

TC670

Tiny Predictive Fan Failure Detector

The **TC670** is a predictive fan failure detection device.

The TC670 is an integrated fan speed sensor that predicts fan failure early and therefore prevents thermal damage to systems with cooling fans. When the fan speed falls below a user-programmable RPM level, the device asserts an alert signal to indicate a fan wear-out or a stuck rotor condition. This signal can be used as an indication to replace the fan, turn on a redundant fan and/or implement additional active cooling methods. The TC670 can be used in multi-fan applications and offers a typical accuracy of $\pm 5\%$ with a low typical operating current of only $100\mu\text{A}$.

The TC670 works with all linear controlled 2-wire fans and eliminates the need for software and more expensive 3-wire fan solutions. The device is fully specified from 3.0V to 5.5V over the -40°C to $+85^{\circ}\text{C}$ temperature range and is available in a small 6-Pin SOT-23 package. The TC670 is ideal for every application utilizing DC fans, especially for the ones where reliability is critical. Applications may include computers, projectors, servers, datacom equipment, telecom equipment, data storage, power supplies, set-top boxes, fan racks, and test equipment.



Features:

- Fan wear-out predictive detection
- Externally programmable fan alert threshold
- 3.0V to 5.5V supply voltage range
- Low $100\mu\text{A}$ operating current
- $\pm 5\%$ typical RPM threshold accuracy
- Space-saving SOT-23 package
- Temperature range: -40°C to $+85^{\circ}\text{C}$
- No Software necessary

Related Tools:

- TC670DEMO Development System



MICROCHIP

Thermal Management

Additional Information:

- Microchip's web site: www.microchip.com
- Microchip's *Technical Library CD-ROM*, Order No. [DS00161](#)
- *Analog/Interface Handbook*, Order No. [DS00207](#)
- Product Line Card, Order No. [DS00148](#)
- Analog Design Pack CD-ROM, Order No. [DS51205](#)

TC670 Predictive Fan Failure Detector

Device	V _{CC} Range	Temperature	Max I _Q	Typical Accuracy	Package
TC670	3.0V to 5.5 V	-40°C to +85°C	150µA	±5%	6CH

Package Key: CH = SOT-23A

Development Tools for Analog and Interface Products from Microchip

FilterLab®	Active Filter Software Design Tool
MCP2120/2150 Developer's Kit	Infrared Products Developer's Kit
MCP2510 CAN Developer's Kit	MCP2510 CAN Evaluation/Development Tool
MXDEV™ 1 Analog Evaluation System	Evaluation Kit for MCP Devices
MCP3201/02 Evaluation Daughter Kit	Analog-to-Digital Converter - Two Channel*
MCP3204/08 Evaluation Daughter Kit	Analog-to-Digital Converter - Four Channel*
MCP41XXX/MCP42XXX Evaluation Daughter Kit	Digital Pot Evaluation and Demonstration*
TC3400DEMO	Demo Board for TC340X Sigma-Delta ADCs
TC3400EV	Evaluation Kit for TC340X Sigma-Delta ADCs
TC642DEMO	Fan Control Module for TC64X Devices
TC642EV	Evaluation Kit for TC64X Fan Controllers
TC650DEMO	Demo Board for TC650/651 Fan Control ICs
TC652DEMO	Demo Board for TC652/653 Fan Control ICs
TC74DEMO	Demo Board for TC74 Digital Thermal Sensor
TC670DEMO	Board for TC670 Predictive Fan Failure Detector

*Note: Requires MXDEV Analog Evaluation Kit.

Americas

Atlanta	(770) 640-0034
Boston	(978) 692-3848
Chicago	(630) 285-0071
Dallas	(972) 818-7423
Dayton	(937) 291-1654
Detroit	(248) 538-2250
Los Angeles	(949) 263-1888
New York	(631) 273-5305
San Jose	(408) 436-7950
Toronto	(905) 673-0699

Asia /Pacific

Australia	61-2-9868-6733
China – Beijing	86-10-8528-2100
China – Chengdu	86-28-6766-200
China – Fuzhou	86-591-7557-563
China – Shanghai	86-21-6275-5700
China – Shenzhen	86-755-2350-361
Hong Kong	852-2-401-1200
India	91-80-229-0061
Japan	81-45-471-6166
Korea	82-2-554-7200
Singapore	65-334-8870
Taiwan	886-2-2717-7175

Europe

Denmark	45-4420-9895
France	33-1-69-53-63-20
Germany	49-89-627-144-0
Italy	39-039-65791-1
United Kingdom	44-118-921-5869

Microchip Technology Inc. • 2355 W. Chandler Blvd. • Chandler, AZ 85224-6199 • (480) 792-7200 • FAX (480) 792-9210

Information subject to change. The Microchip name and logo, the Microchip logo, FilterLab and The Embedded Control Solutions Company are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries. MXDEV is a trademark of Microchip Technology Incorporated in the U.S.A. All other trademarks are the property of their respective owners.
© 2001, Microchip Technology Incorporated. Printed in the U.S.A. All rights reserved. 10/01 DS21684A

