

EVALUATION KIT
AVAILABLE

IEEE 802.3af/at-Compliant, Powered Device Interface Controllers with Integrated Power MOSFET

General Description

The MAX5972A/MAX5972B provide a complete interface for a powered device (PD) to comply with the IEEE 802.3af/at standard in a power-over-ethernet (PoE) system. The MAX5972A/MAX5972B provide the PD with a detection signature, classification signature, and an integrated isolation power switch with inrush current control. During the inrush period, the MAX5972A/MAX5972B limit the current to less than 180mA before switching to the higher current limit (720mA to 880mA) when the isolation power MOSFET is fully enhanced. The devices feature an input UVLO with wide hysteresis and long deglitch time to compensate for twisted-pair cable resistive drop and to assure glitch-free transition during power-on/off conditions. The MAX5972A/MAX5972B can withstand up to 100V at the input.

The MAX5972A/MAX5972B support a 2-event classification method as specified in the IEEE 802.3at standard and provide a signal to indicate when probed by a Type 2 power sourcing equipment (PSE). The devices detect the presence of a wall adapter power source connection and allow a smooth switch over from the PoE power source to the wall power adaptor.

The MAX5972A/MAX5972B also provide a power-good (PG) signal, two-step current limit and foldback, over-temperature protection, and di/dt limit. A sleep mode feature in the MAX5972B provides low-power consumption while supporting Maintain Power Signature (MPS). A green sleep mode feature in the MAX5972B further reduces power consumption to comply with green power requirements while still supporting MPS. The MAX5972B also features an LED driver that is automatically activated during sleep mode or manually activated during normal operation.

The MAX5972A/MAX5972B are available in a 16-pin, 5mm x 5mm, TQFN power package. These devices are rated over the -40°C to +85°C extended temperature range.

Applications

IEEE 802.3af/at Powered Devices
IP Phones, Wireless Access Nodes, IP Security Cameras
WiMAX™ Base Station

WiMAX is a trademark of WiMAX Forum.

Features

- ◆ Sleep Mode and Green Power (MAX5972B)
- ◆ IEEE 802.3af/at Compliant
- ◆ 2-Event Classification or an External Wall Adapter Indicator Output
- ◆ Simplified Wall Adapter Interface
- ◆ PoE Classification 0–5
- ◆ 100V Input Absolute Maximum Rating
- ◆ Inrush Current Limit of 180mA Maximum
- ◆ Current Limit During Normal Operation Between 720mA and 880mA
- ◆ Current Limit and Foldback
- ◆ Legacy UVLO at 36V
- ◆ LED Driver with Programmable LED Current (MAX5972B)
- ◆ Overtemperature Protection
- ◆ Thermally Enhanced, 5mm x 5mm, 16-Pin TQFN

Ordering Information

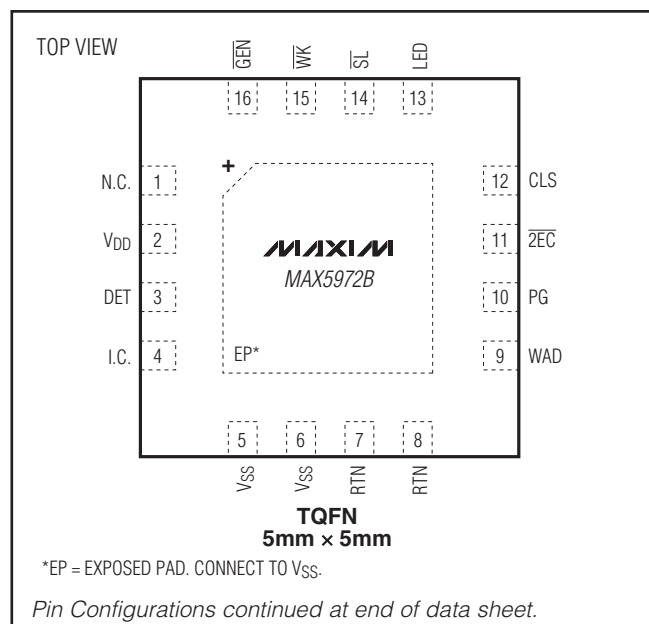
PART	TEMP RANGE	PIN-PACKAGE	SLEEP MODE
MAX5972AETE+	-40°C to +85°C	16 TQFN-EP**	—
MAX5972BETE+*	-40°C to +85°C	16 TQFN-EP**	Yes

+Denotes a lead(Pb)-free/RoHS-compliant package.

*Future product—contact factory for availability.

**EP = Exposed pad.

Pin Configurations



MAX5972A/MAX5972B