



Switches for the Wearable & Handheld Devices Market

Product Training



Service ♦ Selection ♦ Speed



Introduction

Purpose

- Present to customers how E-Switch's miniature switches fit in the Wearable Technology and Handheld Devices market

Objective

- Brief overview of wearable technology and hand-held devices market
- Review the types of miniature switches that apply to wearable and hand-held device products
- Provide typical applications for various miniature switches

Content

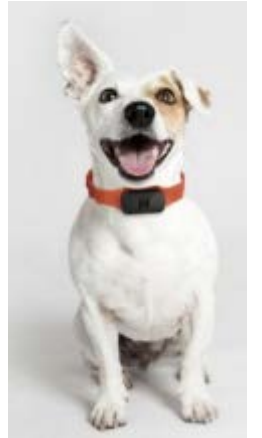
- 14 pages

Overview

Wearable and Hand-held Technology Market Estimated \$35 Billion by 2020

Wearable and hand-held technology combines all of the tracking, collecting and communicating power of current mobile devices with an intimate level of personal information captured in real-time.

- Wearable products for all ages
- Encompasses all business sectors
 - Healthcare
 - Sports and fitness
 - Travel
 - Entertainment
 - Military Forces
 - Manufacturing
 - Safety monitoring for home, adults, children and pets



Overview

Smart Gadgets come in many different forms, such as:

- Watches and Wristbands
- Rings/Pendants (Jewelry)
- Mobile Phones
- Tags
- Earphones/Hearing Aids
- GPS-enabled Cameras
- Digital Glasses
- Clothing (function & fun)
- Patches
- Monitoring Devices



Miniature Switch Types for Wearable/Handheld Technology

BIG Tech, Tiny Package

Compact wearable devices = compact components

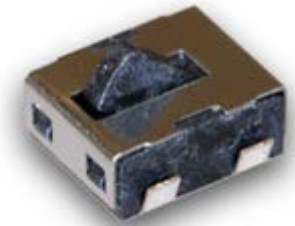
- Miniature and micro-miniature tact switches
- Miniature navigation switches
- Miniature detector switches



Miniature and Micro-miniature Tact Switches



Navigation Switch



Detector Switch

Features – Tact Switches

Miniature Tact Switches provide:

- Micro-miniature, as small as 3.0mm x 2.0mm x 0.55mm
- Low Profile
- Surface Mount Design (typically)
- Right Angle Actuation Options
- Illumination Options
- Actuation Force Options



TL3750

**Micro-miniature
Ultra low profile**



TL3313

**Surface Mount Miniature
Low profile**



TL6120



TL1014

**Right Angle Actuation
Low Profile**



TL3200

**Illuminated Miniature
Low profile**



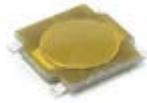
Micro-Miniature TACT Wearable/Hand-held Applications

TL1015



4.4mm x 2.9mm
2.0mm profile

TL3315



4.5mm x 4.5mm
0.55mm profile

TL3365



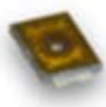
4.2mm x 3.2mm
2.5mm profile

TL3700



3.0mm x 2.6mm
0.65mm profile

TL3750



3.0mm x 2.0mm
0.58mm profile

TL3780



3.0mm x 2.0mm
0.55mm profile



Miniature TACT Wearable/Hand-held Applications

TL3301



6.0mm x 6.0mm
Ten profile options

TL3302



3.5mm x 6.0mm
4.3mm profile

TL3303



6.0mm x 6.0mm
3.10mm profile

TL3305



4.5mm x 4.5mm
Profile options:
3.8mm, 5.0mm, 7.0mm

TL3313



4.8mm x 4.8mm
1.5mm profile

TL3342



5.0mm x 5.0mm
1.54mm profile

TL6120



7.4mm x 7.4mm
4.7mm profile

TL6700



6.2mm x 6.9mm
3.4mm profile

TL9210



6.0mm x 6.0mm
5.0mm profile



intraoral camera

Oximeter



Light belt



Electronic Timer



surgical endoscopic

Right Angle Mount and Illuminated TACT Wearable/Hand-held Applications

Right Angle Mount Switches

TL1014



6.4mm x 4.5mm
1.65mm profile

TL3330



3.4mm x 7.8mm
3.5mm profile

TL3340



4.0mm x 3.3mm
3.4mm profile

TL3360



6.0mm x 6.5mm
Profile options:
(mm) 2.3, 2.8, 4.0, 4.35

TL3901



7.3mm x 6.0mm
2.3mm profile

TL4100



6.2mm x 2.5mm
2.0mm profile

TL4105



4.8mm x 2.20mm
2.9mm profile



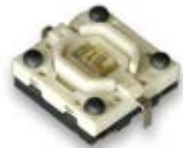
Illuminated Tact Switches

TL3200



4.5mm x 6.8mm
2.0mm profile

TL3215



4.9mm x 4.9mm
2.0mm profile

TL6210



6.2mm x 4.6mm
3.72mm profile



Navigation Switches Features and Applications

Miniature Navigation Switches provide:

- 5 Position Navigation with Center Push
- Surface Mount Design
- Low Profile

JS1300



9.8mm x 9.8mm
1.55mm profile

JS1400



9.0mm x 9.0mm
2.8mm profile



Detector Switches Features and Applications

Micro-miniature Detector Switches provide:

- Dimensions as Small as 3.5mm x 3.0mm
- Ultra Low Profile
- Surface Mount Design
- Over-travel



TD4700



3.5mm x 3.0mm
2.53mm profile

TD1146



4.8mm x 5.0mm
3.8mm profile



Resources

www.e-switch.com

The image shows a screenshot of the E-Switch website. At the top, there are navigation links: Contact Us, Catalog Request, Sample/Quote Request, and Distributor. The E-Switch logo is prominently displayed. Below the logo, there are navigation tabs: Product Catalog, E-Cross™, Where to Buy, Technical Information, and About E-Switch. A purple arrow points to the 'Product Catalog' tab, which has a dropdown menu open. The dropdown menu includes 'Catalog by Type', 'Catalog by Features', and 'Cap Options'. The 'Catalog by Features' sub-menu is expanded, listing various features: Cap Options, Illuminated, Long Life, Low Profile, Miniature (highlighted with a red bar), Panel Mount, Power Rated, Right Angle, Sealed, and Surface Mount. A purple arrow points to the 'Miniature' option.

The main content area features a large green banner for 'Micro Tact Switch' with the text 'CLICK HERE For More Information!'. Below this, there is a product detail page for the 'TL1014 Series Micro-Miniature Right Angle SMT Tact' switch. The product image shows a small, rectangular component. A purple arrow points to the product image. Below the image are three buttons: 'View Large Image', 'View PDF Data Sheet', and 'Distributor Stock Check'. A purple arrow points to the 'View PDF Data Sheet' button. To the right of the image, there is a 'Specifications' section with a 'RoHS' heading and a list of other switch types: Other tact switches, Other right angle switches, Other surface mount switches, and Other miniature switches. A purple arrow points to the 'RoHS' heading. Below the specifications, there are tabs for 'Product Configurator', 'Detail Specs', and 'Spec Sheets'. A purple arrow points to the 'Spec Sheets' tab. At the bottom, there is a 'Product Configurator' section with two steps: 'Step 1: Configure your part number by selecting from the columns below.' and 'Step 2: When your part number is complete, click to view additional options.' There is a 'PART NUMBER:' field with a 'Clear' button and an 'Additional Options' button. To the right, there is a 'Most Common Parts' section listing several part numbers: TL1014BF220Q6, TL1014AF220Q6, TL1014BF160Q6, and TL1014AF160Q6.

Resources

www.e-switch.com

The image shows a screenshot of the E-Switch website's navigation bar and promotional banners. The navigation bar includes links for Contact Us, Catalog Request, Sample/Quote Request (circled in purple), and Distributor Stock Check. Below the navigation bar is the E-Switch logo, an Extranet Login link, and a search bar with the text "Part No, Drawing, Series" and a "GO" button. A horizontal menu contains links for Product Catalog, E-Cross™, Where to Buy, Technical Information, and About E-Switch. The phone number 800.867.2717 is displayed below the menu. The main content area features a large orange banner for "INTRODUCING... E-Switch Virtual Solutions" with a grid of product images and a "CLICK HERE to interact with our virtual solutions" call to action. To the right, there are two smaller banners: "3D Drawings" with a circled "Request 3D Drawings" button (circled in purple) and "Product Matrix" with a small product image.

Contact Us Catalog Request **Sample/Quote Request** Distributor Stock Check

Extranet Login

E-SWITCH®

Search Part No, Drawing, Series **GO**

Product Catalog E-Cross™ Where to Buy Technical Information About E-Switch

800.867.2717

INTRODUCING... E-Switch Virtual Solutions

Our complete array of anti-vandal switches... at your fingertips!

CLICK HERE to interact with our virtual solutions

E-SWITCH®

3D Drawings

Request 3D Drawings

Product Matrix



Summary

- E-Switch offers miniature and micro-miniature Tact, Navigation, Detector switches for the wearable and hand-held technology market.
- Miniature Tact Switches provide a size range from miniature to micro-miniature, low profile, surface mount design, right angle options, illuminated options and actuation force options.
- Typical applications include fitness wristbands, digital (smart) glasses, mobile phones, clothing and jewelry items, plus a host of monitoring devices.
- Miniature navigation switches provide 5 position navigation with center push, surface mount design, very low profile.
- Applications include screen-sticks for smart devices, telecommunication devices and consumer electronics where user interface is needed.
- Detector switches provide micro-miniature dimensions, low profile, surface mount design and over-travel.
- Application for miniature detector switches include consumer electronics, telecommunications and networking devices.