

Features

- Built-in brake function.
- Built-in diode to absorb surge currents.
- Low standby circuit current .
- Wide range of operating supply voltage (4.5~13.5V).
- Interfaces with the TTL logic.

Description

The AT5608 is a monolithic integrated circuit designed for driving bi-directional DC motor.

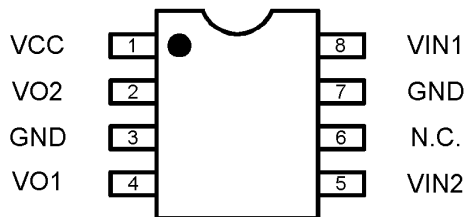
It has two pins of logic input for controlling the forward/reverse and braking, which can supply an output current of up to 100mA (typical) according to the logic control.

Applications

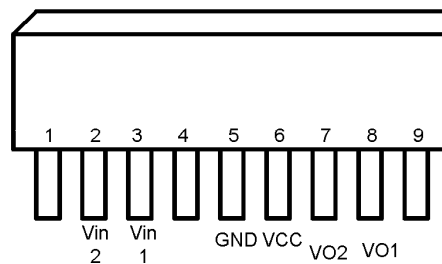
DVD and VCD player tray driver.

Pin Configuration

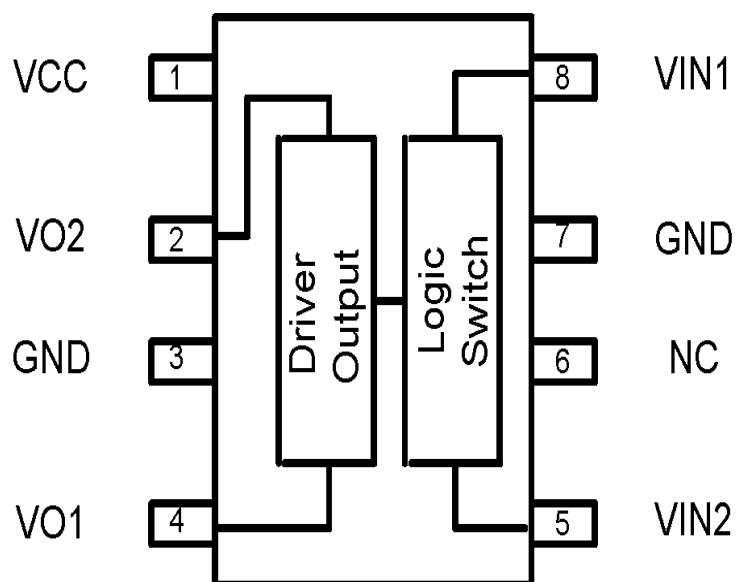
SO8



SIP9



Circuit Configuration



Pin Descriptions

Pin No.		Pin name	Function
SO8	SIP9		
1	6	VCC	Power supply
2	7	VO2	Motor output2
3	5	GND	GND
4	8	VO1	Motor output1
5	2	VIN2	Logic input2
6	1,4,9	N.C.	N.C.
7	5	GND	GND
8	3	VIN1	Logic input1

Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	unit
Power supply voltage	V _{CC}	13.5	V
Power dissipation	P _d	450*	mW
Operating temperature	T _{opr}	-20~+60	°C
Storage temperature	T _{stg}	-55~+125	°C
Maximum output current	I _{OUT}	500	mA

* Reduce by 13.5 mW for each increase in T_a of 1°C over 25°C.

Recommended operating conditions (Ta = 25°C)

