EMC2302

Dual RPM-Based PWM Fan Controller

PRODUCT FEATURES

Data Brief

General Description

The EMC2302 is an SMBus compliant fan controller with up to two independently controlled PWM fan drivers. Each fan driver is controlled by a programmable frequency PWM driver and Fan Speed Control algorithm that operates in either a closed loop fashion or as a directly PWM-controlled device.

The closed loop Fan Speed Control algorithm (FSC) has the capability to detect aging fans and alert the system. It will likewise detect stalled or locked fans and trigger an interrupt.

Additionally, the EMC2302 offers a clock output so that multiple devices may be chained and slaved to the same clock source for optimal performance in large distributed systems.

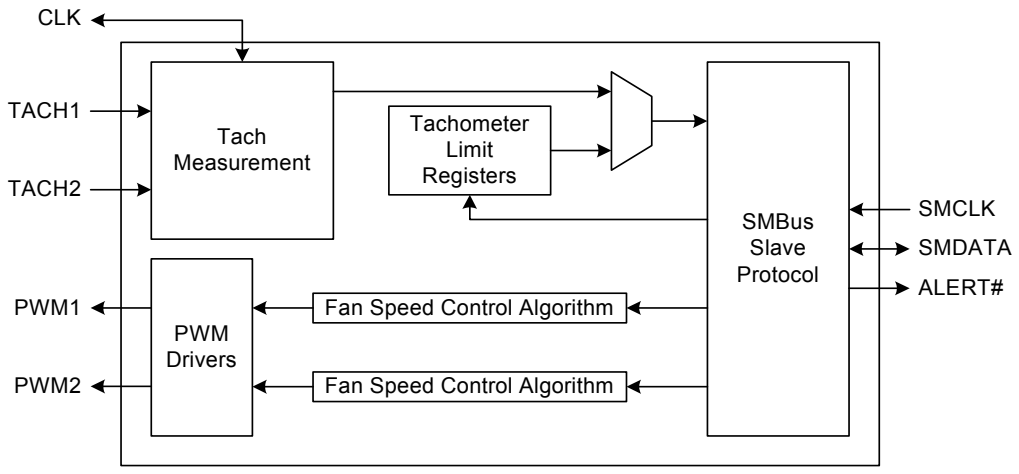
Applications

- Servers
- Projectors
- Industrial and Networking Equipment
- Notebook Computers

Features

- Two Programmable Fan Control circuits (EMC2302)
  - 4-wire fan compatible
  - High speed PWM (26 kHz)
  - Low speed PWM (9.5Hz - 2240 Hz)
  - Optional detection of aging fans
  - Fan Spin Up Control and Ramp Rate Control
  - Alert on Fan Stall
- Watchdog Timer
- RPM-based fan control algorithm
  - 0.5% accuracy from 500 RPM to 16k RPM (external crystal oscillator)
  - 1% accuracy from 500 RPM to 16k RPM (internal clock)
- SMBus 2.0 Compliant
  - SMBus Alert compatible
- CLK Pin can provide a clock source output
- Available in a 10-pin MSOP Lead-free RoHS Compliant package

Block Diagram



Order Number(s):

ORDERING NUMBER	PACKAGE	FEATURES
EMC2302-1-AIZL-TR	10-pin MSOP (Lead-free RoHS compliant)	Two RPM-based fan speed control algorithms. SMBus address 0101_110(r/w)
EMC2302-2-AIZL-TR	10-pin MSOP (Lead-free RoHS compliant)	Two RPM-based fan speed control algorithms. SMBus address 0101_111(r/w)

This product meets the halogen maximum concentration values per IEC61249-2-21

For RoHS compliance and environmental information, please visit www.smsc.com/rohs

