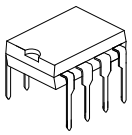
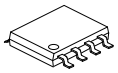
DESCRIPTION

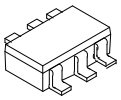
WD6208 is a special integrated circuit designed for controlling and driving bidirectional motor. The input of the circuit is compatible with TTL / CMOS level and has good anti-interference performance; the internal logic control circuit can control the bidirectional Magda forward rotation, reverse rotation and braking; the power tube of the circuit can pass a typical continuous current of 100mA; the clamp diode built in the circuit can release the reverse impact current of inductive load.



DIP-8-300-2.54



SOP-8-225-1.27



SOT-23-6L

FEATURES

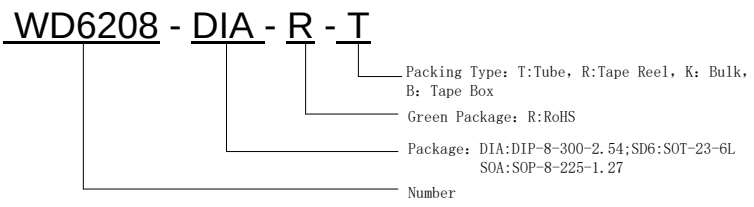
* Low static working current
* Wide power supply voltage range: 4.5v-15v
* Continuous current output capacity of each channel (Typical value: 100mA)
* Lower saturation voltage drop
* The output has four states of forward rotation, reverse rotation, braking and high resistance
* TTL / CMOS output level is compatible and can be connected to CPU directly
* Output built-in clamp diode, suitable for inductive load
* Control and drive are integrated into a single IC
* With pin high voltage protection function
* Antistatic capacity: 4000V(HBM)
* Operating temperature range: -40℃～+85℃

APPLICATION

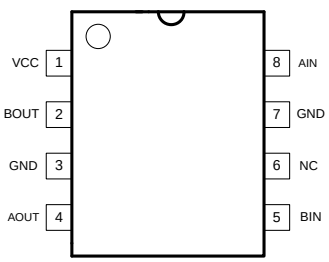
* Bidirectional motor
* IR-CUT driver

ORDERING INFORMATION

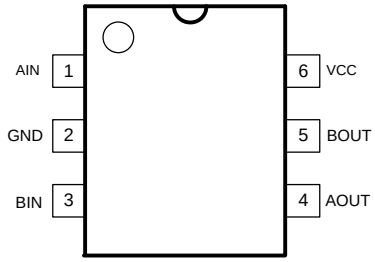
Ordering Number	Package	Print Number	Free	Packing
WD6208-DIA-R-T	DIP-8-300-2.54	WD6208	RoHS	Tube
WD6208-SOA-R-T	SOP-8-225-1.27	WD6208	RoHS	Tube
WD6208-SOA-R-R	SOP-8-225-1.27	WD6208	RoHS	Tape Reel
WD6208-SD6-R-R	SOT-23-6L	WD6208	RoHS	Tape Reel



PIN DEFINITION



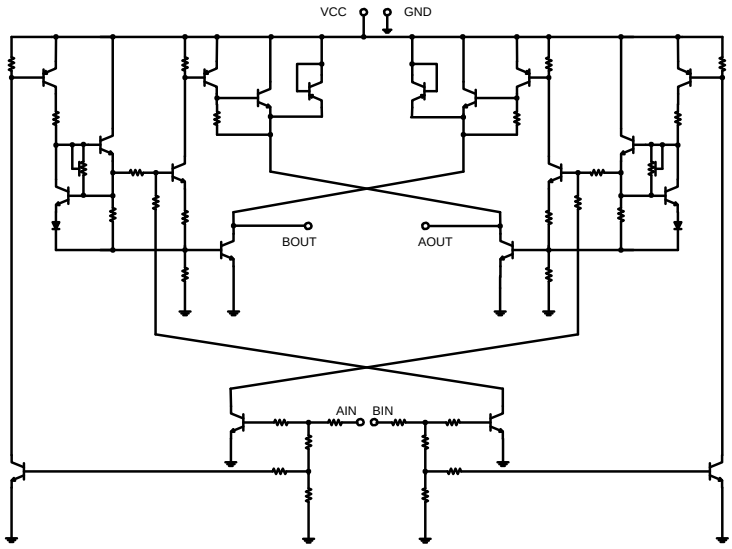
SOP8/DIP8



SOT-23-6L

Name	I / O	Function description
Vcc	-	supply voltage
BOUT	O	B output pin
GND	-	Earthing
AOUT	O	A output pin
BIN	I	B input pin
NC	-	NC
GND	-	Earthing
AIN	I	A input pin