Parameter	Symbol	Limits	unit
Power supply voltage	V _{CC}	4.5~12	V

Input truth table

VIN1(8pin)	VIN2(5pin)	VO1(4pin)	VO2(2pin)
H	L	H	L
L	H	L	H
H	H	L	L
L	L	OPEN	OPEN

*:HIGH level input is 2.0V or more

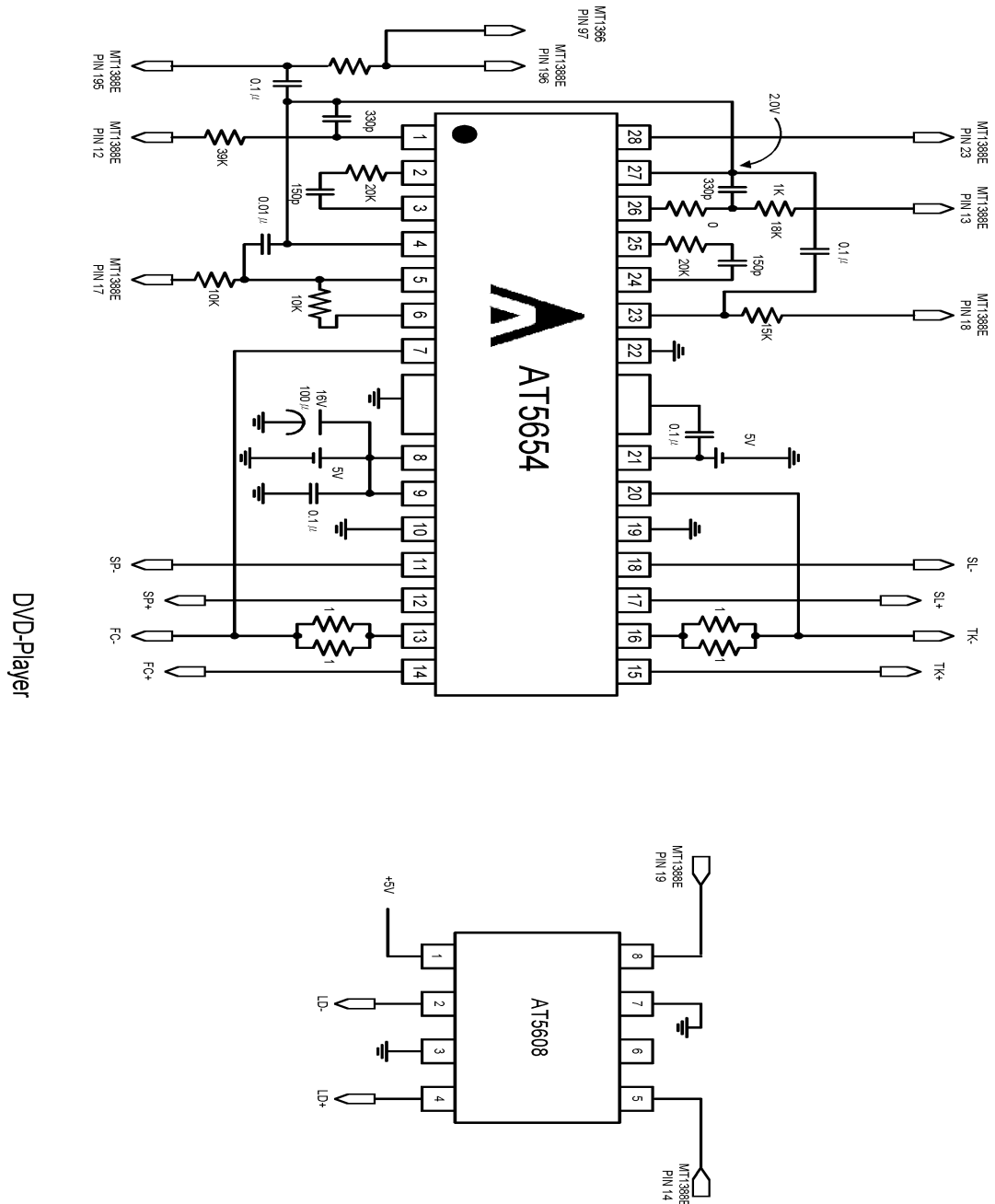
LOW level input is 0.8V or less.

Electrical characteristics (unless otherwise noted, Ta = 25°C and V_{CC} = 9V)

