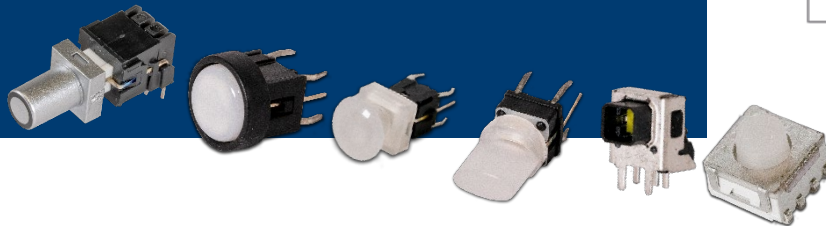




Series 228 Illuminated Tact Switch








Agenda



- Product Overview by Model
- Key Specifications
- Features & Benefits
- Target Applications
- Value Proposition
- Available Sales Collateral





Series 228 Illuminated Tact Switch

Photo	Series	Dimension	Mounting Style	Key Specifications
	228A	6.8 x 7.2 x 4.5mm 7.2 x 7.0 x 4.5mm	SMT Gull-Wing Std Through Hole	Life: 100,000 cycles Actuator Travel: 0.25 mm Actuation Force: 160 gf Operating Temp: -25° to 70°C
Optional Caps	Std.: 			Custom: 
Features/ Benefits	<ul style="list-style-type: none"> ■ SMT & TH mounting options ■ Single & bi-LED options ■ Variety of LED color options ■ Variety of cap options ■ Laser marking options ■ Customized caps are available 			Applications <ul style="list-style-type: none"> ■ Audio Visual Equipment ■ Consumer/IT Electronics ■ Telecommunication Devices ■ Instrumentation Equipment ■ Medical Devices




Series 228 Illuminated Tact Switch

Photo	Series	Dimension	Mounting Style	Key Specifications
	228B	6.0 x 6.6 x 4.8mm	SMT Gull-Wing Std Through Hole	Life: 100,000 cycles Actuator Travel: 0.25 mm Actuation Force: 160 gf Operating Temp: -20° to 70°C
Optional Caps	Std.:  Custom: 			
Features/ Benefits	<div> <ul style="list-style-type: none"> ■ Terminal spacing compatible with DIP IC pitch ■ Single & bi-LED options ■ Variety of LED color options ■ Variety of std caps available ■ Etching options available ■ Custom caps are available </div> <div>Applications</div> <div> <ul style="list-style-type: none"> ■ Audio Visual Equipment ■ Consumer/IT Electronics ■ Telecommunication Devices ■ Instrumentation Equipment ■ Medical Devices </div>			

Series 228 Illuminated Tact Switch

Photo	Series	Dimension	Mounting Style	Key Specifications
	228C	6.8 x 7.2 x 4.5mm 7.2 x 7.0 x 4.5mm	SMT Gull-Wing Std Through Hole	Life: 100,000 cycles Actuator Travel: 0.25 mm Actuation Force: 160 gf Operating Temp: -20° to 70°C
Optional Caps	Standard:      			
Features/ Benefits	<ul style="list-style-type: none"> ■ SMT & TH mounting options ■ Single, bi and tri-LED options ■ Variety of LED color options ■ Variety of cap options ■ Laser marking options ■ Custom caps are available 			Applications <ul style="list-style-type: none"> ■ Audio Visual Equipment ■ Consumer/IT Electronics ■ Telecommunication Devices ■ Instrumentation Equipment ■ Medical Devices ■ Gaming Keyboard

Series 228 Illuminated Tact Switch

Photo	Series	Dimension	Mounting Style	Key Specifications
	228D	6.8 x 5.0 x 6.2mm	SMT Gull-Wing Std Through Hole	Life: 100,000 cycles Actuator Travel: 0.25 mm Actuation Force: 220 gf Operating Temp: -25° to 70°C
Optional Caps	Std.: 	Customized: 		
Features/ Benefits	<ul style="list-style-type: none"> ■ SMT & TH mounting options ■ Single & bi-LED options ■ Variety of LED color options ■ Variety of cap options ■ Etching options available ■ Custom caps are available 			Applications <ul style="list-style-type: none"> ■ Audio Visual Equipment ■ Consumer/IT Electronics ■ Telecommunication Devices ■ Instrumentation Equipment ■ Medical Devices



