



Multiple RPM-Based PWM Fan Controller for Three Fans

PRODUCT FEATURES

Data Brief

General Description

The EMC2303 is an SMBus compliant fan controller with up to three 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 EMC2303 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.

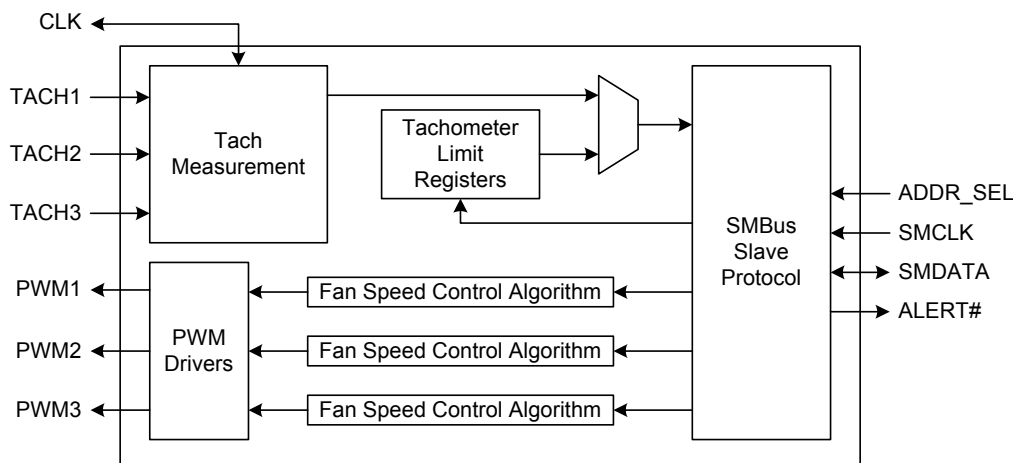
Applications

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

Features

- Three Programmable Fan Control circuits (EMC2303)
 - 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
 - Up to 3 Selectable Default Fan Speeds
- 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
 - Up to 6 selectable SMBus addresses
 - SMBus Alert compatible
- CLK Pin can provide a clock source output
- Available in a 12-pin 4mm x 4mm QFN Lead-free RoHS Compliant package

Block Diagram



ORDER NUMBER:

ORDERING NUMBER	PACKAGE	FEATURES
EMC2303-1-KP-TR	12-pin QFN (Lead-free RoHS compliant)	Three RPM-based fan speed control algorithms

**This product meets the halogen maximum concentration values per IEC61249-2-21
For RoHS compliance and environmental information, please visit www.smsc.com/rohs**



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Package Outline

EMC2303 Package Information

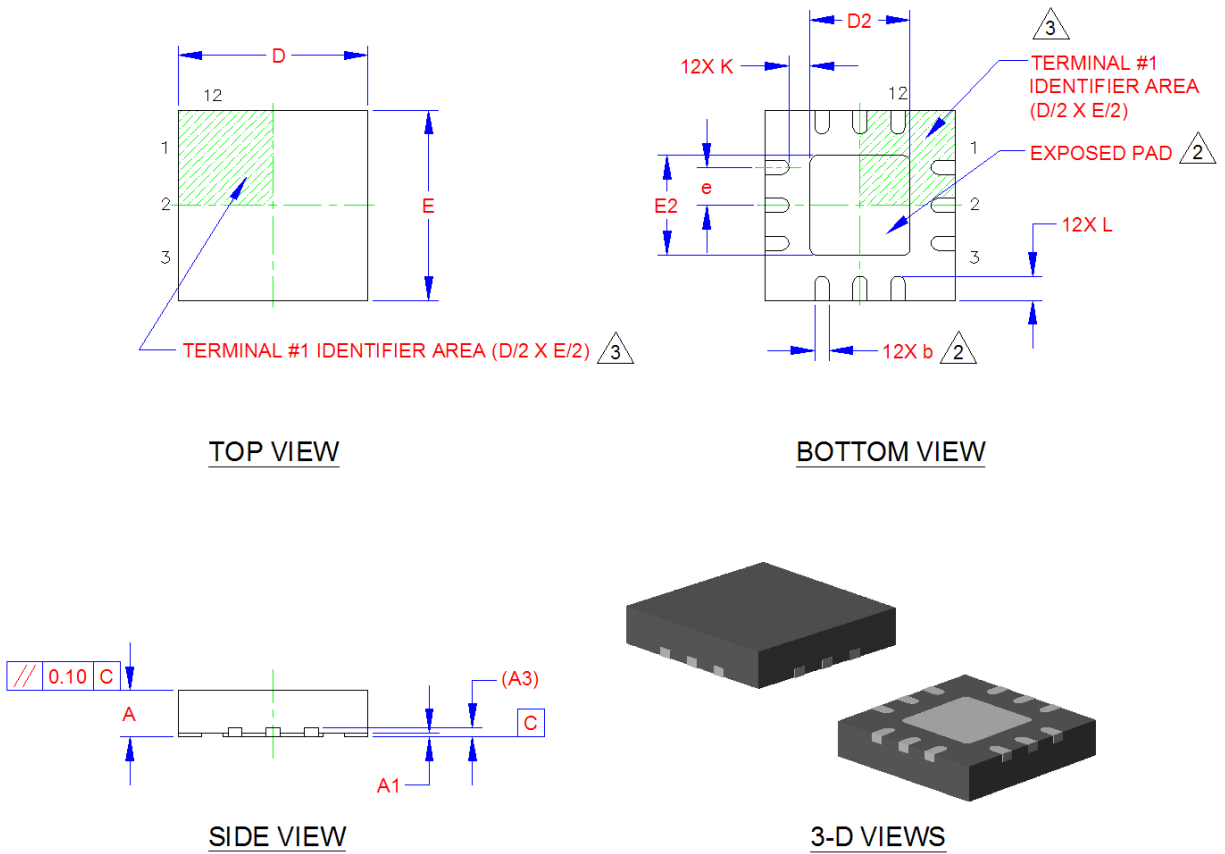
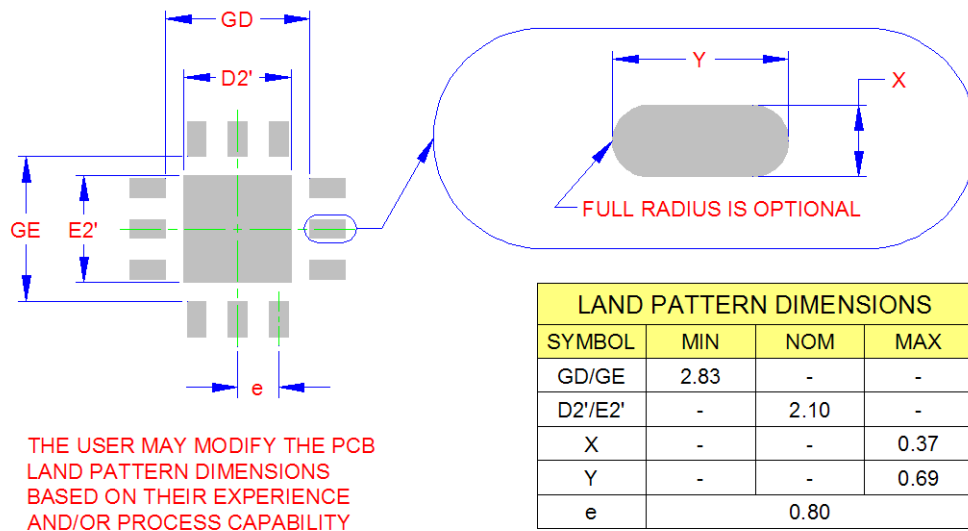


