TA7248P

DC MOTOR DRIVER

The TA7248P is a DC motor (3 phase) driver IC.
It contains regulator, position sensing amplifiers, control amplifier, quick stop circuit and drivers. Maximum output current (Bi-direction) of driver is ±900mA (average).
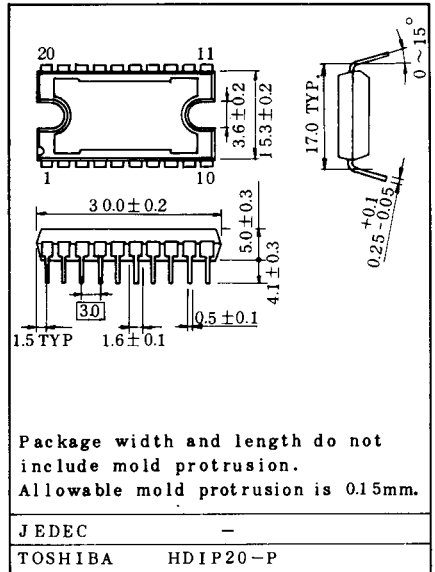Hall element is used as a position sensor.
By combining this IC and TA7674P (or TA7715P) F-servo motor driver system is available.

FEATURES:

. Driver for Hall Motor (3 phase)
. Large Output Current (Bi-direction)
: $I_O=\pm900mA$ (average)
. Built-in Reverse Rotation Detector and Quick Stop Circuit.
. Regulator for External Circuits
: $V_{OUT}=10.7V$, $I_O=50mA$
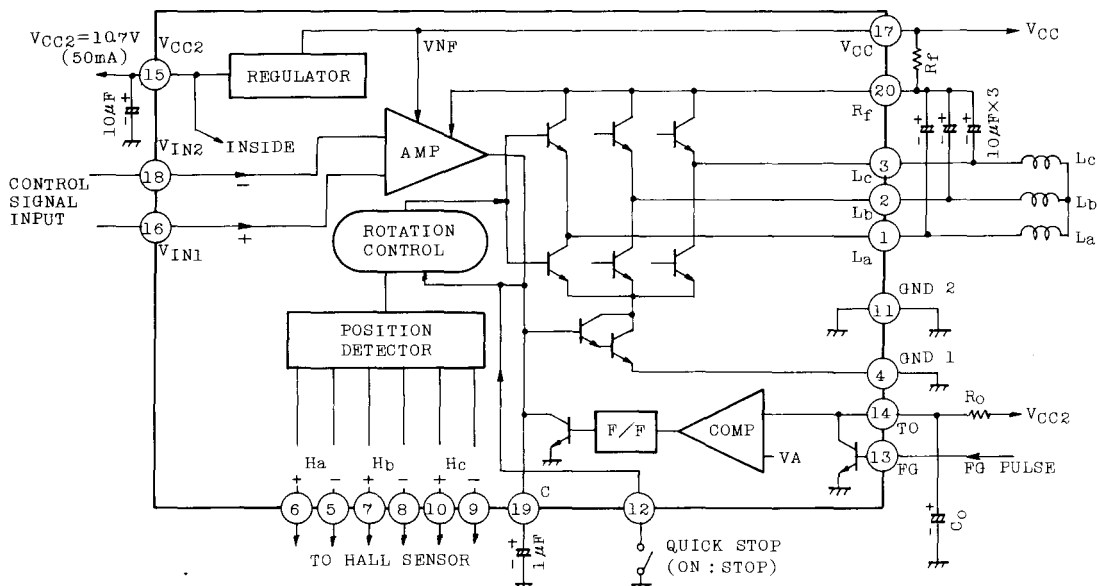. Operating Supply Voltage : $V_{CC}=16\sim32V$

Unit in mm

Package width and length do not include mold protrusion.
Allowable mold protrusion is 0.15mm.

JEDEC	—
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MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	35	V
Output Current	I_O	900	mA
Regulator Output Current	I_{CC2}	50	mA
Power Dissipation (Note)	P_D	25	W
Operating Temperature	T_{opr}	$-15\sim75$	°C
Storage Temperature	T_{stg}	$-55\sim150$	°C

Note : Tc=75°C, P_D=3W(Max.) at no heat sink (Ta=25°C).

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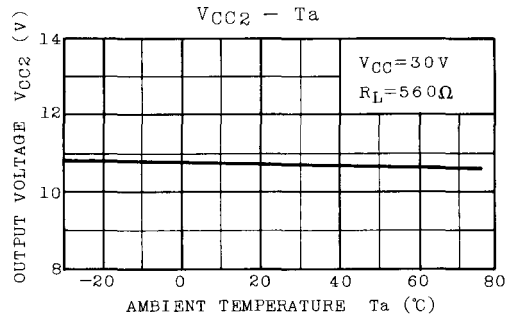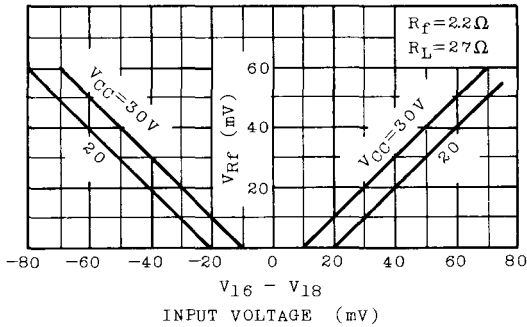
TA7248P

