

## Surface Mount DIP Switch — Auto Placeable

### Features

#### Optimized Mechanical Features

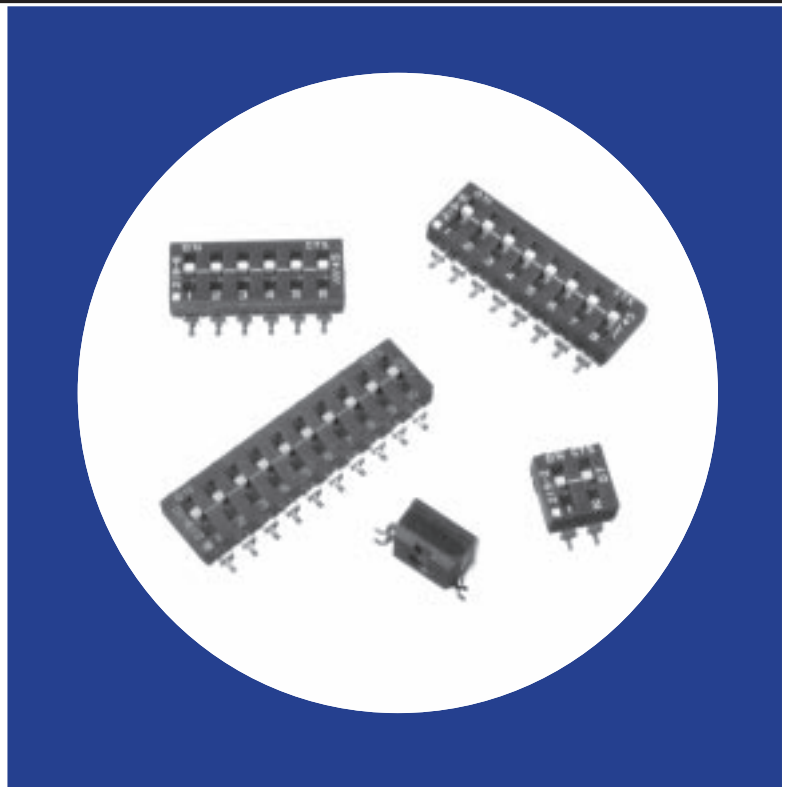
- Removable tape seal to withstand IR vapor phase or wave soldering temperatures, and board washing
- Positive detent separate from contactor
- Available low profile, medium and high height actuators
- Gull-wing and "J" lead terminal configurations
- Tube or tape and reel packaging available

#### Optimized Contact System

- Redundant, wiping contact
- Contactor does not deflect during actuation

#### Premium Materials

- Gold plated beryllium copper contacts
- All plastic rated UL 94 V-0
- High temperature body and actuator materials
- RoHS compliant



## Electrical and Mechanical Specifications

#### Switch Function

SPST- 2 through 10 and 12 positions

#### Switch Contact Resistance

25 milliohms maximum initial  
50 milliohms maximum at the end of life

#### Insulation Resistance

1,000 megohms minimum between  
insulated terminals

#### Dielectric Storage

500 VDC minimum for 1 minute between  
adjacent switches

#### Nonswitching Rating

100 mA or 50 VDC maximum

#### Switch Capacitance

5 pF maximum between adjacent closed switches

#### Operating Temperature

- 55°C to +85°C

#### Actuation Life

2,000 cycles switching 100 mA @ 20 VDC or  
0.1 mA @ 5 VDC (dry circuit)

#### Coplanarity

0.10mm (.004") maximum

#### Allowable Solder Time

IR and Vapor Phase - up to 51 seconds at 260°C  
Wave - up to 5 seconds at 260°C

#### Vibration

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

#### Shock

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

#### Sealing

Standard bottom seal  
Optional top tape seal

#### Marking

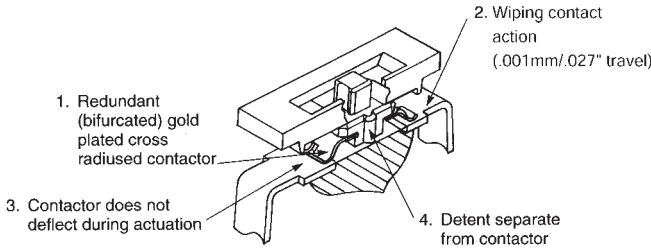
Special marking available consult CTS.