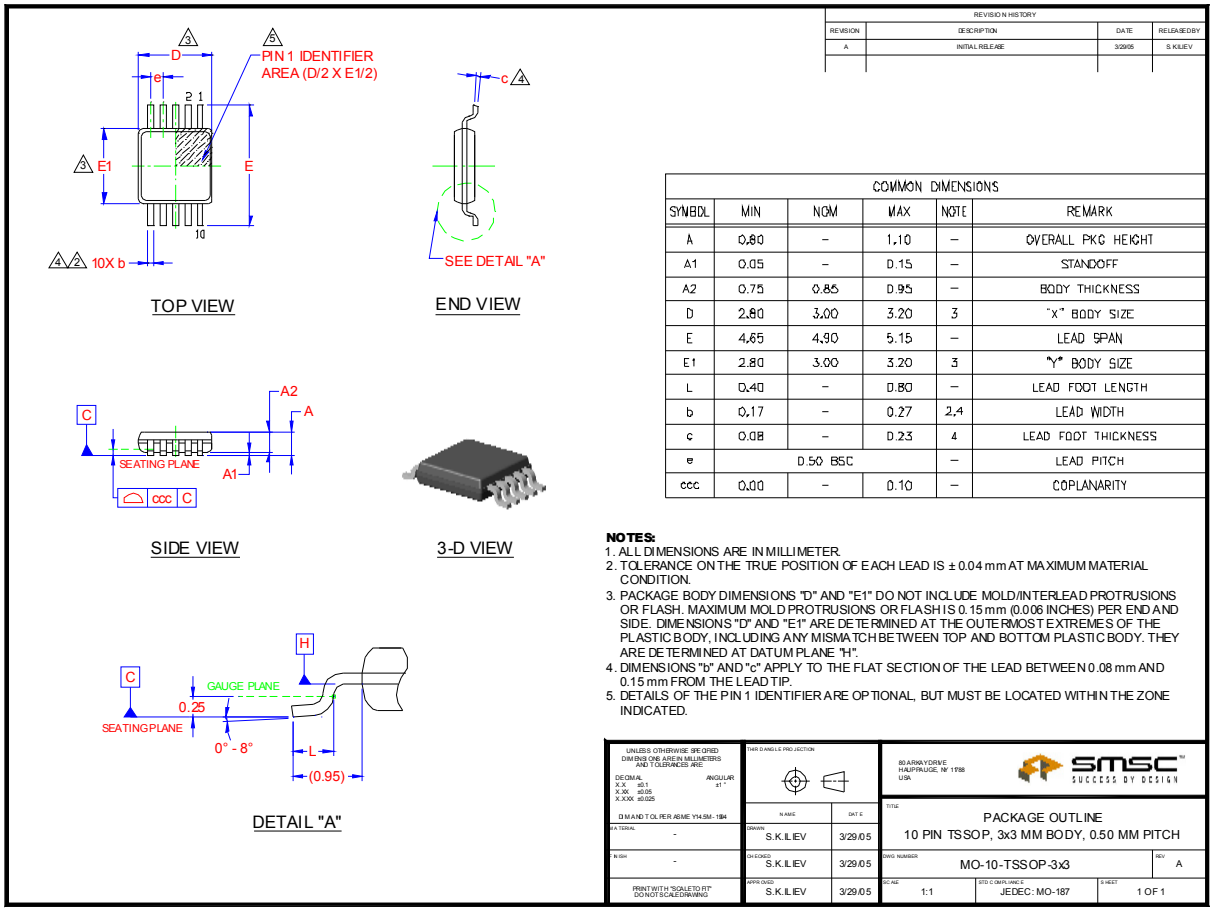
80 ARKAY DRIVE, HAUPPAUGE, NY 11788 (631) 435-6000 or 1 (800) 443-SEMI

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Package Outline



REVISION HISTORY

REVISION	DESCRIPTION	DATE	RELEASED BY
A	INITIAL RELEASE	3/29/05	S.KILIEV

COMMON DIMENSIONS

SYMBOL	MIN	NOM	MAX	NOTE	REMARK
A	0.80	–	1.10	–	OVERALL PKG HEIGHT
A1	0.05	–	0.15	–	STANDOFF
A2	0.75	0.85	0.95	–	BODY THICKNESS
D	2.80	3.00	3.20	3	"X" BODY SIZE
E	4.65	4.90	5.15	–	LEAD SPAN
E1	2.80	3.00	3.20	3	"Y" BODY SIZE
L	0.40	–	0.80	–	LEAD FOOT LENGTH
b	0.17	–	0.27	2,4	LEAD WIDTH
c	0.08	–	0.23	4	LEAD FOOT THICKNESS
e		0.50 BSC		–	LEAD PITCH
ccc	0.00	–	0.10	–	COPLANARITY

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETER.
2. TOLERANCE ON THE TRUE POSITION OF EACH LEAD IS ± 0.04 mm AT MAXIMUM MATERIAL CONDITION.
3. PACKAGE BODY DIMENSIONS "D" AND "E1" DO NOT INCLUDE MOLD/INTERLEAD PROTRUSIONS OR FLASH. MAXIMUM MOLD PROTRUSIONS OR FLASH IS 0.15 mm (0.006 INCHES) PER END AND SIDE. DIMENSIONS "D" AND "E1" ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY, INCLUDING ANY MISMATCH BETWEEN TOP AND BOTTOM PLASTIC BODY. THEY ARE DETERMINED AT DATUM PLANE "H".
4. DIMENSIONS "b" AND "c" APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.08 mm AND 0.15 mm FROM THE LEAD TIP.
5. DETAILS OF THE PIN 1 IDENTIFIER ARE OPTIONAL, BUT MUST BE LOCATED WITHIN THE ZONE INDICATED.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE: DECIMAL X.X ±0.1, X.XX ±0.05, X.XXX ±0.025; ANGULAR ±1°. DIMANDTOLPER ASME Y14.5M-1994. THIRD ANGLE PROJECTION. PRINT WITH "SCALE TO FIT" DO NOT SCALE DRAWING.

NAME	DATE
DRAWN S.K.ILIEV	3/29/05
CHECKED S.K.ILIEV	3/29/05
APPROVED S.K.ILIEV	3/29/05

80 ARKAY DRIVE, HAUPPAUGE, NY 11788, USA. SMSC SUCCESS BY DESIGN

TITLE: PACKAGE OUTLINE 10 PIN TSSOP, 3x3 MM BODY, 0.50 MM PITCH

DWG NUMBER: MO-10-TSSOP-3x3 REV: A

SCALE: 1:1 STD COMPLIANCE: JEDEC: MO-187 SHEET: 1 OF 1

Figure 1 EMC2302 Package Drawing - 10-Pin MSOP

PRODUCT PREVIEW