

具有中断功能的16位I²C和SMBus IO扩展器

16-bit I²C-bus and SMBus IO expander with Interrupt

■ FEATURES

- Power supply range : 2.2V~5.5V
- Capable of Directly Driving LEDs
- 16 IOs can be configured as an input or an output independently
- Support interrupt, active low
- Standard I²C interface, 8 programmable device addresses (4 for HTR3339, 1 for HTR33351)
- Support Inverse Polarity Configuration
- Low Standby-Current Consumption
- Pb-free Packages, QFN4×4-24L, QFN3×3-20L
- 供电范围: 2.2V~5.5V
- 支持LED驱动
- 16个IO, 可任意置为独立的输入或输出
- 中断功能, 低电平有效
- 标准I²C接口, 8个I²C器件地址可选(HTR3339为4个, HTR33351为1个)
- 支持反极性配置
- 支持低功耗待机
- QFN4×4-24L, QFN3×3-20L, 无铅封装

■ APPLICATIONS

- GPIO expansion for I²C-bus applications
- I²C总线控制的GPIO扩展应用

■ DESCRIPTION

HTR33xx is a 16-bit I²C-bus and SMBus IO expander with 2.2V~5.5V power supply. Any of the 16 IOs can be configured as an input or an output independently. Meanwhile, any IO are capable of driving LEDs directly.

At power on, the IOs are configured as inputs by default. Configurations are set through I²C interface, such as input or output selection, Polarity Inversion, and so on.

When the IOs are configured as inputs, they are continuously monitored for state changes. State changes are indicated at the INTN output. Once the IO state are read through the I²C interface, the INTN output is cleared.

HTR3339 has RSTN pin to set the registers to their default values. HTR3335, HTR33351 and HTR3339 don't include internal IO pullup resistor, so that they require external pull-ups and pull-downs on unused IOs when they are configured as inputs.

HTR3339 has 4 programmable device addresses, while HTR3355 and HTR3335 have 8, and HTR33351 has 1.

HTR33xx is available in QFN4×4-24L and QFN3×3-20L package.

HTR33xx 是一款 I²C 和 SMBus IO 扩展器, 2.2V~5.5V电源供电。16个IO端口中的任何一个都可以单独配置为输入或输出。此外, 任一IO可驱动LED。

通电后, 16个IO端口配置默认为输入, 并可通过I²C进行相关配置, 如输入或输出选择、反极性等配置

所有配置为输入的IO端口都会持续监控状态变化, IO口的变化由INTN输出指示。当IO状态通过I²C接口被读取时, INTN输出被清除。

HTR3339具有RSTN引脚, 其拉低时所有寄存器恢复到默认状态。HTR3335, HTR33351和HTR3339的IO内部没有上拉电阻, 因此当其配置为输入且未使用时, 需要外部的上下拉。

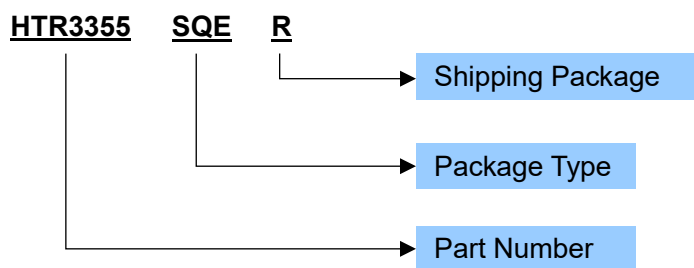
HTR3339具有4个器件地址, HTR3355和HTR3335则有8个, HTR33351则有1个。

HTR33xx提供QFN4×4-24L和QFN3×3-20L封装。

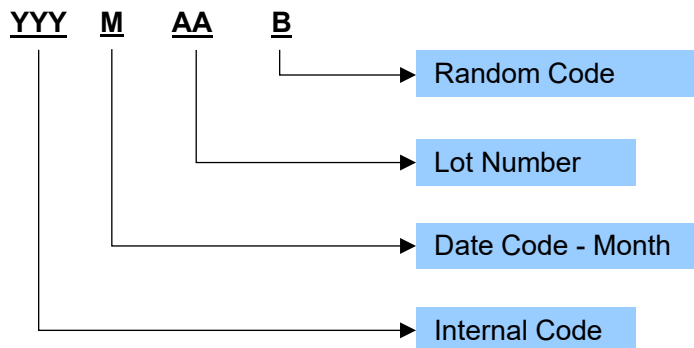
ORDERING INFORMATION

Ordering Number	Package Type	Marking	Operating Temperature Range	Shipping Package / MOQ
HTR3355SQER	QFN4×4-24L (SQE)	HTR3355 YYYMAAB ¹	-40°C~85°C	Tape and Reel (R) 5000PCS
HTR3335SQER	QFN4×4-24L (SQE)	HTR3335 YYYMAAB	-40°C~85°C	Tape and Reel (R) 5000PCS
HTR3339SQER	QFN4×4-24L (SQE)	HTR3339 YYYMAAB	-40°C~85°C	Tape and Reel (R) 5000PCS
HTR33351SQER	QFN3×3-20L (SQE)	HTR33351 YYYMAAB	-40°C~85°C	Tape and Reel (R) 5000PCS