Figure 1 Package Drawing - 12-Pin QFN 4mm x 4mm

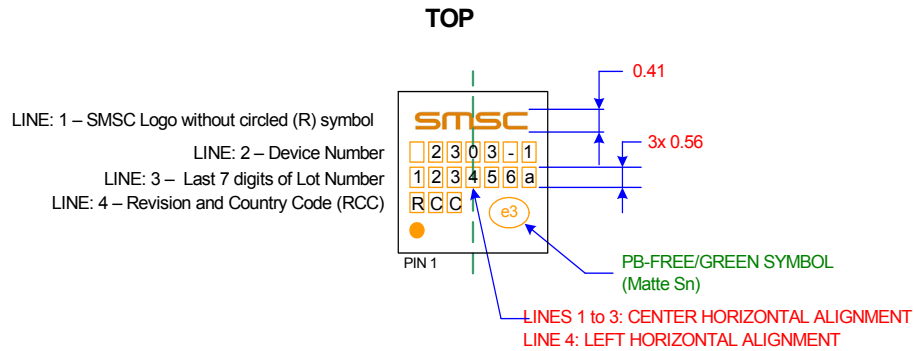
COMMON DIMENSIONS					
SYMBOL	MIN	NOM	MAX	NOTE	REMARK
A	0.80	0.85	0.90	-	OVERALL PACKAGE HEIGHT
A1	0	0.02	0.05	-	STANDOFF
A3	0.20 REF			-	LEAD-FRAME THICKNESS
D/E	3.90	4.00	4.10	-	X/Y BODY SIZE
D2/E2	2.00	2.10	2.20	2	X/Y EXPOSED PAD SIZE
L	0.45	0.50	0.55	-	TERMINAL LENGTH
b	0.25	0.30	0.35	2	TERMINAL WIDTH
K	0.20	-	-	-	TERMINAL TO PAD DISTANCE
e	0.80 BSC			-	TERMINAL PITCH

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. POSITION TOLERANCE OF EACH TERMINAL AND EXPOSED PAD IS $\pm 0.05\text{mm}$ AT MAXIMUM MATERIAL CONDITION. DIMENSIONS "b" APPLIES TO PLATED TERMINALS AND IT IS MEASURED BETWEEN 0.15 AND 0.30 mm FROM THE TERMINAL TIP.
3. DETAILS OF TERMINAL #1 IDENTIFIER ARE OPTIONAL BUT MUST BE LOCATED WITHIN THE AREA INDICATED.

Figure 2 Package Dimensions - 12-Pin QFN 4mm x 4mm

RECOMMENDED PCB LAND PATTERN
Figure 3 PCB Footprint - 12-Pin QFN 4mm x 4mm

Package Markings



BOTTOM

BOTTOM MARKING NOT ALLOWED

Figure 4 EMC2303 Package Markings