#### Packaging

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

# CTS SERIES 219 SMT CONTACT FEATURES

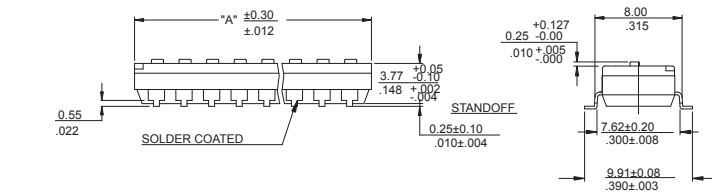
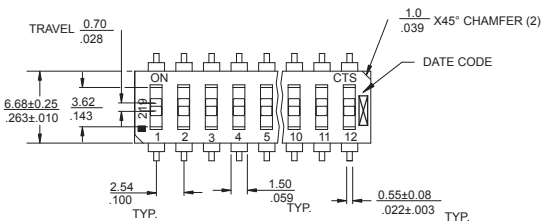
1. Value of Redundant (Bifurcated) Gold Plated Contacts: Redundancy dramatically reduces the probability of contact failure while gold contact material provides the highest environmental protection, IMPROVING RELIABILITY.
2. Value of Wiping Contact Action: Cleans contact area, IMPROVING RELIABILITY.
3. Value of Contactor Not Deflecting During Actuation: Constant contact pressure eliminates overstressing contacts, IMPROVING RELIABILITY.
4. Value of Detent Separate from Contactor: Separate detent allows optimization of nondeflecting contactor and detent designs, IMPROVING RELIABILITY.



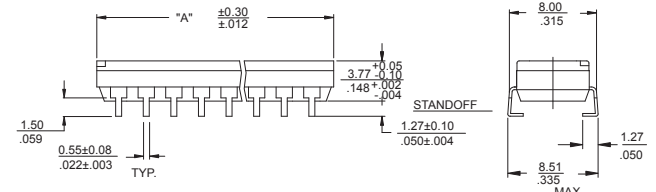
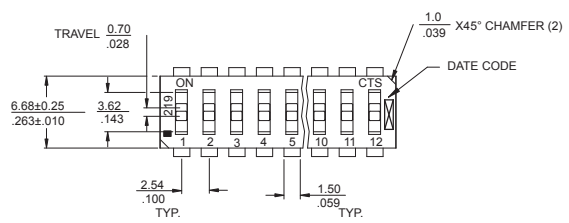
"A" Overall Dimension	No. of Switch positions
6.55/.258	2
9.09/.358	3
11.63/.458	4
14.17/.558	5
16.71/.658	6
19.25/.758	7
21.79/.858	8
24.33/.958	9
26.87/1.058	10
31.95/1.258	12

\* For "J" bend terminal configurations, add the letter "J" to part number ie 219-2MSTJ or 219-2LPSTJ.

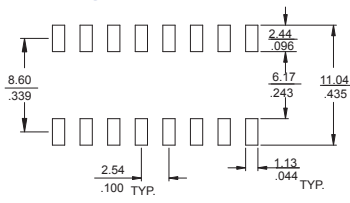
## Gull Wing Terminals Medium Height Actuator



## "J" Bend Terminals Low Profile Actuator

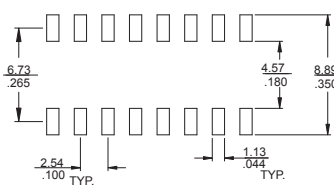


## Gull Wing Surface Mount Pad Layouts



DIMENSION: mm / inch

## "J" Bend Surface Mount Pad Layouts



## Ordering Information

**219 - 12 LP S T J R F - P**

- XX**: # OF POSITIONS
- E**: EXTENDED HEIGHT ACTUATOR(0.60mm/.024")
- M**: MEDIUM HEIGHT ACTUATOR(0.24mm/.010")
- LP**: LOW PROFILE ACTUATOR(Flush)
- S**: BOTTOM SEAL (Standard)
- T**: TOP TAPE SEAL
- J**: "J" BEND TERMINAL(Optional)
- R**: TAPE AND REEL PACKAGING(Optional)
- F**: SHIP AT OFF POSITION
- BLANK**: SHIP AT ON POSITION
- P**: RoHS COMPLIANT
- BLANK**: RoHS COMPLIANT FOR SHIPMENT FROM 7/01/06