BLOCK DIAGRAM
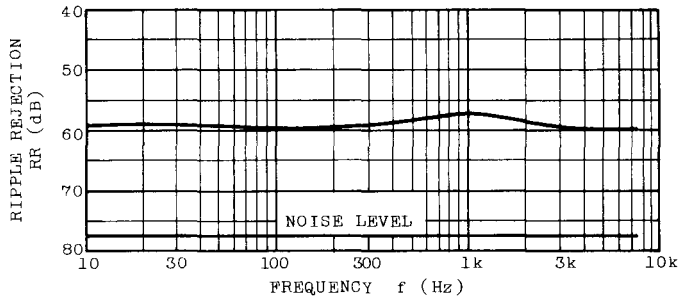

ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, $V_{CC}=30V$, $R_L=27\Omega$, $R_f=2.2\Omega$, $Ta=25°C$)

CHARACTERISTIC		SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current		I_{CC}	1	–	5.5	–	13	mA
Input Offset Voltage		V_{IO}	2		–9	–	95	mV
Input Dead Band		V_{ID}	2	$V_{IN2}=3.5V$	22	–	190	mV
Residual Output Voltage		V_{OR}	2		–	–	10	mV
Voltage Gain		G_V	2		0.8	–	1.2	
Saturation Voltage	Upper	V_{SAT1}	3	$V_{IN1}=4.5V$, $V_{IN2}=3.5V$	–	–	2.1	V
	Lower	V_{SAT2}			–	–	3.8	
Cut-off Current	Upper	I_{OC1}	4	$V_{IN1}=4.5V$, $V_{IN2}=3.5V$ $R_L=100k\Omega$	–	–	15	μA
	Lower	I_{OC2}			–	–	15	
To Threshold Voltage		V_{TO}	5	–	6.2	–	7.3	V
To Saturation Voltage		$V_{SAT\ TO}$	5	$R_L=6k\Omega$	–	–	2	V
Output Voltage		V_{CC2}	6	$R_L=560\Omega$	10.2	10.7	11.2	V
Load Regulation Voltage		ΔV_{CC2}	6	$R_L=560\Omega\sim\infty$	–	–	60	mV
Ripple Rejection		RR	6	$R_L=560\Omega$, $f=1kHz$	50	–	–	dB
Temperature Coefficient		$Tc\ V_{CC2}$	6	$R_L=560\Omega$	–2	–	2	mV/deg

INPUT OUTPUT CHARACTERISTICS

$R_f = 2.2\,\Omega$
$R_L = 27\,\Omega$

V_{Rf} (mV)

$V_{CC} = 30\,V$

20

$V_{CC} = 30\,V$

20

$V_{16} - V_{18}$

INPUT VOLTAGE (mV)

$V_{CC2} - Ta$

OUTPUT VOLTAGE V_{CC2} (V)

$V_{CC} = 30\,V$
$R_L = 560\,\Omega$

AMBIENT TEMPERATURE   Ta (℃)

$RR - f$

RIPPLE REJECTION
RR (dB)

NOISE LEVEL

FREQUENCY   f (Hz)

$Z_O - f$

OUTPUT IMPEDANCE Z_O (Ω)
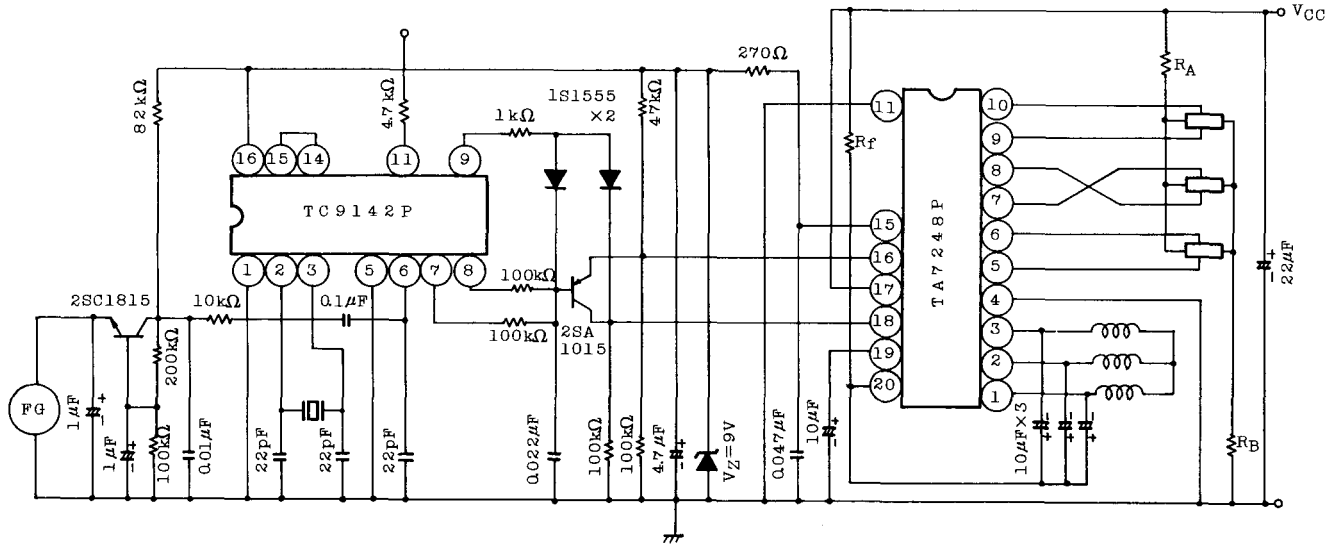
FREQUENCY   f (Hz)

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APPLICATION CIRCUIT

R$_A$ and R$_B$ should be determined by characteristic of hall sensor.