## Series 193 SMT DIP Technical D@t̊

## Side Actuated, Surface Mount DIP Switches

## Features

Optimized Mechanical Features

- Coplanarity: $0.1 \mathrm{~mm} / .004$ " maximum
- Enclosed actuators shield contacts from foreign particles throughout life of switch
- Gull-wing terminal configuration
- Compatible with SMT assembly including IR and Vapor-phase (up to $260^{\circ} \mathrm{C}$ )
- SPST configuration,2 through 10 positions


## Optimized Contact System

- Contact wiping action on make and break
- Integral terminal and contact locked into high temperature plastic 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 contacts for long-term contact corrosion resistance
- Tin plated terminals for better solderability
- All UL 94V-0 plastic used
- 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 between insulated terminals
Dielectric Strength
500 VAC 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

$-40^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$

## Actuation Life

7,000 cycles switching 50 mA @ 24 VDC

## Coplanarity

Coplanarity of $0.1 \mathrm{~mm} / .004$ " max
Allowable Solder Time
Up to 60 seconds at $260^{\circ} \mathrm{C}$

## Vibration

Per MIL-STD-202F, method 204D, condition B (.06" or 15 G 'S between 10 HZ to 2 K HZ ) with no contact inconsistencies greater than 1 microsecond

## Shock

Per MIL-STD-202F, method 213B, condition A (50G'S) with no contact inconsistencies greater than 1 microsecond

## 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



| "A" <br> Overall <br> Dimensions | No. of <br> Swith <br> Positions | Part Number |
| :---: | :---: | :---: |
| $7.26 / .286$ | 2 | $193-2 \mathrm{MS}$ |
| $9.80 / .386$ | 3 | $193-3 \mathrm{MS}$ |
| $12.34 / .486$ | 4 | $193-4 \mathrm{MS}$ |
| $14.88 / .586$ | 5 | $193-5 \mathrm{MS}$ |
| $17.42 / .686$ | 6 | $193-6 \mathrm{MS}$ |
| $19.96 / .786$ | 7 | $193-7 \mathrm{MS}$ |
| $22.50 / .886$ | 8 | $193-8 \mathrm{MS}$ |
| $25.04 / .986$ | 9 | $193-9 \mathrm{MS}$ |
| $27.58 / 1.086$ | 10 | $193-10 \mathrm{MS}$ |

## Ordering Information

| $193-10$ M | $S \quad R$ |
| :---: | :---: |
| XX: \# OF POSITIONS |  |
| M: MEDIUM LENGTH ACTUATOR $\qquad$ <br> (1.14mm/.045") |  |
| S: BOTTOM EPOXY SEAL |  |
| BLANK: ANTI-STATIC TUBE PACKAGING <br> R: TAPE AND REEL PACKAGING |  |
| BLANK: SHIP AT OFF POSITION |  |

N : SHIP AT ON POSITION

