

### Side Actuated, Surface Mount DIP Switches

#### Features

##### Optimized Mechanical Features

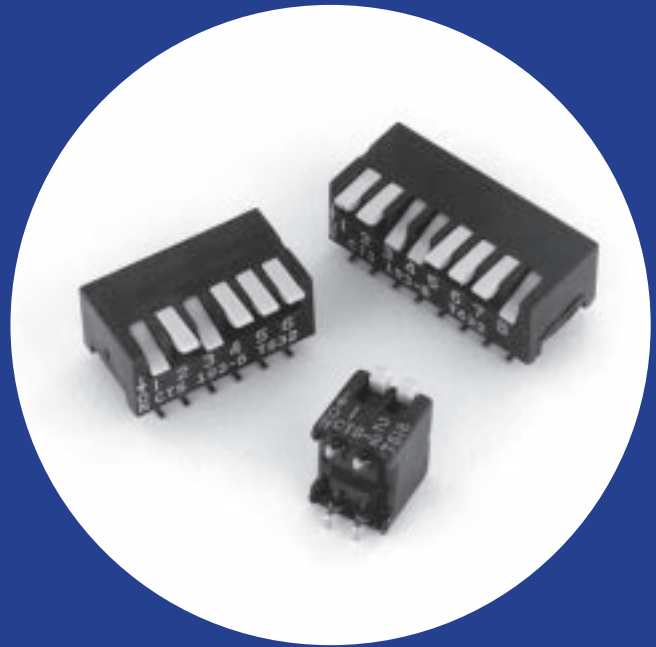
- Coplanarity: 0.1mm/.004" maximum
- Enclosed actuators shield contacts from foreign particles throughout life of switch
- Gull-wing terminal configuration
- Tube or tape and reel packaging available

##### Optimized Contact System

- Contact wiping action on make and break
- Integral terminal and contact locked into thermoset base
- Lock-over-center design provides positive detent action
- Optimized, active contact design incorporating dimple-to-flat surface wiping interface with high contact force

##### Materials

- Gold plated, copper alloy contacts.
- High temperature body and actuator materials (UL 94V-0)
- RoHS compliant



### Electrical and Mechanical Specifications

#### Switch Function

SPST-2 through 10 positions

#### Switch Contact Resistance

50 milliohms maximum initial  
100 milliohms maximum at end of life

#### Insulation Resistance

1,000 megohms minimum across open switch  
1,000 megohms minimum between adjacent closed switches

#### Dielectric Strength

500 VAC minimum for 1 minute between adjacent switches

#### Nonswitching Rating

100 mA or 50 VDC maximum

#### Switch Capacitance

5.0 pF maximum between adjacent closed switches

#### Operating Temperature

-40°C to +85°C

#### Actuation Life

7,000 cycles switching 50 mA @ 24 VDC

#### Coplanarity

Coplanarity of 0.1mm / .004" max

#### Allowable Solder Time

IR and Vapor Phase - up to 60 seconds at 260°C  
Wave - up to 5 seconds at 260°C

#### Vibration

Per MIL-STD-202F, method 204D, condition B (.06" or 15G'S between 10 HZ to 2K HZ) with no contact inconsistencies

#### Shock

Per MIL-STD-202F, method 213B, condition A (25G'S) with no contact inconsistencies

