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 ±5% with a low typical operating current of only 100µA.
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°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 100µA operating current
- ±5% typical RPM threshold accuracy
- Space-saving SOT-23 package
- Temperature range: -40°C to +85°C
- No Software necessary

Related Tools:
- TC670DEMO Development System
**TC670 Predictive Fan Failure Detector**

<table>
<thead>
<tr>
<th>Device</th>
<th>V&lt;sub&gt;CC&lt;/sub&gt; Range</th>
<th>Temperature</th>
<th>Max I&lt;sub&gt;Q&lt;/sub&gt;</th>
<th>Typical Accuracy</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC670</td>
<td>3.0V to 5.5V</td>
<td>–40°C to +85°C</td>
<td>150µA</td>
<td>±5%</td>
<td>6CH</td>
</tr>
</tbody>
</table>

**Package Key:** CH = SOT-23A

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**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 Evaluation/Development Tool
- **MXDEV™ 1 Analog Evaluation System**: Evaluation Kit for MCP Devices
  - MCP3201/02 Evaluation Daughter Kit
  - MCP3204/08 Evaluation Daughter Kit
  - MCP41XXX/MCP42XXX Evaluation Daughter Kit
- **TC3400DEM0**: Demo Board for TC340X Sigma-Delta ADCs
- **TC3400EV**: Evaluation Kit for TC340X Sigma-Delta ADCs
- **TC642DEM0**: Fan Control Module for TC64X Devices
- **TC642EV**: Evaluation Kit for TC64X Fan Controllers
- **TC650DEM0**: Demo Board for TC650/651 Fan Control ICs
- **TC652DEM0**: Demo Board for TC652/653 Fan Control ICs
- **TC74DEM0**: Demo Board for TC74 Digital Thermal Sensor
- **TC670DEM0**: Board for TC670 Predictive Fan Failure Detector

*Note: Requires MXDEV Analog Evaluation Kit.*

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