PHILIPS

Replacement of Maxim DS75 with Philips LM75A

The LM75A can replace the Maxim DS75 without modifying the software or hardware and will behave the same.

1. Comparison

Parameters	LM75A	DS75
✓ Package and Pin-to-pin Drop in Replacement	YES	YES
✓ Functionally Identical (Configuration/etc)	YES	YES
✓ No Software Change (Identical Register Definition)	YES	YES
✓ Accuracy ±3 °C From –55 °C to 125 °C	YES	YES
✓ Compatible AC/DC spec	YES	YES
✓ Identical thermal shutdown default setting (T_{OS} and $T_{hysteresis}$)	YES	YES

2. Noticeable Differences

The major difference between DS75 and LM75A is: DS75 has programmable conversion rate in the configuration register. These bits are reserved bit in configuration register and are simply ignored by the LM75A.

Parameters	LM75A	DS75	Comments
✓ Temperature Resolution	11-bit [1]	9-bit to 12-bit	LM75A automatically runs at 11-bit. DS75 resolution must be programmed
✓ Temperature accuracy ±2 °C	-25 °C to 125 ° C	-25 °C to 100 °C	LM75A is Better
✓ Conversion time (11-bit)	100 ms	600 ms	LM75A is Better
Config Register, 01h (Bit 6:5)	Reserved	Conversion rate	LM75A ignore the conversion rate field

Note:

1. Still compatible with the existing 9-bit to 12-bit software used by the DS75 because the extra bits are transparent to the software. Switching to LM75A, the user automatically benefits the 11-bit resolution no software change. Both devices require 16 clock cycles to read the temperature value. It doesn't matter if the intended temperature reading is for 9-bit, 10-bit, 11-bit or 12-bit.

3. Orderable Part Number Cross Reference

Package	DS75	LM75A
SO8/SOIC	DS75S	LM75AD
TSSOP8/MSOP8	N/A	LM75ADP

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