#### Sealing

Bottom epoxy seal standard

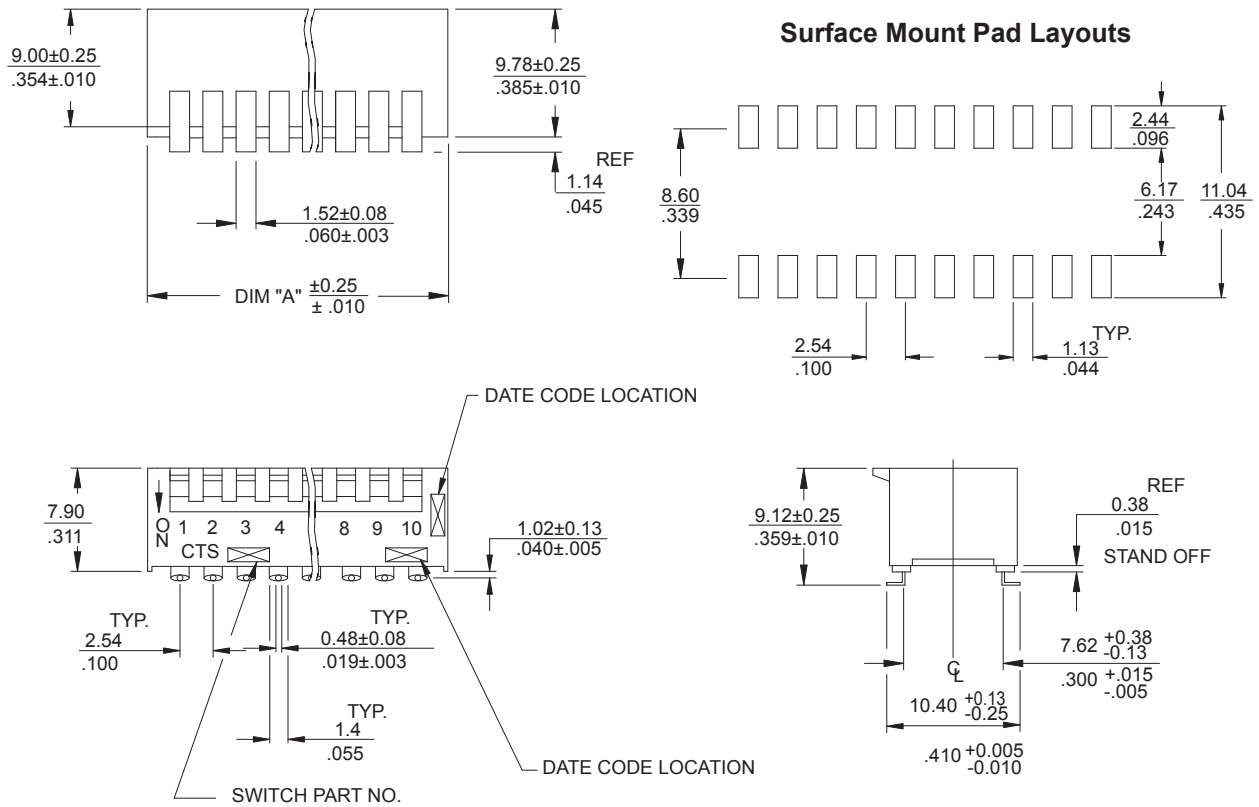
#### Marking

Special side or top marking available-consult CTS

#### Packaging

Standard : Anti-Static tube packaging  
Optional : Tape and Reel packaging

# CTS SERIES 193



DIMENSION:  $\frac{\text{mm}}{\text{inch}}$

"A" Overall Dimensions	No. of Switch Positions	Part Number
7.26 / .286	2	193-2MS
9.80 / .386	3	193-3MS
12.34 / .486	4	193-4MS
14.88 / .586	5	193-5MS
17.42 / .686	6	193-6MS
19.96 / .786	7	193-7MS
22.50 / .886	8	193-8MS
25.04 / .986	9	193-9MS
27.58 / 1.086	10	193-10MS

## Ordering Information

**193** - **08** **M** **S** **R** - **N** - **P**

XX: # OF POSITIONS

M: MEDIUM LENGTH ACTUATOR  
(1.14mm/.045")

S: BOTTOM EPOXY SEAL

R: TAPE AND REEL PACKAGING  
Available for 2,3,4,6,8 positions,  
consult CTS for other positions

BLANK: Anti-Static Tube Packaging

N: SHIP AT ON POSITION  
BLANK: SHIP AT OFF POSITION

P: RoHS COMPLIANT

BLANK: RoHS COMPLIANT FOR SHIPMENT FROM 7/01/06