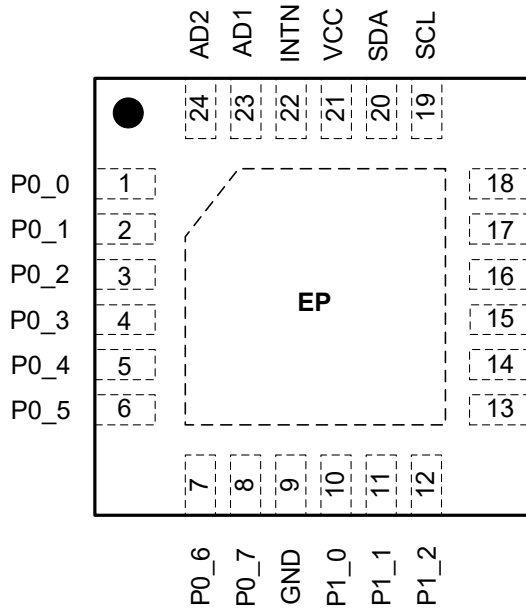
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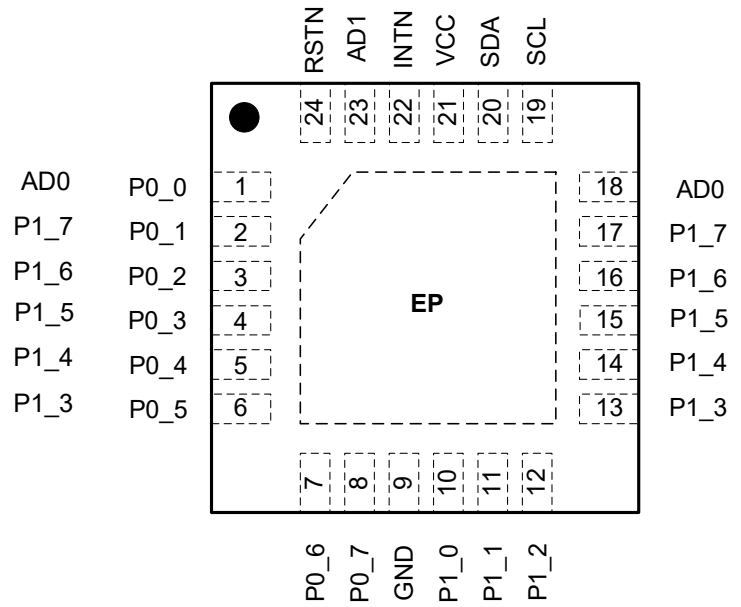
Production Tracking Code



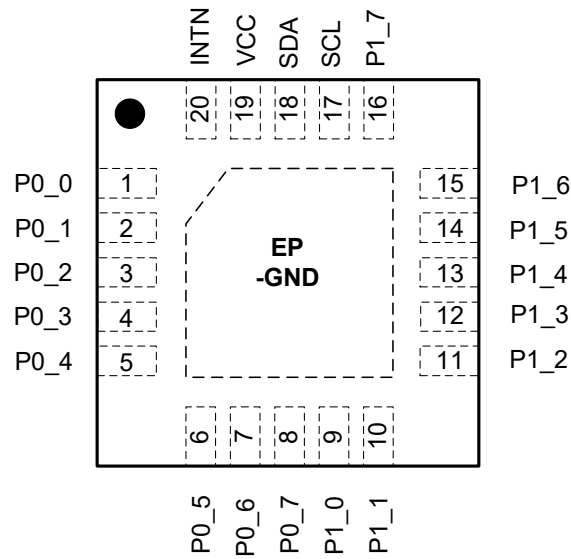
¹ YYYMAAB is production tracking code
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■ TERMINAL CONFIGURATION


HTR3355, HTR3335 Top View



HTR3339 Top View



HTR33351 Top View

■ TERMINAL FUNCTION

Name	Description
P0_0~P0_7	Input or output terminal, push-pull structure, input as default. 输入或输出（推挽结构），默认输入。
GND	Ground. 地
P1_0~P1_7	Input or output terminal, push-pull structure, input as default. 输入或输出（推挽结构），默认输入。
AD0	I ² C device address, connect to VCC or GND。 I ² C器件地址选择，接VCC或GND。
SCL	I ² C serial clock. I ² C时钟
SDA	I ² C serial data. I ² C数据
VCC	Power supply. 电源输入端.
INTN	Interrupt output pin, open-drain, need external pull-up resistor; active low. 中断输出，开漏结构，需外部上拉电阻；低有效
AD1	I ² C device address, connect to VCC or GND。 I ² C器件地址选择，接VCC或GND。
AD2 (HTR3355, HTR3335)	AD2: I ² C device address, connect to VCC or GND。 AD2: I ² C器件地址选择，接VCC或GND。
RSTN (HTR3339)	RSTN: Hardware reset pin, active low. RSTN: 硬件复位，低为复位
EP (GND)	Provides both electrical and thermal connection from the device to the board. Connect to the system ground. 接地。

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