aMC8520

SINGLE PHASE VARIABLE SPEED ADVANCED FAN CONTROLLER

Preliminary Specification – Subject to change without notice

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Product Description

The aMC8520 is a full featured single phase brushless DC motor controller that contains all the required functions for an economical closed loop motor control solution that fulfills the balanced technology extended (BTX) requirements allowing a significant reduction of acoustic noise generation. Unique features of this device are a pulse width modulation (PWM) speed control input that is compatible with industry standard digital temperature monitors, thermistor input with adjustable gain and minimum temperature response threshold for temperature monitoring, programmable high and low temperature maximum RPM, programmable minimum RPM, current output error amplifier for easy control loop compensation. Additional features include a latching PWM for enhanced noise immunity, integrated fault timer with auto start retry, adaptive motor start timer to insure start up, combined frequency generator / rotor lock output, Hall amplifier with propriety noise immunity circuitry for proper drive sequencing, compatibility with differential non-buffered and buffered sensors, pinned out reference for Hall and circuit bias, fixed non-overlapping commutation delay for reduced power supply current spiking, two 40 V open drain top drivers, two 100 mA complementary MOSFET bottom drivers, programmable cycle-by-cycle current limiting, under voltage lockout and thermal shutdown protection, and an internal shunt regulator for use with higher voltage motors.



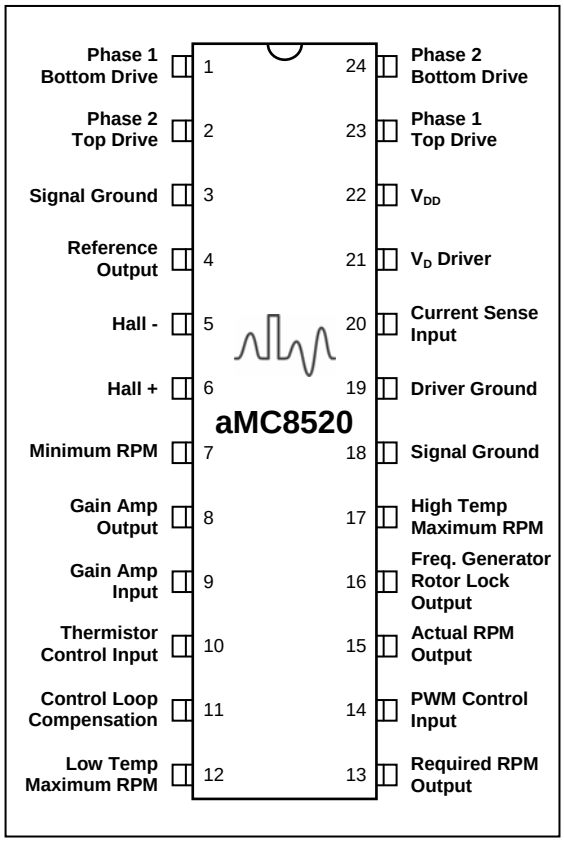
Features

- PWM closed loop speed control compatible with industry standard digital temperature monitors
- Thermistor input with adjustable gain and minimum temperature response threshold
- Programmable high and low temperature maximum RPM
- Programmable minimum RPM
- Current output error amp for easy loop compensation
- Differential unbuffered and digital Hall compatibility with propriety noise immunity circuitry
- Integrated fault timer with auto start retry
- Adaptive motor start timer
- Combined frequency generator / rotor lock output
- Pinned out reference for Hall and circuit bias
- Fixed non-overlapping commutation delay
- Two 40 V open collector top drivers
- Two 100 mA complementary MOSFET bottom drivers
- Programmable cycle-by-cycle current limit protection
- Under voltage lockout and thermal shutdown protection
- Internal shunt regulator for higher voltage motors

Applications

- PC, workstation and mainframe fans
- Telecom, LAN server fans and blowers
- Industrial control and instrumentation fans

Pin Configuration



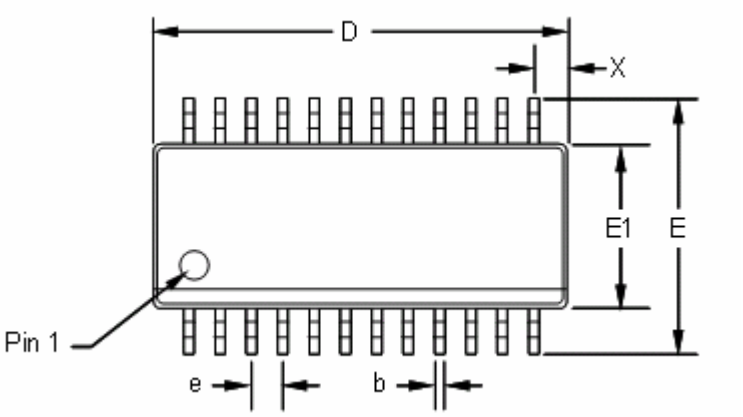
Ordering Information

Part Number	Package	Operating Junction Temperature Range	Marking
aMC85020QS24	24-lead QSOP	-40°C to 150°C	aMC8520

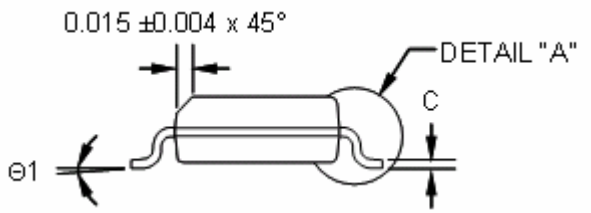
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QSOP 24 Package Outline Drawing

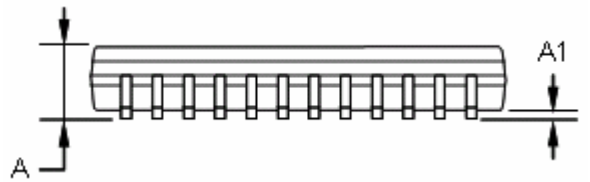
Top View



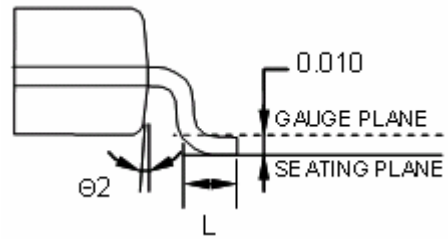
End View



Side View



Detail 'A' View



Notes:

1. Pb-Free
2. Co-planarity is 0 to 0.004" MAX
3. Package surface finish – Matte (VDI #24~27)
4. All dimensions exclude mold flash
5. The lead width, B, to be determined at 0.0075" from the lead tip

Dimensions are in inches

Symbol	MIN	MAX
A	0.054	0.068
A1	0.004	0.0098
B	0.008	0.012
D	0.337	0.344
E1	0.150	0.157
E	0.229	0.244
E	0.025 BSC	
C	0.0075	0.0098
L	0.016	0.034
X	0.0325 REF	
Θ1	0°	8°
Θ2	7° BSC	

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