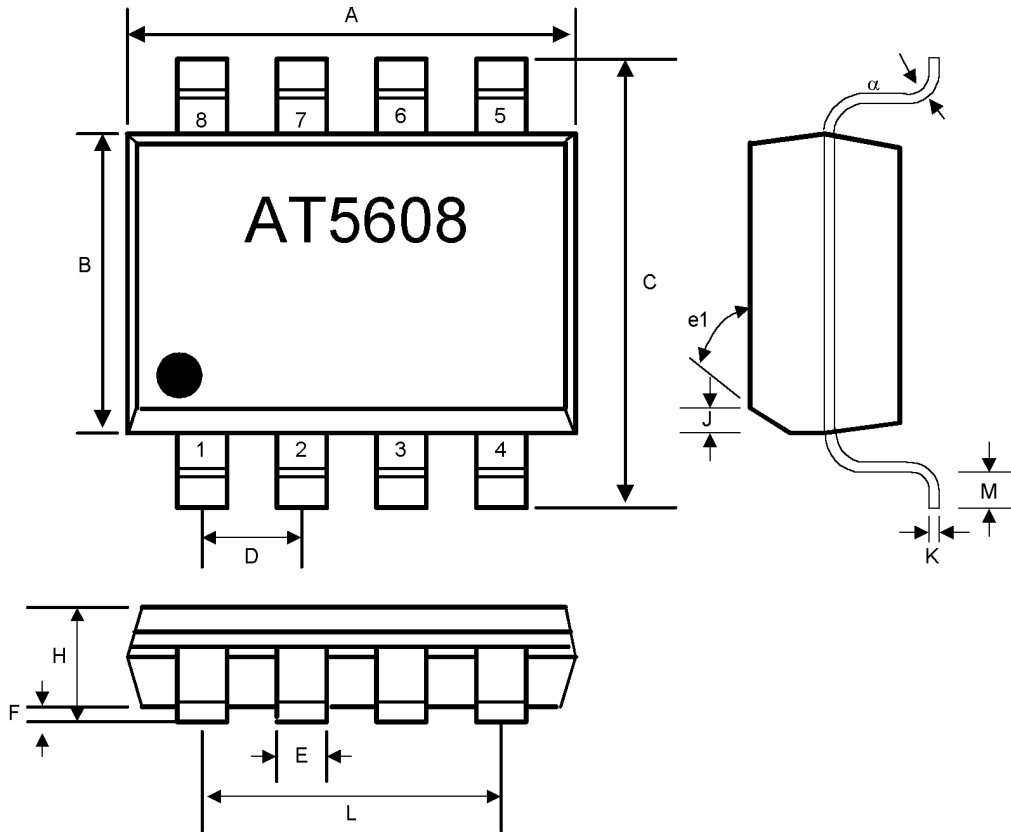
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Standby supply current	I _{ST}	-	-	0.4	mA	When inputs VIN1 and VIN2 are both "L" level
Output current	I _O	200	-	-	mA	
Output saturation voltage	V _{CE}	-	-	1.7	V	I _O =100mA
Input high level voltage	V _{IH}	2.0	-	-	V	
Input high level voltage	V _{IL}	-	-	0.8	V	
Input high level current	I _{IH}	-	-	400	μA	V _{IH} =4.5V

A diode that absorbs at least 500 mA is built in to give protection against surge currents with a pulse width of 10 ms and a duty ratio of 10% or less.

