

## How to get started

### License

Microsoft offers fair and reasonable licensing terms. Commercial Licensees of the InstaLoad technology receive a license to the use of the issued patent and patent applications and a detailed technical application guide on the InstaLoad battery installation technology providing the parameters and best practices for implementing the assembly into the design of battery operated devices. Commercial Licensees also receive the rights to use the InstaLoad trademark on their product packaging and marketing materials.

### Next Steps

- ◆ Send an email to Microsoft IP Licensing at: [askmsip@microsoft.com](mailto:askmsip@microsoft.com) with the subject "InstaLoad"
- ◆ Sign a Non Disclosure Agreement and learn more about InstaLoad technology
- ◆ If InstaLoad sounds right for your product, sign a no charge Evaluation Agreement and receive a DVD video, Application Guide and working demo unit
- ◆ Start your product prototyping



Information on Microsoft's Hardware Intellectual Property licensing program is available at:

<http://www.microsoft.com/hardware>

Select the "IP Licensing" link

**Microsoft**

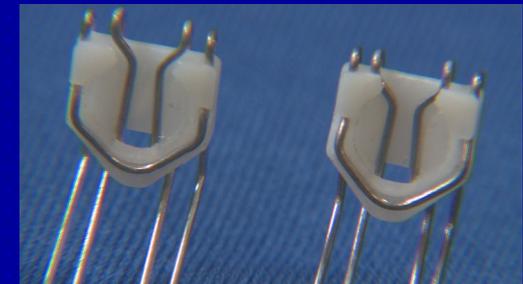
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## Battery Installation Technology



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# Introducing Microsoft InstaLoad Battery Installation Technology

## Introduction

Users sometimes insert batteries incorrectly. Either they cannot remember or do not know what the positive and negative contacts look like, they may have troubling seeing or finding the battery polarity label that defines the direction of battery installation, or they may be careless.

Inserting the batteries in the wrong direction can prevent the device from working, and in some cases can result in permanent damage to the device. Microsoft has a patented technology which offers a cost effective broadly applicable solution to address this common problem. This technology, referred to as *InstaLoad™ Battery Installation Technology* is now offered for license to suppliers of battery operated devices.

Battery contacts designed around the InstaLoad technology enable users to insert batteries into a device in either + or - direction and the device simply works. Users do not have to search for a hard to read diagram to determine how to insert the batteries.

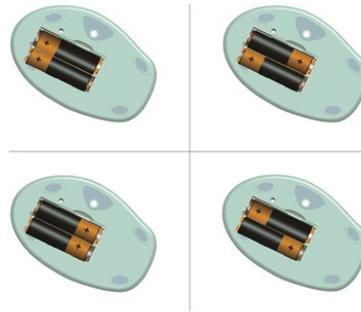


## Benefits and Uses

InstaLoad technology is helpful when used in devices that:

- ◆ Use multiple batteries
- ◆ Require frequent battery swap out
- ◆ May be damaged by having the battery inserted incorrectly
- ◆ Require battery replacement at inconvenient times or locations

For device suppliers, InstaLoad technology can help to differentiate your products while offering a better customer experience.



The figure above shows an example of a battery compartment of a mouse with the InstaLoad technology. The two batteries can be inserted in any of the four possible orientations and the device operates.

## Battery Sizes

InstaLoad technology can be used with AA, AAA, C, D batteries. Devices that require cylindrical form factor batteries (disposable and rechargeable) can use the InstaLoad technology, including less common cylindrical battery sizes such as CR123.

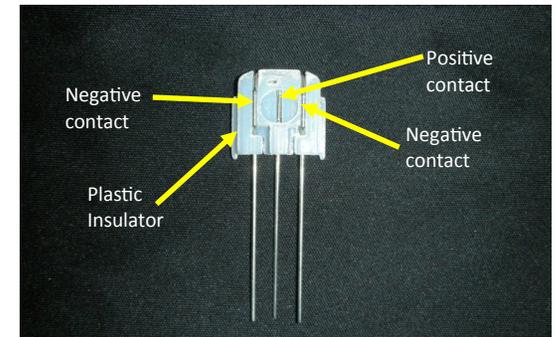


## Typical Product Applications

Portable lighting, flashlights, battery chargers, toys, consumer electronics, mice and keyboards, and other battery operated devices using standard off-the-shelf cylindrical batteries can use InstaLoad technology.

## General Architecture

InstaLoad is a mechanical battery contact design that does not require special electronics or circuitry. The InstaLoad battery configuration includes a set of positive and negative contacts at both ends, instead of a single positive contact at one end and a single negative contact at the other end.



The core of the InstaLoad technology is the individual battery contacts assembly. The relationship between the battery terminals and the InstaLoad battery contacts is shown in the figure below. At one end of the battery, the battery interfaces with either the positive contacts (light gray) or the negative contacts (black). The battery interfaces with the opposite contact at its other end. When coupled with PCB traces, proper power polarity is automatically delivered to the device.

