



Low Profile Switches

Product Training Module



Service ♦ Selection ♦ Speed



Introduction

Purpose

- Introduce designer and engineers to a range of low profile switches available from E-Switch.

Objective

- Explain the advantages of low profile switches.
- Provide an overview regarding the types of low profile switches.
- Review most common applications that utilize low profile switches.

Content

- 9 pages

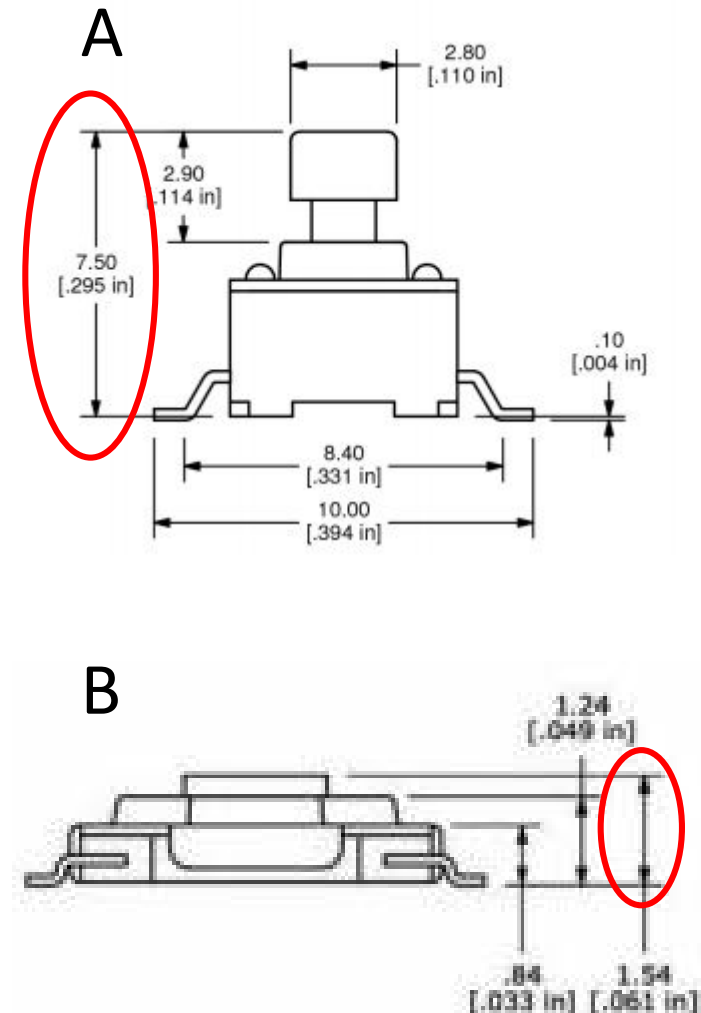
Advantages of Low Profile Switches

Compact size and low profile switches are in demand as some industries focus on light weight portable products. Streamline design applications have limited space for the switch.

“Low profile” refers to the overall height of a switch. This measurement is taken from the bottom of the switch to the top of the switch as in figure A where the profile measures 7.50mm. Figure B has a lower profile of 1.54mm.

Advantages of low profile switches include the following:

- Fit compact space
- Reduces overall package height
- Surface mount design
- Style Options – tact, detector, dip, navigation
- Profile range from .35mm to 3.50mm
- Multiple operating force options
- Many with long cycle life



Low Profile Switch Styles

E-Switch offers several low profile switch styles. Those styles include:

- Tact
- Detector
- Dip
- Navigation
- Slide

Several of the tact switches offer options such as right angle design, multiple operating force, illumination and process sealed or IP rated.

The detector and slide switches offer long travel, up to 3.0mm. The selection of dip switches provide up to 12 positions and 5 positions are available on the navigation switches.

Tact



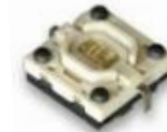
TL3312



TL3342



TL3780



TL3215



TL1014



TL4110

Detector



TD4700



TD1146



900 Series

Dip



KAN



KAE

Navigation

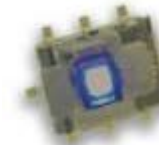


JS1300



JS1400

Slide



EGL2290



EG1315

Applications for Low Profile Switches

Typically a low profile switch comes in a small package size, which makes them ideal for the wearable technology and handheld devices market. Tact switches are particularly common in this market segment.

These applications would include many of the “smart” devices such as phones, glasses, tablets, security devices, thermostats, lighting controls and numerous types of tracking and monitoring gadgets not only for health and fitness, but the baby and the dog too!