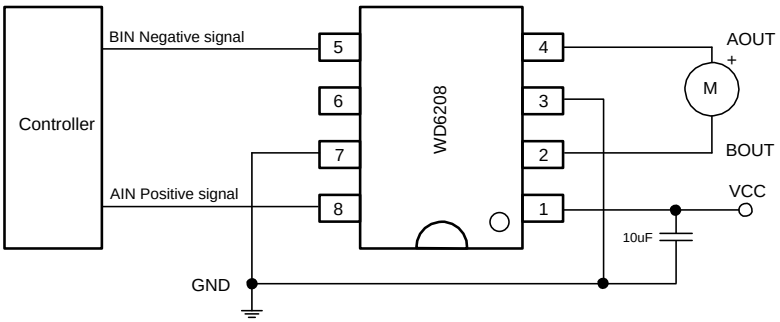
BLOCK DIAGRAM



LOGIC TRUTH TABLE

AIN	BIN	AOUT	BOUT
H	L	H	L
L	H	L	H
L	L	Z (High resistance)	Z (High resistance)
H	H	L (brake)	L (brake)

APPLICATION CIRCUIT DIAGRAM



ABSOLUTE MAXIMUM RATINGS(Ta=25℃,Unless otherwise specified)

Characteristic	Symbol		MIN.	TYP.	MAX.	Unit
Supply voltage	Vcc		4.5	12	18	V
Peak output current	IMax				0.5	A
Input high level	VHIN		1.5		Vcc	V
Input low level	VLIN				0.7	V
θJA Package thermal impedance (1)	θJA	SOP-8-225-1.27			160	℃/W
		DIP-8-300-2.54			100	
		SOT-23-6L			220	
Maximum working junction temperature	TJ				150	℃
welding temperature					260	℃, 10S
Storage temperature range	Tstg				150	℃

Notes:

(1) The maximum power consumption can be calculated according to the following relationship $P_D = (T_J-T_A)/ \theta_{JA}$
T_J represents the junction temperature of the circuit, and T_A represents the ambient temperature of the circuit.
The calculation method of package thermal resistance is in accordance with JESD 51-7.

RECOMMENDED WORKING CONDITIONS (Ta=25℃,Unless otherwise specified)

Characteristic	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Supply voltage	Vcc		4.5		15	V
Continuous output current	I_{OUT}	Vcc=12V			0.1	A
Operating temperature range (1)	T_A		-40		85	℃
Power consumption (2)	P_D	SOP-8-225-1.27			625	mW
		DIP-8-300-2.54			1250	
		SOT-23-6L			600	

Notes(1). T_A Indicates the ambient temperature of the circuit

(2).The calculation method of circuit power consumption is

$P_D=I_{OUT}\times V_{O(sat)}+(IVcc-I_{OUT})\times Vcc+V_{IA}\times I_{IA}+V_{IB}\times I_{IB}$

I_{OUT} represents the output current of the circuit, that is, the current of the drive motor; $V_{O\ (SAT)}$ Indicates the output saturation voltage drop of the circuit; I_{VCC} Indicates the current flowing into the Vcc at the power supply end; Vcc represents the voltage of Vcc at the power supply end; V_{IA} and V_{IB} represent the input voltage of AIN and BIN respectively; I_{IA} and I_{IB} represent the input current of AIN and BIN respectively;

In order to make the circuit work safely and normally, it is necessary to ensure that the power consumption of the circuit is within the allowable range.

