

Features

- Provides protection regardless of card loading conditions
- Fast turn on and reverse recovery characteristics
- 24 pin QSOP package has a small footprint, saving valuable board space
- 18 channel, dual rail clamping capacity
- Ideal for applications that require noise immunity and low power consumption

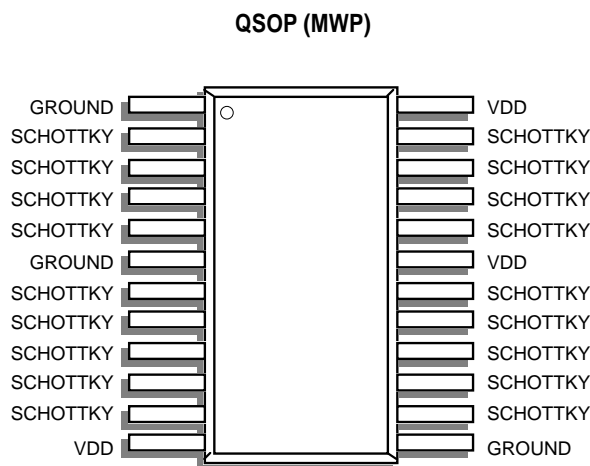
Description

The ASDN010 is a Schottky Diode Memory Bus Terminator designed to eliminate overshoot and undershoot problems caused by reflections on high speed lines, while maintaining noise immunity and minimizing any losses in power consumption.

The ASDN010 is an ideal terminator for applications such as SDRAM bus lines, or v2.1 66MHz PCI busses.

The ASDN010 supports up to 18 terminated lines. Each line can be simultaneously clamped to both ground and power supply rails, allowing effective termination under a wide variety of loading conditions.

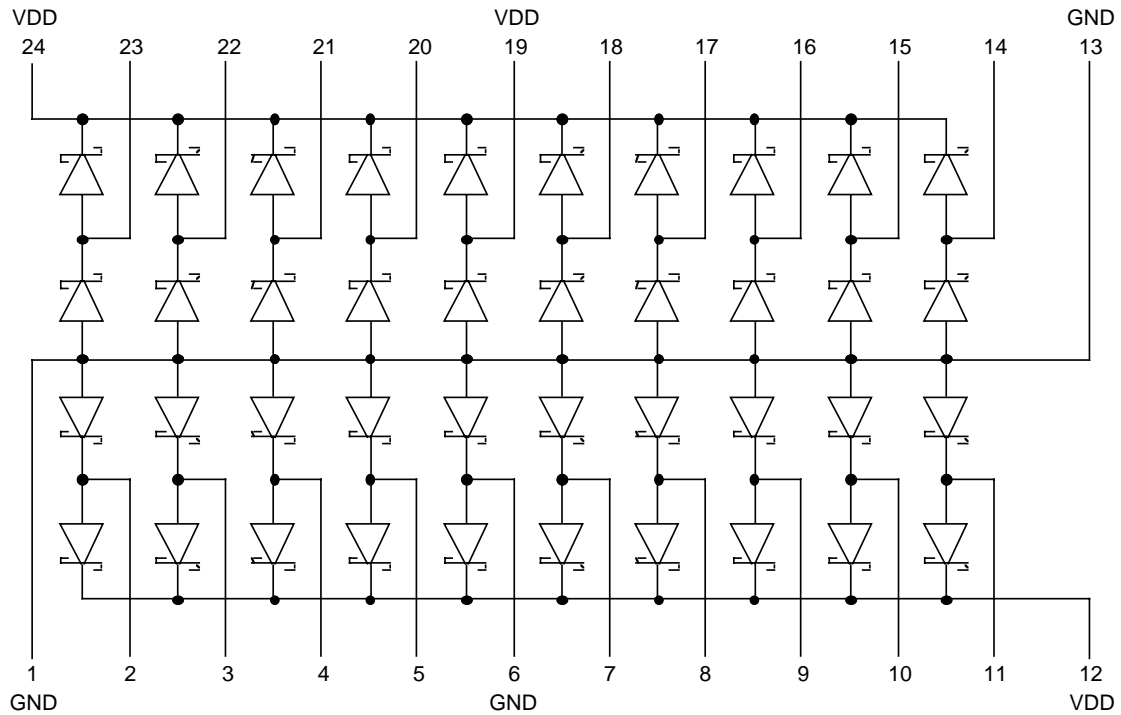
Pin Configuration — Top view



Ordering Information

Package	Temperature Range	Order Code
14-Pin QSOP	0 to 70° C	ASDN010MWP

Functional Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Rating	Units
Supply Voltage	V_{DD}	-0.3 to +7.0	V
Channel clamp current (continuous)	I_{CLAMP}	± 50	mA
Operating Temperature		0 to 70	$^{\circ}C$
Package Power Rating (QSOP @ 70 $^{\circ}C$)		1.00 (max.)	W
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	- 65 to 150	$^{\circ}C$
Lead Temperature, Soldering 10 Seconds	T_L	300	$^{\circ}C$

Stresses greater than those listed under ABSOLUTE MAXIMUM RATINGS may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

Recommended Conditions

Parameter	Symbol	Rating	Unit
Voltage	V_{VDD}	20	V
Current	I_{VDD}	10	mA

Typical Thermal Resistances

Package	θ_{JA}	θ_{JC}	Typical Derating
24L-QSOP	110 $^{\circ} C/W$	8 $^{\circ} C/W$	9.1 mW/ $^{\circ}C$

Electrical Characteristics

Electrical Characteristics are guaranteed over full junction temperature range (0 to 70° C). Ambient temperature must be derated based on power dissipation and package thermal characteristics. The conditions are: $V_{DD} = 20V$ and $I_{VDD} = 10\text{ mA}$ unless otherwise stated.

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Diode Forward Voltage	V_F	$I_F = 16\text{ mA}$ $I_F = 50\text{ mA}$		0.65 0.80	0.85 1.00	V V
Max. Bus Speed (see note 1)		$Z_O = 50\Omega$, Logic Swing 0.4V to 3.0V		125		MHz
Channel leakage	I_{CL}	$0 \leq V_{IN} \leq V_{DD}$		0.1	5.0	μA
Input Capacitance		$f = 1\text{ MHz}$, $V_{IN} = 2.5V$, $T_A = 25^\circ\text{C}$, $V_{DD} = 5V$		5		pF
ESD Protection		MIL-STD-883, Method 3015	2			KV

Note 1: The presence of a Schottky diode for clamping bus overshoots will cause additional delays of signal edges. These delays are the result of diode characteristics such as forward voltage, diode capacitance and the reverse recovery phenomenon. The ground clamp diode is most critical, particularly if VLSI circuits such as static or dynamic memories are directly connected to busses without any buffer stages. The incremental delay observed on a positive edge following a negative transition that forward biased the Schottky diode is less than 800 pS. That represents less than 10% of the 125 MHz (8 nS period) bus cycle time.

Typical Performance Curves

None available at time of printing