The following industries require low profile switches for many products:

- Wearable and Handheld Technology
- Health & fitness trackers
- Security devices in the form of jewelry
- Internet of Things Technology
- Smart Home Technology Devices
- Telecommunication Equipment
- Networking/Computer/Server Equipment
- Consumer Electronics



Applications for Edge Mount Tact Switch

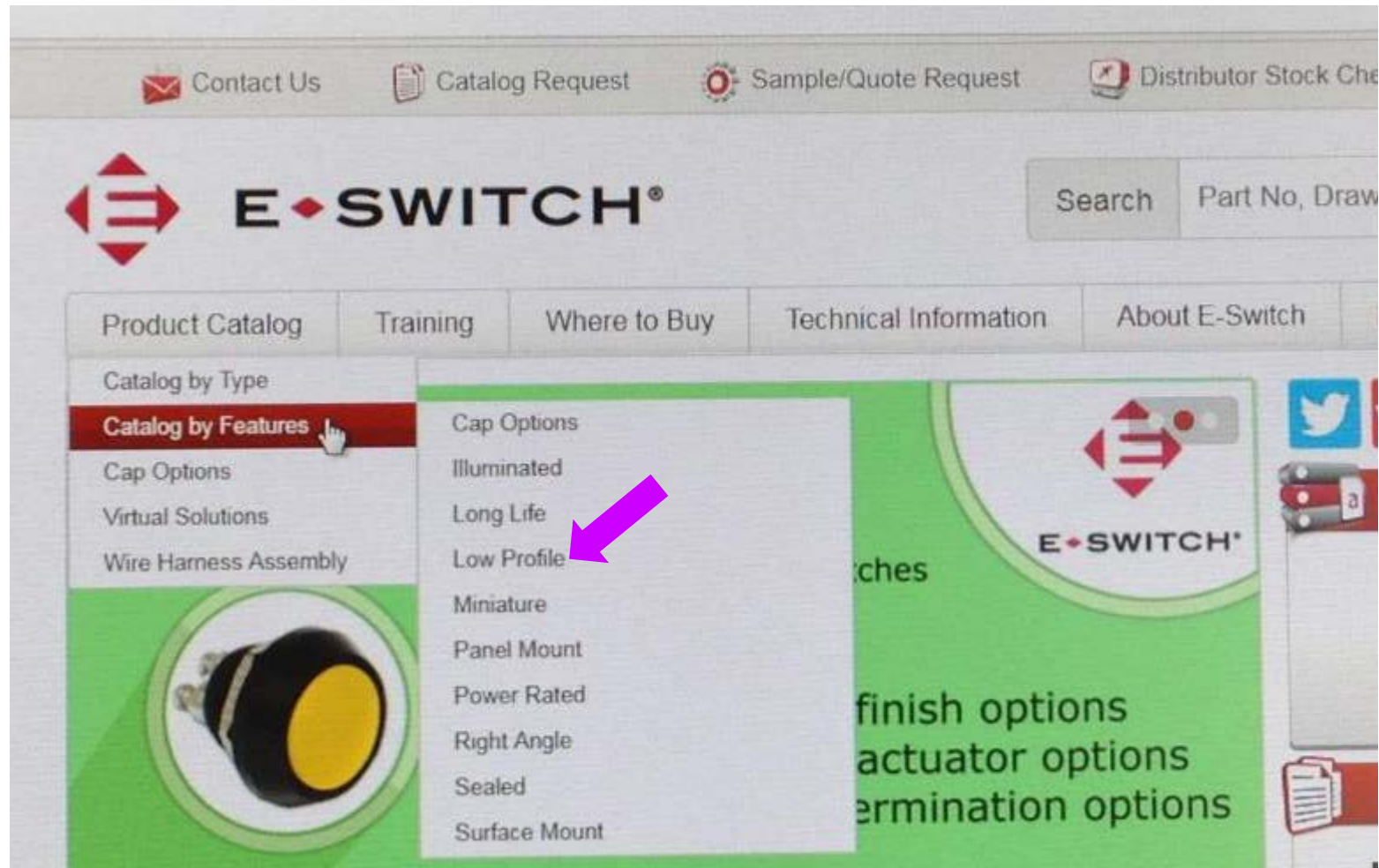
Besides the growing wearable and smart devices market, several other market applications utilize slide, navigation, dip and detector switches which have a compact body design with a low profile. Those markets include:

- Audio/Visual Equipment
- Computer Peripherals
- Medical & Dental Equipment
- Testing & Monitoring Devices
- Instrumentation Equipment
- Houseware Appliances
- Power Tools
- Navigation Devices
- Gaming Devices



Resources

www.e-switch.com Home Page





Resources

www.e-switch.com

The screenshot shows the E-Switch website homepage. At the top, a navigation bar contains links: [Contact Us](#), [Catalog Request](#), [Sample/Quote Request](#) (circled in blue), [Distributor Stock Check](#), and [Extranet Login](#). Below this is the E-Switch logo and a search bar with the text "Search Part No, Drawing, Series" and a "GO" button. A secondary navigation bar includes links for [Product Catalog](#), [Training](#), [Where to Buy](#), [Technical Information](#), [About E-Switch](#), and the phone number **800.867.2717**. The main content area features a large green banner for "PV5 Long Life Anti-vandal Switches" with a list of features: ✓ IP65 rated, ✓ Multiple actuator finish options, ✓ Raised or domed actuator options, and ✓ Solder or screw termination options. To the right of the banner are social media icons and a "3D Models" section (circled in blue) with a "Request 3D Model" button. Below the banner is a "Product Catalog" section listing various switch types with corresponding images: Anti-vandal, Detector, DIP, Keylock, and Navigation. To the right of the catalog is a "PVA6(L) Latching Version" section labeled "New" with a "Switch Features" list: Ring Illumination and Solderless Termination. On the far right is a "Product Matrix" section with a "Download" button.

