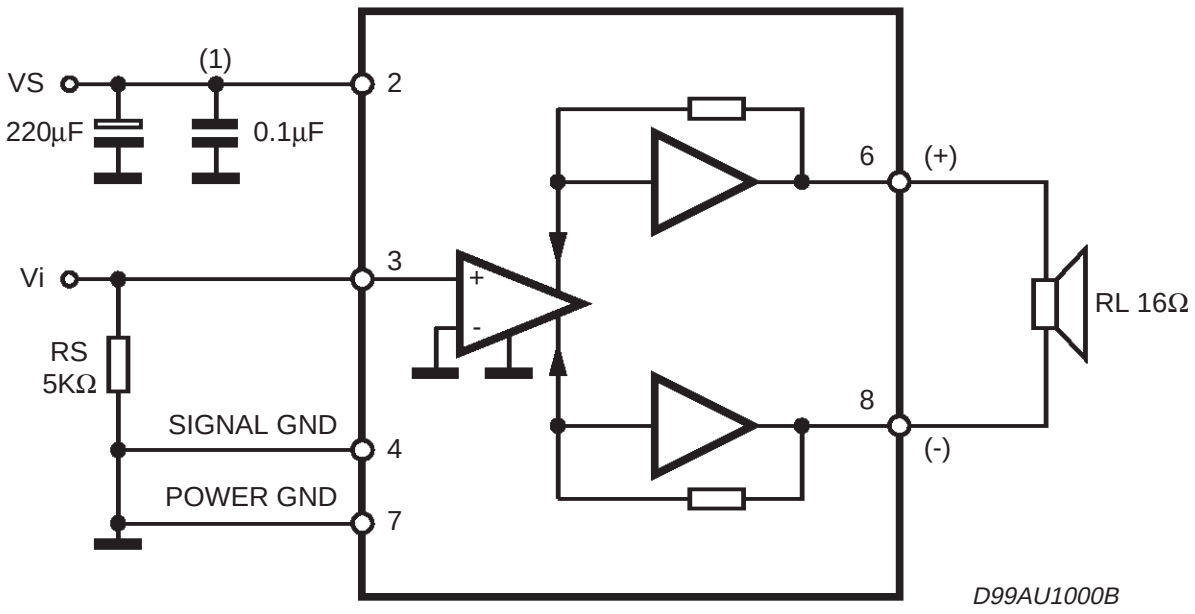
ORDERING NUMBER: STA7056

DESCRIPTION

The STA7056 is a mono Bridge Amplifier assembled in single in line 9 pins package.

The STA7056 is specially designed for battery fed portable recorders, radios and TV receivers.

BLOCK DIAGRAM

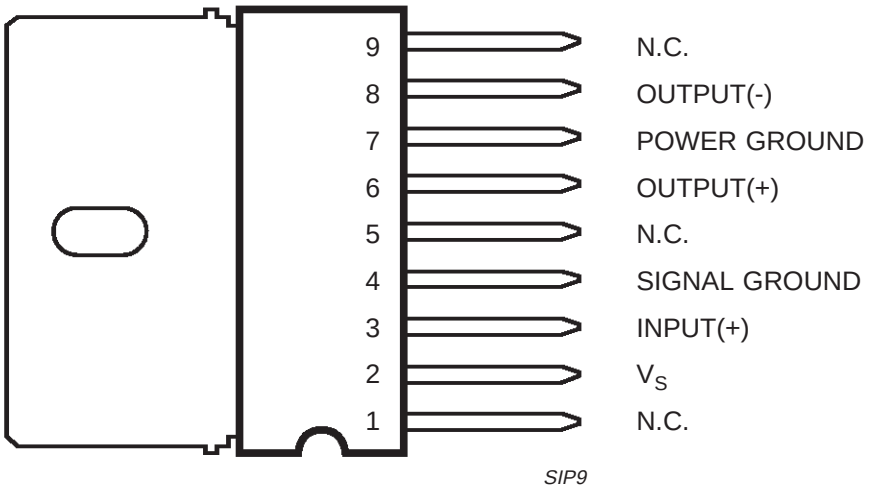


(1) This capacitor can be omitted if the supply electrolytic capacitor is placed closer to pin 2

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage	20	V
I_O	Output Peak current (repetitive f ≥ 20Hz)	1	A
I_O	Output Peak current (non repetitive t = 100µs)	1.5	A
P_{tot}	Total Power Dissipation (Tcase <70°C)	10	W
T_j, T_{stg}	Storage and Function Temperature	-40 to 150	°C
T_{sc}	Short Circuit Time (the load can be short circuited to all input conditions)	1	hr

PIN CONNECTION



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THERMAL DATA

Symbol	Parameter	Value	Unit
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	8	°C/W
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction-ambient	50	°C/W

Power Dissipation

Assume: V_S = 11V; R_L = 16Ω

The minimum sine-wave dissipation is $P_d\ max = \frac{V_S^2}{\pi^2 \cdot R_L/2} = 1.52W$

The Rth j - amb of the package is 50°C/W.

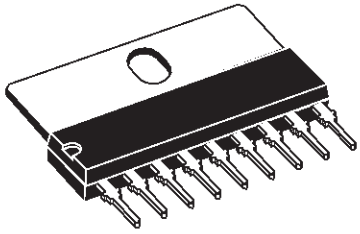
T amb (max) = 150 - 50 x 1.52 = 74°C

ELECTRICAL CHARACTERISTICS (Refer to the test circuit, V_S = 12V; R_L = 16Ω; R_S = 50Ω; f = 1KHz, T_{amb} = 25°C unless otherwise specified.)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_S	Supply Voltage		3		18	V
I_q	Total Quiescent Current	$R_L = \infty$		6	8	mA
		R_L = 16Ω		10	20	mA
I_O	Repetitive Peak Output Current				0.9	A
P_O	Output Power	THD = 10%; R_L = 16Ω	2.8	3.3		W
		THD = 10%; R_L = 8Ω		4.5		W
THD	Total Harmonic Distortion	P_O = 0.5W		0.25	1	%
G_v	Voltage Gain		39	40.5	42	dB
|Zin|	Input Impedance			100		KΩ
I_i	Input Bias Current			100	300	nA
ΔV_O	DC Output Offset Voltage	R_S = 5KΩ			250	mV
SVR	Supply Voltage Rejection	R_S = 0Ω; f = 100Hz to 10 KHz; Vr = 0.2V	36	50		dB
Vno	Noise Output Voltage	R_S = 5KΩ; f = 20Hz to 20 KHz;		180	300	μV

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



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