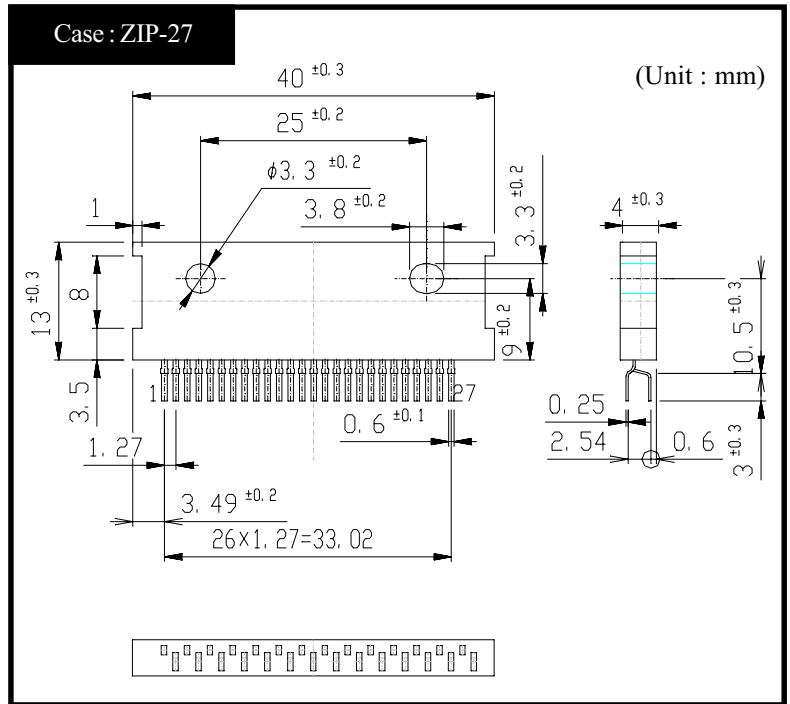


MTD1120

FEATURES

- Constant-current chopping function
(Off time fixed, self-oscillation)
- 4-phase input
(with inhibit for simultaneously turn ON)
- Built-in flywheel diodes

OUTLINE DIMENSIONS



RATINGS

● Absolute Maximum Ratings $T_a=25^\circ\text{C}$

Item	Symbol	Ratings	Unit
Output Voltage	$V_{CEO(SUS)}$	80	V
Output Current	I_O	1.2	A
Logic Supply Voltage	V_{CC}	0 to 7	V
Logic Input Voltage	V_{IN}	0 to V_{CC}	V
Total Power Dissipation	P_T	5	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to 150	$^\circ\text{C}$

● Electrical Characteristics $T_a=25^\circ\text{C}$

Item	Symbol	Test Conditions	min.	typ.	max.	Unit
Output Saturation Voltage	$V_{CE(sat)}$	$I_o=0.9A$		1.1	1.4	V
Output Leakage Current	I_{CER}	$V_{CER}=80V$			10	μA
Logic Supply Current	I_{CC}	$V_{CC} = 5V$		30	70	mA
Input High Voltage	V_{INH}	$V_{CC} = 5V$	2.3		V_{CC}	V
Input Low Voltage	V_{INL}	$V_{CC} = 5V$	GND		1.0	V
Logic High Input Current	I_{INH}	$V_{CC} = 5V, V_{IN}=5V$			10	μA
Logic Low Input Current	I_{INL}	$V_{CC} = 5V, V_{IN}=0V$		-10	-50	μA
Reference Input Current	I_{ref}	$V_{CC} = 5V, V_{ref}=0V$		-1	-50	μA
Input Current(Current Sensor)	I_{sense}	$V_{CC}=5V, V_S=0V$		-1	-50	μA
Maximum Sensing Voltage	$V_S(max.)$	$V_{CC}=5V$			1.0	V

●Setting of Output Current and Fixed Off Time

Fig.1 shows constant current chopping wave form.