ELECTRICAL CHARACTERISTICS (V_{CC}=12V, Ta=25℃,unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units
Quiescent current	I_Q	V_{AIN}=0, V_{BIN}=0		0.1	2.0	uA
Working current)	I_{VCC}	V_{AIN}=5V or V_{BIN}=5V No load		22		mA
Input current	I_{IN}	V_{AIN}=5V, V_{BIN}=5V		500	700	uA
Output saturation voltage drop (2)	$V_{O(sat)}$	I_{OUT}=100mA		1.0	1.2	V
Continuous output current	I_{OUT}		0.2			A
Peak output current	I_{max}	Vcc=12V			0.5	A

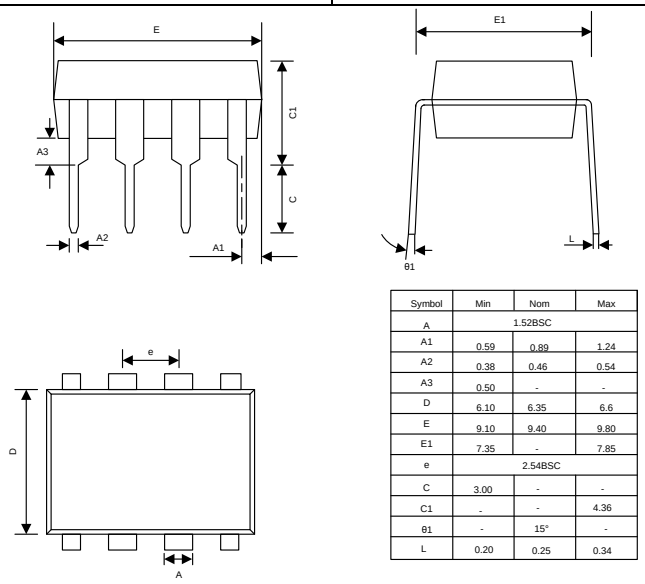
Notes:

(1) The working current is the current consumed inside the circuit at no load. The greater the working current is, the greater the power consumption inside the circuit itself is. The calculation formula of power consumption is: $P_{DD}= I_{VCC}\times Vcc$;

(2) The output saturation voltage is the supply voltage minus the voltage at both ends of the motor, that is, $V_{O(SAT)}$ = Vcc-V_M (voltage at both ends of the motor). The larger the saturation voltage is, the greater the power consumption of the circuit itself is. $P_D=I_{OUT}\times V_{O(SAT)}$

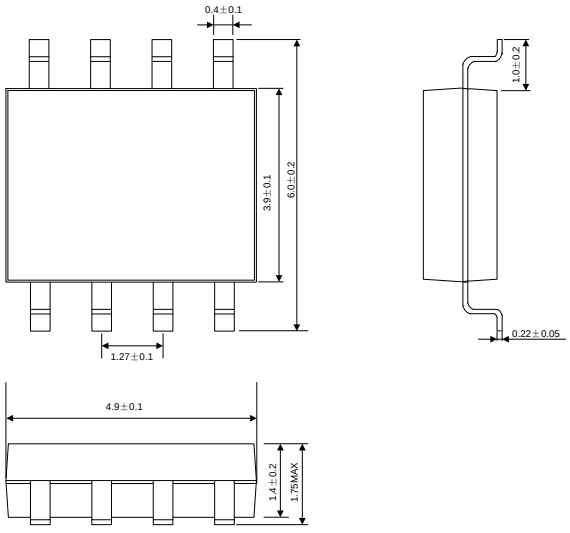
PACKAGE OUTLINE

DIP-8-300-2.54 UNIT：mm



Symbol	Min	Nom	Max
A		1.52BSC	
A1	0.59	0.89	1.24
A2	0.38	0.46	0.54
A3	0.50	-	-
D	6.10	6.35	6.6
E	9.10	9.40	9.80
E1	7.35	-	7.85
e		2.54BSC	
C	3.00	-	-
C1	-	-	4.36
θ1	-	15°	-
L	0.20	0.25	0.34

SOP-8-225-1.27 UNIT：mm



SOT-23-6L	UNIT：mm