Application Circuit

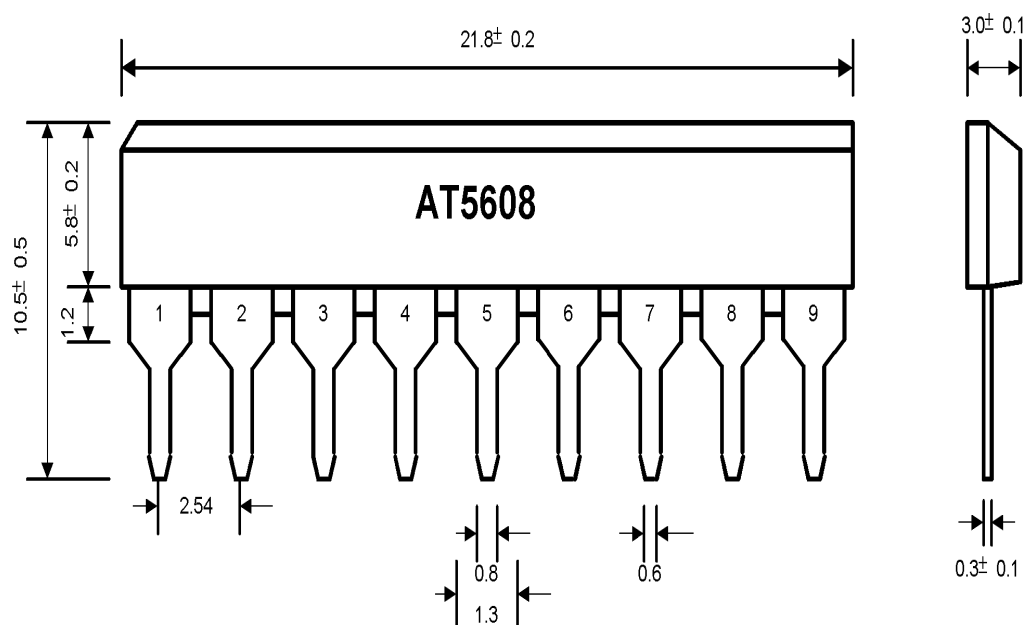


Package Outline SOP-8



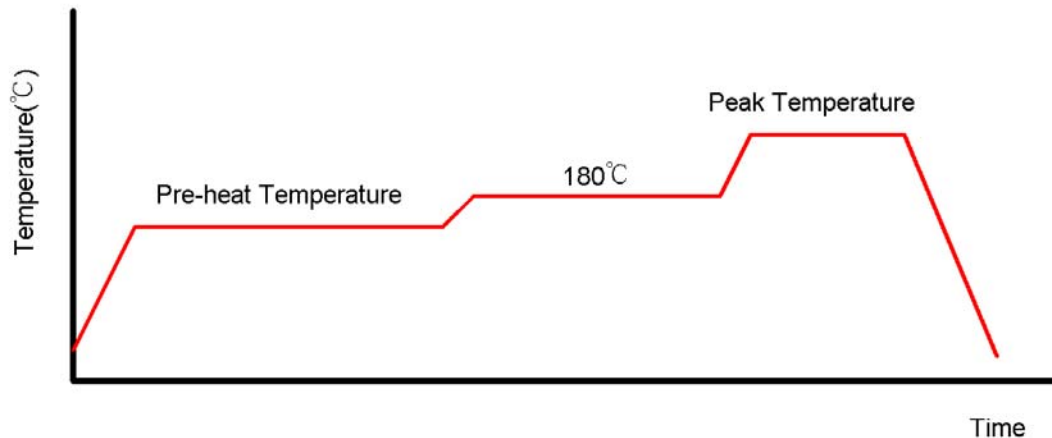
SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	0.188	0.197	4.80	5.00	-
B	0.149	0.158	3.80	4.00	-
C	0.228	0.244	5.80	6.20	-
D	0.050 BSC		1.27 BSC		-
E	0.013	0.020	0.33	0.51	-
F	0.004	0.010	0.10	0.25	-
H	0.053	0.069	1.35	1.75	-
J	0.011	0.019	0.28	0.48	-
K	0.007	0.010	0.19	0.25	-
M	0.016	0.050	0.40	1.27	-
L	0.150 REF		3.81 REF		-
e1	45°		45°		-
α	0°	8°	0°	8°	-

Package Outline SIP-9



Reflow Condition (IR/Convection or VPR Reflow)

Reference JEDEC Standard J-STD-020A



Classification Reflow Profiles

	Convection or IR/Convection	VPR
Average Heating Rate(180°C to peak)	5°C/second max.	10°C/second max.
Preheat Temperature(125±20°C)	120 seconds max.	
Temperature maintained above 180°C	10~150 seconds	
Time within 5°C of actual Peak Temperature	10~20 seconds	60 seconds
Peak Temperature Range(Note 1)	219~225°C or 235~240°C	219~225°C or 235~240°C
Cooling Rate	6°C /second max.	10°C/second max.
Time 25°C to Peak Temperature	6 minutes max.	

*1 The maximum peak temperatures for IR and VP reflow are depending on package dimensions.

Package Reflow Conditions

Pkg. Thickness ≥2.5mm and all bags	Pkg. Thickness <2.5mm and Pkg. Volume ≥350 mm ³	Pkg. Thickness <2.5mm and Pkg. Volume <350 mm ³
Convection 219~225°C		Convection 235~240°C
VPR 219~225°C		VPR 235~240°C
IR/Convection 219~225°C		IR/Convection 235~240°C