Output Current setting

$$I_o = \frac{R_2}{R_1+R_2} \cdot \frac{V_{CC}}{R_s}$$

Fixed Off Time Setting

$$T_{off} = 0.69 \cdot C_t \cdot R_t$$

●True Table

IN A or B	IN \bar{A} or \bar{B}	Out A or B	Out \bar{A} or \bar{B}
L	L	OFF	OFF
L	H	OFF	ON
H	L	ON	OFF
H	H	OFF	OFF

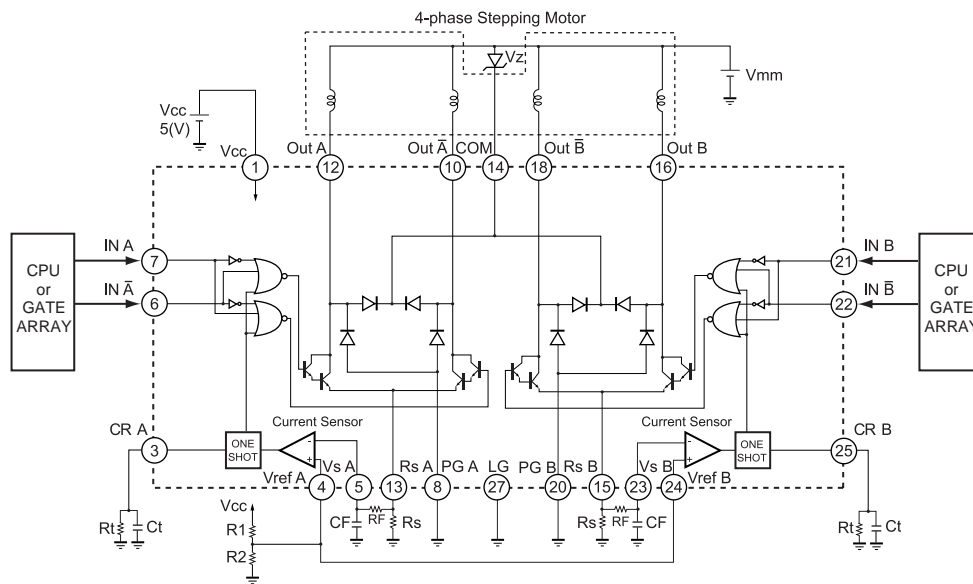
●Recommended Parts Value

Symbol	Recommended Value	Unit
R_s	0.68	Ω
R_F	1	$k\Omega$
C_F	3300	pF
R_t	8.2	$k\Omega$
C_t	3300	pF
V_z	$V_{mm} \times 1.2$ to 1.5	V
R_1+R_2	<10	$k\Omega$

●Recommended Operating Conditions (Ta=25°C)

Item	Symbol	min.	typ.	max.	Unit
Motor Supply Voltage	V_{mm}			32	V
Output Voltage	V_{OUT}			70	V
Output Current	I_o			0.9	A
Output Emitter Voltage	V_E			1.0	V
Logic Supply Voltage	V_{CC}	4.75		5.25	V
Chopping Frequency	f_{chop}		20	27	kHz
Operating Temperature	Top	-25		120	°C

Equivalent Circuit / Basic Application Circuit



Pin Assignment

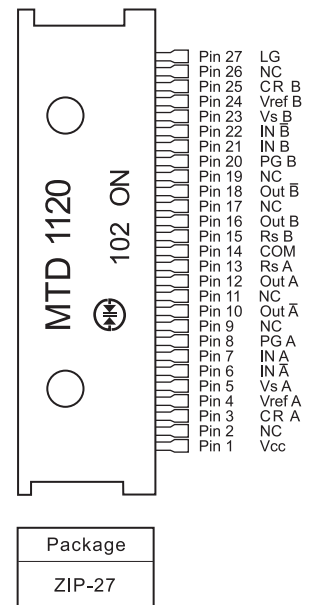


Fig.1 Constant current wave form (Motor current)

