



APPLICATION NOTE 3316

Dallas Semiconductor Microprocessor Supervisor Selection Guide

Abstract: This application note provides a quick guide to selecting Dallas Semiconductor Microprocessor Supervisor ICs. Many customers searching for a microprocessor supervisor have requested a simpler alternative to the Maxim online parametric search. This application note was created as an easy-to-use selection guide for the Dallas Semiconductor Microprocessor Supervisor product family. The goal was to allow an engineer to quickly narrow down available options for the right microprocessor supervisor IC for their application.

Introduction

Selecting a microprocessor supervisor can be complicated by the number of parts available. The parametric search on the Maxim/Dallas website lets you narrow the choice down but it can take a while! Customers have asked for a guide to simplify the process.

This application note provides a guide for quickly selecting Dallas Semiconductor Microprocessor Supervisor ICs. The goal is to allow an engineer to quickly narrow down available options for the right microprocessor supervisor IC for their application.

Background

Microprocessor Supervisors monitor supply voltages and apply resets when the monitored voltage falls out of tolerance. Some supervisors provide a means to manually reset a circuit through a pushbutton interface. Others have referenced comparators for monitoring voltages other than the supply voltage. Various reset times and tolerances are available. Watchdog timing functions, which monitor the microprocessor for activity, are implemented in some devices. Resets are available with active high and active low outputs.

Supervisor Reference Table

Table 1 is designed to allow the engineer to make a quick decision on a microprocessor supervisor device. Basic selection criteria include supply voltage, voltage tolerance, type of reset(s), and package type, as well as the options for pushbutton reset, watchdog timer, and referenced comparators.

Quickview Hyperlinks

Once a device is chosen from the above table, clicking the associated hyperlink will open the QuickView Datasheet from the Maxim home page (www.maxim-ic.com) for that particular device. In the QuickView page, the device description, key features, and ordering information are displayed. Datasheet specifications, applications notes, and mechanical drawings can be downloaded from this page as well.

For details on the specific part numbers for the chosen device, please use the following link: www.maxim-ic.com/design/packaging/dallas_ordering_information.cfm Enter the base part number (for example DS1232) into the 'Part Search' field. Click the 'Go' button and a list of all valid ordering numbers for that IC, as well as some details such as package type, operating temperature and voltage tolerance, will be listed.

Table 1. Microprocessor Supervisor IC Selection Guide

	5.0 Volt Operation	3.3 Volt Operation	2.5 Volt Operation	Pushbutton Reset	Referenced Comparator	Watchdog Timer	Active High Reset	Active Low Reset	Package Type
DS1231	5% 10%				✓		500ms	500ms	8-pin DIP, 16-pin SOIC
DS1232	5% 10%			✓		150ms 600ms 1200ms	610ms	610ms	8-pin DIP, 16-pin SOIC
DS1232LP	5% 10%			✓		150ms 600ms 1200ms	610ms	610ms	8-pin DIP, 8-pin SOIC, 16-pin SOIC, 8-pin uSOP, Flip Chip

DS1233	5% 10% 15%			✓				350ms	TO-92, 4-pin SOT-223
DS1233A		10% 15%		✓				350ms	TO-92, 4-pin SOT-223
DS1233D	5% 10% 15%							350ms	TO-92, 4-pin SOT-223
DS1233M	5% 10%	15%						350ms	TO-92, 8-pin SOIC
DS1705	5%			✓	✓	1600ms		205ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1706	10%			✓	✓	1600ms		205ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1706L	5%			✓	✓	1600ms	205ms		8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1706P		20%		✓	✓	1600ms	205ms		8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1706R		20%		✓	✓	1600ms		205ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1706S		10%		✓	✓	1600ms		205ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1706T		5%		✓	✓	1600ms		205ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1707	5%			✓	✓		205ms	205ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1708	10%			✓	✓		205ms	205ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1708R		20%		✓	✓		205ms	205ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1708S		10%		✓	✓		205ms	205ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1708T		5%		✓	✓		205ms	205ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1810	5% 10% 15%							150ms	TO-92, 3-pin SOT-23, Flip Chip
DS1811	5% 10% 15%							150ms	TO-92, 3-pin SOT-23, Flip Chip
DS1812	5% 10% 15%						150ms		TO-92, 3-pin SOT-23, Flip Chip
DS1813	5% 10% 15%			✓				150ms	TO-92, 3-pin SOT-23, Flip Chip
DS1814A	5% 10%			✓		1600ms		200ms	5-pin SOT-23-5
DS1814B	5% 10%					1600ms	200ms	200ms	5-pin SOT-23-5, Flip Chip
DS1814C	5% 10%			✓			200ms	200ms	5-pin SOT-23-5, Flip Chip
DS1815		5% 10% 20%						150ms	TO-92, 3-pin SOT-23
DS1816		5% 10% 20%						150ms	TO-92, 3-pin SOT-23

DS1817		5% 10% 20%					150ms		TO-92, 3-pin SOT-23
DS1818		5% 10% 20%		✓				150ms	TO-92, 3-pin SOT-23
DS1819A		5% 10% 20%		✓		1600ms		200ms	5-pin SOT-23-5, Flip Chip
DS1819B		5% 10% 20%				1600ms	200ms	200ms	5-pin SOT-23-5
DS1819C		5% 10% 20%		✓			200ms	200ms	5-pin SOT-23-5
DS1830	5% 10% 15%			✓				50ms 100ms 250ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1830A		5% 10% 20%		✓				50ms 100ms 250ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1831	5% 10% 15%	5% 10% 20%		✓	2			16ms 160ms 1600ms	16-pin DIP, 16-pin SOIC
DS1831A	5% 10% 15%	5% 10% 20%		✓	✓	16ms 160ms 1600ms		16ms 160ms 1600ms	16-pin DIP, 16-pin SOIC
DS1831B	5% 10% 15%	5% 10% 20%		✓	2			16ms 160ms 1600ms	16-pin DIP, 16-pin SOIC
DS1831C		5% 10% 20%	5% 10% 15%	✓	2			16ms 160ms 1600ms	16-pin DIP, 16-pin SOIC
DS1831D		5% 10% 20%	5% 10% 15%	✓	✓	16ms 160ms 1600ms		16ms 160ms 1600ms	16-pin DIP, 16-pin SOIC
DS1831E		5% 10% 20%	5% 10% 15%	✓	2			16ms 160ms 1600ms	16-pin DIP, 16-pin SOIC
DS1832		10% 20%		✓		150ms 600ms 1200ms	610ms	610ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP
DS1833	5% 10% 15%						350ms		TO-92,4-pin SOT-223
DS1834	5% 10%	10% 20%		✓				350ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP, Flip Chip
DS1834A	5% 10%	10% 20%		✓				350ms	8-pin DIP, 8-pin SOIC, 8-pin uSOP, Flip Chip
DS1834D	5% 10%	10% 20%		✓			350ms		8-pin DIP, 8-pin SOIC, 8-pin uSOP

Questions/comments/suggestions concerning this application note can be sent to: MixedSignal.Apps@dalsemi.com

Maxim Integrated Products / Dallas Semiconductor Contact Information

DS1818: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)
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