Series 228 Illuminated Tact Switch

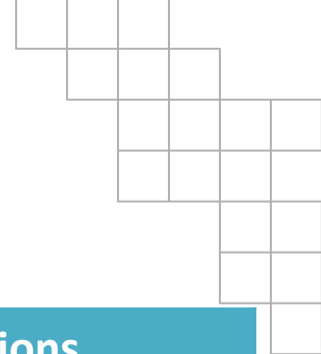

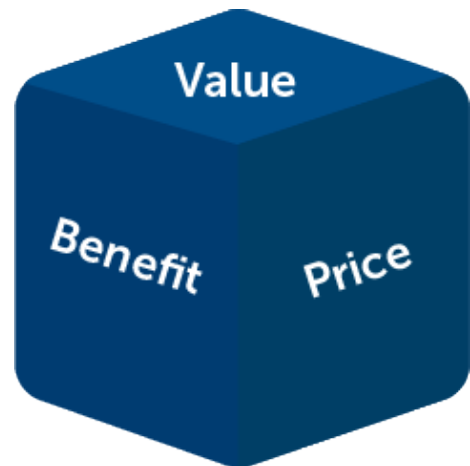


Photo	Series	Dimension	Mounting Style	Key Specifications
	228E	6.8 x 7.2 x 3.6mm 7.4 x 7.9 x 4.7mm	SMT Gull-Wing SMT J-Bend Std Through Hole	Life: 100,000 cycles Actuator Travel: 0.7 mm Actuation Force: 200 gf Operating Temp: -40° to 85°C Seal Rating: IP67
Features/ Benefits				<ul style="list-style-type: none">■ Sealed for immersion■ SMT & TH mounting options■ Single, bi and tri-LED options■ Variety of LED color options
			Applications	<ul style="list-style-type: none">■ Audio Visual Equipment■ Consumer/IT Electronics■ Telecommunication Devices■ Instrumentation Equipment■ Medical Devices

Series 228 Product Target Market Segments/Applications

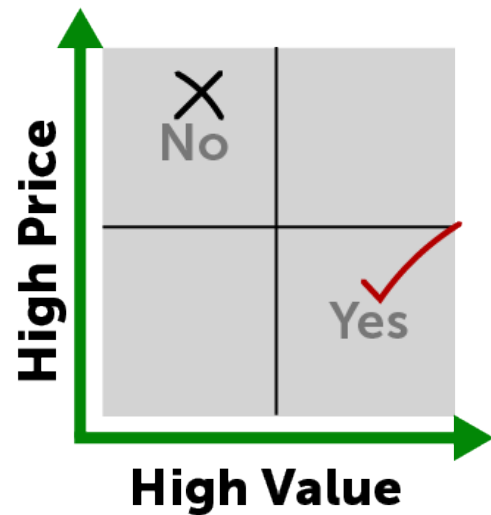


Series 228 Product Value Proposition



The Series 228 product line provides a variety of illuminated tact switch solutions in a variety of mounting configurations with various optional switch caps to meet engineering design needs offered at a competitive price.

- Long life of 100,000 cycles is standard for all 228 models.
- Model 228E provides a standard IP67 seal for those applications that are subject to continuous humid environments.
- Standard and custom cap options available on request.
- Custom marking is available on request.
- As a pioneer of modern DIP switch technology, CTS strives to provide reliable switch solution products for industrial, consumer and medical applications, and is continuing to expand the switch portfolio with the release of the Series 228 product line.



Series 285 Product Collateral

Series 228A

7.2 x 6.8mm Illuminated Tactile Switch

- Surface mount gull-wing terminal and standard through hole configurations
- Compatible with IR reflow, and manual soldering
- Single color display during illumination
- Variety of LED color options
- Variety of cap styles, colors, and laser etching options

Ordering Information

Series	Terminal Type	Actuating Direction	Actuation Force	LED Color	LED Type
228A	M	V	A	R	F

Code Spec.

D Standard through hole (black actuator)

M Surface mount gull wing (black actuator)

Code Spec.

V Vertical

*S1 Side, with 4 pairs of terminals

*S2 Side, with 3 pairs of terminals

*S1 and S2 are only available with Cap Style: C, Flat LED, and through hole terminals

Code Spec.

