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APPLICATION NOTE 3407

Upgrading to the DS2762 from the DS2761

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Abstract: The DS2762 can be used as a drop-in replacement for the DS2761. The differences between the two chips are minor. They include different size flipchip packaging, different power-up states, input filters on DQ and PS, short circuit delay timing, and the addition of an interrupt feature.

Introduction

Upgrading a design from the DS2761 battery monitor to the DS2762 battery monitor requires minimal software development and, in most cases, no change to the existing PCB. This paper covers the differences between the two devices that designers should consider, when using the DS2762 in an application originally designed for the DS2761.

Assembly Differences

The DS2762 TSSOP package is identical in size and pinout to the DS2761. Consequently, no changes are necessary to mount the DS2762 TSSOP package on a PCB designed for the DS2761.

The DS2762 flipchip uses the same land pattern as the DS2761. No changes to the PCB or solder stencil are required. The physical dimension differences between the DS2762 flipchip and the DS2761 are shown in Table 1. See document [56-G7003-003](#) for complete dimensions of the DS2762 flipchip.

Table 1. Dimension Differences Between the DS2761X and DS2762X

	Die Length (mm)	Die Width (mm)	Minimum Die Thickness (mm)	Maximum Die Thickness (mm)
DS2761X	2.69	2.41	0.60	0.793
DS2762X	2.69	2.52	0.38	0.46

Functional Differences

The DS2762 protector and fuel-gauge functions are identical to the DS2761, with the following exceptions.

Power Up—The DS2762 always powers up in active mode. It remains in active mode until conditions cause a transition to sleep mode. The power-up state of the DS2761 is not defined— it could power up in sleep or active mode.

Short Circuit—The short-circuit delay of the DS2762 is 200µs, double the delay of the DS2761. This difference makes the DS2762 more tolerant of high in-rush currents during application power up.

PS & DQ Delay Filters—The DS2762 has 100ms delay filters on the PS and DQ inputs, making it less susceptible to noise on these lines. The DQ filter applies only to state transitions; 1-Wire communication is not affected.

Software Considerations

The DS2762 has an alarm feature, which can generate interrupt signals on the PIO pin. The alarm feature is controlled through the Interrupt Enable (IE), bit 2 of the Status Register. If the application does not use PIO, then no software changes are necessary when switching to the DS2762. If PIO is used in the application, IE must be written to a logic '0' (factory default). This is accomplished by writing bit 2 of EEPROM location 0x31 to '0' followed by an EEPROM write and copy of block 1. All other software functions of the DS2761 and DS2762 are identical.

Summary

Physically, the DS2761X and DS2762X differ only in dimensions of the flipchip die; the land pattern and solder stencils are identical. Functional differences in the DS2762 are enhancements of DS2761 features, and should not affect overall operation. The DS2762 alarm feature is inactive by default. Consequently, as long as the IE bit is not overwritten there is no software functionality difference between the DS2761 and DS2762.

Related Parts

DS2761	High-Precision Li+ Battery Monitor	
DS2762	High-Precision Li+ Battery Monitor with Alerts	Free Samples

More Information

For Technical Support: <http://www.maximintegrated.com/support>

For Samples: <http://www.maximintegrated.com/samples>

Other Questions and Comments: <http://www.maximintegrated.com/contact>

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