[Contact Us](#) [Catalog Request](#) [Sample/Quote Request](#) [Distributor Stock Check](#) [Extranet Login](#)

E-SWITCH® Search Part No, Drawing, Series **GO**

[Product Catalog](#) [Training](#) [Where to Buy](#) [Technical Information](#) [About E-Switch](#) **800.867.2717**

FEATURED

PV5
Long Life Anti-vandal Switches

- ✓ IP65 rated
- ✓ Multiple actuator finish options
- ✓ Raised or domed actuator options
- ✓ Solder or screw termination options

3D Models
[Request 3D Model](#)

Product Matrix
[Download](#)

Product Catalog

- Anti-vandal
- Detector
- DIP
- Keylock
- Navigation

PVA6(L)
Latching Version

New


Switch Features

- Ring Illumination
- Solderless Termination

Resources

Data Sheet

TL4110 SERIES TACT SWITCH



APPLICATIONS / MARKETS

Medical Devices

Smart # Things

Industrial Control

Automotive

Consumer Electronics

Industrial Machinery

RoHS

SPECIFICATIONS

Contact Rating: 20mA @ 15VDC
Electrical Life: 300,000 @
Contact Resistance: 50mΩ Max
Insulation Resistance: 250MΩ Min @ 100VDC
Tensile Strength: 250mN for 1 Minute
Operating Temperature: -40°C to 85°C
Storage Temperature: -40°C to 85°C
Travel: 0.13mm
Contact Arrangement: SPST
Actuation Force: 100gf

FEATURES & BENEFITS

- Surface Mount Switch
- Long Cycle Life of 300,000 Cycles
- Extremely Small Surface profile of 2.8mm x 2.8mm
- Switch Mounts along the edge of the PCB for Right Angle Actuation
- 100 gram force

PART NUMBER CONFIGURATOR

Series

TL4110

Actuator

A-0.05mm

Actuation Force

100-150 gf

Contact Material

6-Steel


Consultation subject to change without notice

E-SWITCH®

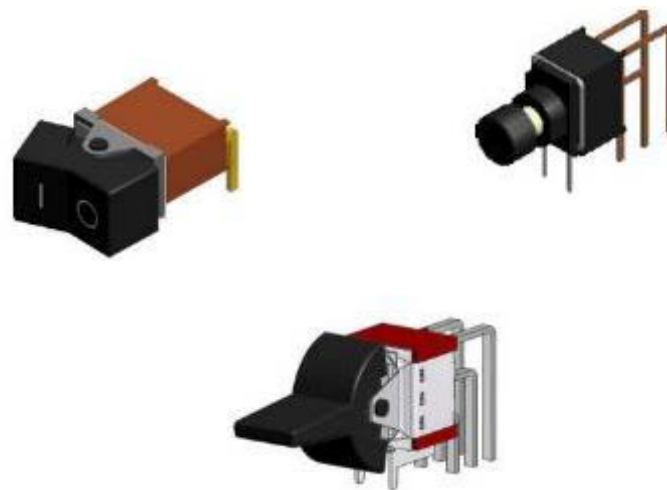
www.e-switch.com

800.667.3717

Switch Samples

A vertical column of five images showing different switch samples. From top to bottom: 1. A small, rectangular, surface-mount switch with a green PCB and a single gold pin. 2. A larger, rectangular, surface-mount switch with a silver PCB and multiple pins. 3. A cylindrical, through-hole switch with a black body and a blue actuator. 4. A small, rectangular, surface-mount switch with a gold PCB and multiple pins. 5. A small, rectangular, surface-mount switch with a gold PCB and multiple pins.

3D Models

Three 3D CAD models of different switch types. Top left: A rectangular, surface-mount switch with a black body and a gold pin. Top right: A cylindrical, through-hole switch with a black body and a blue actuator. Bottom: A larger, rectangular, surface-mount switch with a black body and multiple pins.



Summary

- E-Switch offers several types of low profile switches.
- E-Switch offers several types of right angle switches including pushbutton, tact, detector, navigation, slide and DIP.
- Key advantages include - fit compact space, reduces overall package height, provide surface mount design, offer profile height ranging from .35mm to 3.50mm, provide multiple operating force options and many low profile switch provide a long cycle life.
- Low profile tact switches are particularly common in the wearable technology and handheld devices market due to their attributes. Markets include: health & fitness trackers, security devices in the form of jewelry, internet of things technology and smart home technology devices.
- Slide, navigation, dip and detector switches which have a compact body design with a low profile are utilized in the following markets: audio/visual equipment, computer peripherals, medical & dental equipment, testing, monitoring and instrumentation devices, houseware appliances, power tools, navigation devices and gaming devices.