A 160 gf

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Series 228B

6.0 x 6.0mm Illuminated Tactile Switch

- Surface mount gull-wing terminal and standard through hole configurations
- Compatible with IR reflow, and manual soldering
- Single color display during illumination
- Variety of LED color options
- Variety of cap shape, color, laser etching options

Ordering Information

Series	Terminal Type	Actuating Direction	Actuation Force	LED Color	LED Type
228B	M	V	A	R	F

Code Spec.

D Standard through hole (white actuator)

M Surface mount gull wing (black actuator)

Code Spec.

V Vertical

Code Spec.

A 160 gf

Note: Not all part number combinations are available. Please review the notes on the following pages.

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Series 228C

7.2 x 6.8mm Illuminated Tactile Switch

- Surface mount gull-wing terminal and standard through hole configurations
- Compatible with IR reflow, and manual soldering
- Single, Bi-color or Tri-color display during illumination
- Variety of LED color options
- Variety of cap styles, colors, and laser etching options

Ordering Information

Series	Terminal Type	Actuating Direction	Actuation Force	LED Color	LED Type
228C	M	V	A	R	F

Code Spec.

D Standard through hole (white actuator)

M Surface mount gull wing (black actuator)

Code Spec.

V Vertical

Code Spec.

A 160 gf

Code Spec.

R Red

Y Yellow

G Green

B Blue

W White

A Amber

RG Red & Green

RB Red & Blue

YG Yellow & Green

RA Red & Amber

AW Amber & White

RGB Red, Green & Blue

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Series 228D

6.8 x 5.0mm Illuminated Tactile Switch

- Surface mount gull-wing terminal and standard through hole configurations
- Compatible with IR reflow, and manual soldering
- Single color display during illumination
- Variety of LED color options
- Variety of cap styles, colors, and laser etching options

Ordering Information

Series	Terminal Type	Actuating Direction	Actuation Force	LED Color	LED Type
228D	M	S1	A	R	F

Code Spec.

D1 Standard through hole (black actuator), terminal length 1.5mm

M Surface mount gull wing (black actuator)

Code Spec.

S1 Side, height: 3.5mm from cap center to PCB

Code Spec.

A 220 gf

Code Spec.

R Red

Y Yellow

G Green

B Blue

W White

A Amber

RG Red & Green

RB Red & Blue

YG Yellow & Green

RA Red & Amber

AW Amber & White

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Series 228E

7.2 x 6.8mm IP67 Rated Illuminated Tactile Switch

- Surface mount gull-wing terminal and standard through hole configurations
- IP67 protection
- Compatible with IR reflow, and manual soldering
- Single or Tri-color display during illumination
- Variety of LED color options

Ordering Information

Series	Terminal Type	Actuating Direction	Actuation Force	LED Color	LED Type	Packaging
228E	M	V	A	R	F	R

Code Spec.

D Standard through hole (white actuator)

M Surface mount gull wing (white actuator)

J "J" bend terminal (white actuator)

Code Spec.

V Vertical

S Side

Code Spec.

A 200 gf

Code Spec.

R Red

Y Yellow

G Green

B Blue

W White

A Amber

RG Red & Green

RB Red & Blue

YG Yellow & Green

RA Red & Amber

AW Amber & White

RGB Red, Green, & Blue (only available for vertical actuation)

Code Spec.

A 200 gf

Code Spec.

R Tape & reel packaging (not available for vertical standard through hole type)

Blank (only available for vertical standard through hole type)

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Switch website landing page

https://www.ctscorp.com/sense_product_line/tactile-switches/

Switch brochure

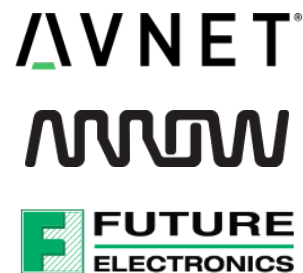
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Series 228 Product Availability

e-Catalog Distributors



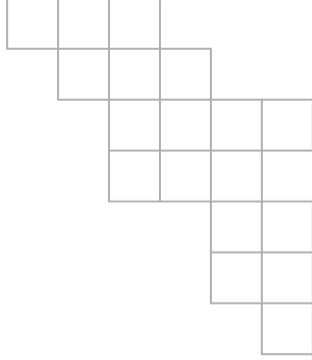
Global Distributors



Regional Distributors



- Inventory is readily available at e-Catalog distributors worldwide
- A comprehensive network of established global supply chain distributors are ready to assist
- World-class local language customer support is available to help with designs and production



Thank you

