M56638AFP

3-PHASE BRUSHLESS MOTOR CONTROLLER

DESCRIPTION

M56638AFP is a semiconductor integrated circuit designed for a single chip controller for FDD spindle motor, consisting of Power amplifier, Hall amplifier, FG amplifier, oscillator and speed discriminator and various protection circuits.

The devices include an index circuit output (MMout) signal that is Normally High.

FEATURES

- High-accuracy, high-stability and adjustment free controller is possible by digital servo
- Speed switch of 1:1.2:2 possible
- Damping condencer can be low capacitance
- Including index circuit with monostable-multivibrator
- Single supply voltage action (5V) is possible.

APPLICATION

FDD spindle motor (VCC = 5V, 3.5")

RECOMMENDED OPERATING CONDITIONS

- Supply voltage 5V
- Oscillating frequency 492kHz
- Maximum output current 800mA
- FG amplifier
  Load resistance 100k
  Input signal level 5 or above mVp-p

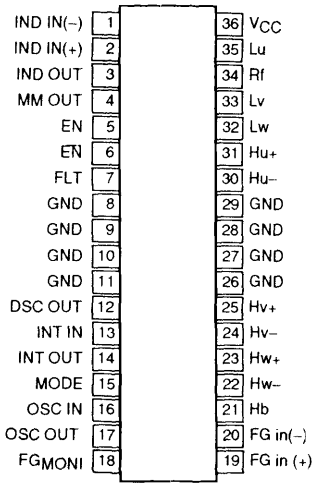
FUNCTIONAL DESCRIPTION

M56638APF is a semiconductor integreted circuit designed for a single chip controller for FDD spindle motor.

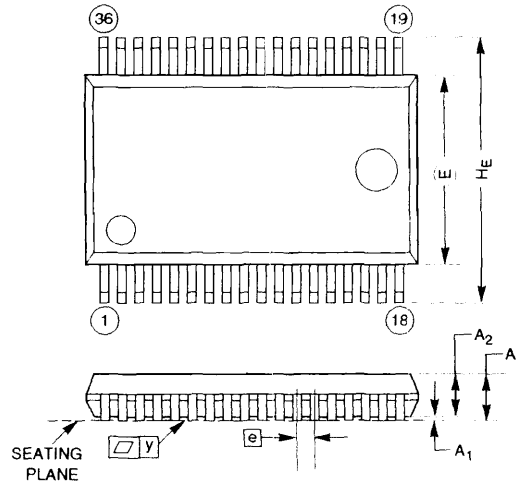
Motor servo loop is consisted by DSC (discriminator) form.

When the crystal is connected to OSC circuit (⑯ - ⑰ pins) or the external clock directory input to ⑯ pin, the discriminator output 3 mode speed a ⑫ pin.

PIN CONFIGURATION (TOP VIEW)



36 PIN SOP



Symbol	Dimension in inches		
	Minimum	Normal	Maximum
A	0.079	0.087	0.094
A_1	0.002	—	—
A_2	—	0.079	—
b	0.014	0.016	0.020
c	0.005	0.006	0.008
D	0.583	0.591	0.598
E	0.323	0.331	0.339
e	—	0.031	—
H_E	0.458	0.470	0.481
L	0.012	0.020	0.026
L_e	—	0.070	—
y	—	—	0.006
θ	0°	—	10°

BLOCK DIAGRAM