

Side actuated, surface mount DIP switches

Features

Optimized Mechanical Features

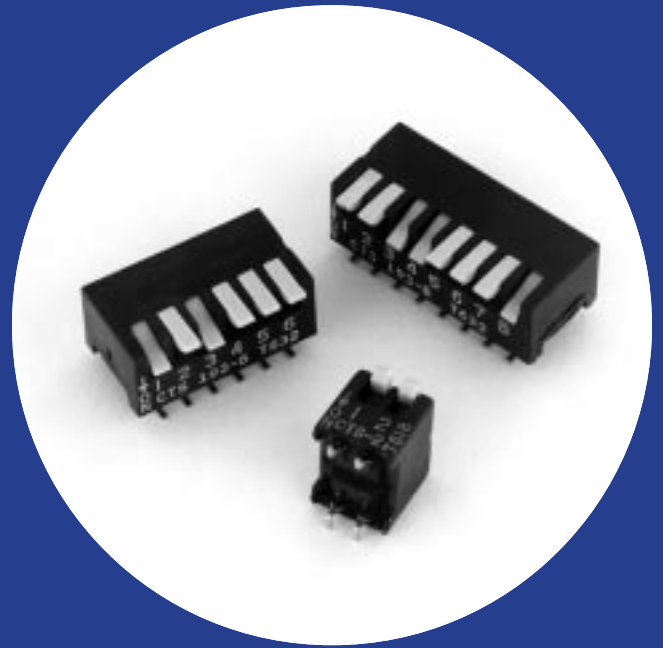
- Coplanarity: 0.1mm/.004" maximum
- Compatible with SMT assembly including IR and Vapor Phase (up to 260°C)
- Enclosed actuators shield contacts from foreign particles throughout life of switch
- Gull-wing terminal configuration
- SPST configurations, 2 through 10 and 12 positions
- Tube or tape and reel packaging available

Optimized Contact System

- Contact wiping action on make and break
- 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.
- Solder coated terminals
- High temperature body and actuator materials (UL 94V-0)



U.S. Patent # 4,389,549

Electrical and Mechanical Specifications

Switch Function

Single pole single throw

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

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 6 seconds at 260°C

Vibration

No mechanical damage or changes of switch settings during or after testing, when tested in three mutually perpendicular planes at 10-50 Hz sweep or at 60 Hz constant vibration

Shock

No mechanical damage or changes of switch settings with 25 G applied

Sealing

Bottom epoxy seal standard

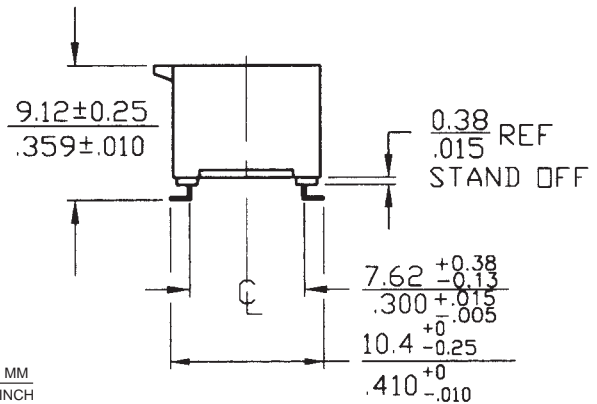
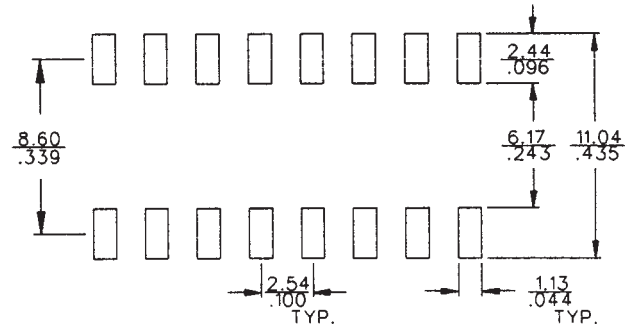
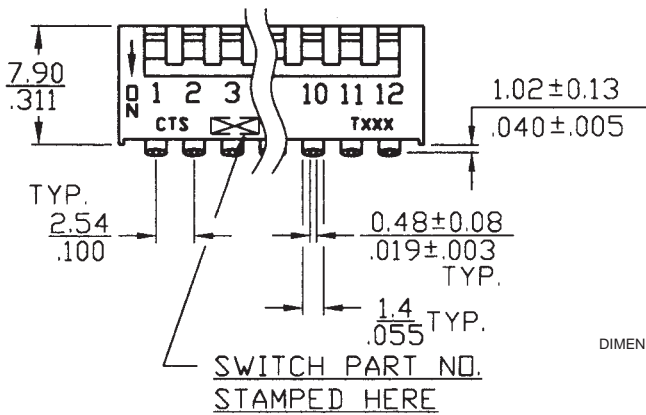
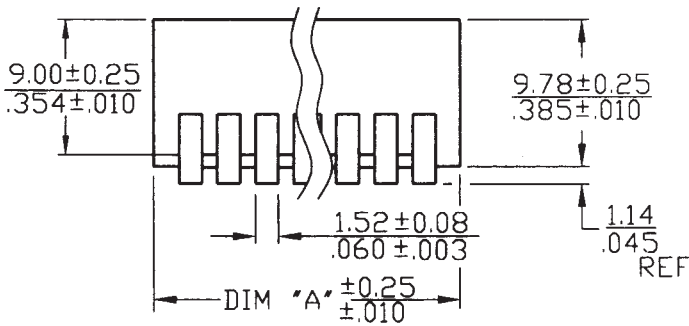
Marking

Special side or top marking available-consult CTS

CTS SERIES 193

Medium Length Actuator

Surface Mount Pad Layouts



Ordering Information

"A" Overall Dimension	No. of Switch Sections	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
32.66 / 1.286	12	193-12MS

Part Number Code For Ordering

193 - XX M S R

XX: Number of Positions

M: Medium Length Actuator

S: Bottom Epoxy Seal

R: Tape and Reel Packaging (optional)

Example: 193-2MS

Order From:

CTS CORPORATION, RESISTOR/ELECTROCOMPONENTS / 1601 Mishawaka Street / Elkhart, Indiana 46514
North America Toll Free (888) 287-4690 / (219) 296-6700 / FAX: (219) 293-1240 <http://www.ctscorp.com>

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