

## DIP & ROTARY SWITCH

## Type

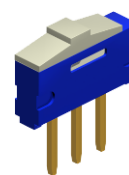
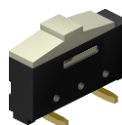
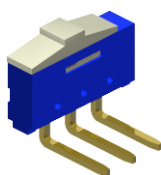
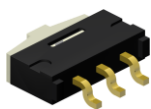
[click on page numbers](#)

## Page

<b>Changeover Slide Switch "DSS" Series</b>	2.54mm Pin to Pin THT & SMT	2
<b>Rotary Switch "DRD" Series</b>	3:3 & 1:4 Pin-out SMT 2.54mm Pin to Pin	3
	3:3 Pin-out straight THT 2.54 x 7.62mm footprint	4
	1:4 Pin-out straight THT 2.54 x 7.62mm footprint	5
	3:3 Pin-out right angle THT 2.54 x 2.54mm footprint	6
	1:4 Pin-out right angle THT 2.54 x 2.54mm footprint	7
	3:3 Pin-out right angle THT 2.54 x 5.08mm footprint	8
	1:4 Pin-out right angle THT 2.54 x 5.08mm footprint	9
<b>Slide Switch "DDG" &amp; "DDS" Series</b>	Standard Profile 2.54mm DIP Type THT	10 & 11
<b>Slide Switch "DAH" Series</b>	Auto Inserting 2.54mm DIP Type THT	12
<b>Slide Switch "DAM" Series</b>	End Stackable 2.54mm DIP Type THT	13
<b>Slide Switch "DSD" &amp; "DSL" Series</b>	End Stackable 2.54mm DIP Type SMT	14
<b>Slide Switch "DHS" Series</b>	HALF PITCH (1.27mm) SMT	15
<b>Slide TRI-STATE Switch "DTD" / "DTA" &amp; "DTS" Series</b>	Standard Profile 2.54mm DIP Type THT & SMT	16
<b>Selector Slide Switch "DSP" Series</b>	Standard 2.54mm DIP Type THT & SMT	17
<b>Piano Switch "DPG" &amp; "DPS" Series</b>	Standard Profile 2.54mm DIP Type THT	18 & 19
<b>Piano Switch "DPH" Series</b>	Low Profile 2.54mm DIP Type THT	20
<b>Piano Switch "DPI" Series</b>	Low Profile, End Stackable 2.54mm DIP Type THT	21
<b>Piano Switch "DPA" Series</b>	Low Profile 2.54mm DIP Type SMT	22
<b>Piano Switch "DPM" Series</b>	Low Profile, End Stackable 2.54mm DIP Type SMT	23

Part-Number	Page	Part-Number	Page	Part-Number	Page	Part-Number	Page
DAH-1xx-E01Z	12	DDS-5xx-SRAZ	11	DPM-1xx-EB11Z	23	DRD-4xx-CRZ	7
DAH-1xx-EZ	12	DDS-5xx-STZ	11	DPM-1xx-LA10Z	23	DRD-4xx-CSZ	5
DAH-1xx-L01Z	12	DDS-5xx-SZ	11	DPM-1xx-LA11Z	23	DRD-4xx-RFZ	9
DAH-1xx-LT01Z	12	DDS-6xx-STZ	10	DPM-1xx-LAT0Z	23	DRD-4xx-RMZ	3
DAH-1xx-LTZ	12	DDS-6xx-SZ	10	DPM-1xx-LAT1Z	23	DRD-4xx-RRZ	7
DAH-1xx-LZ	12	DHS-1xx-LCZ	15	DPM-1xx-LB10Z	23	DRD-4xx-RSZ	5
DAM-1xx-E01Z	13	DHS-1xx-LDZ	15	DPM-1xx-LB11Z	23	DRD-5xx-CFZ	9
DAM-1xx-EZ	13	DHS-1xx-LTZ	15	DPM-1xx-LBT0Z	23	DRD-5xx-CRZ	7
DAM-1xx-L01Z	13	DHS-1xx-LZ	15	DPM-1xx-LBT1Z	23	DRD-5xx-CSZ	5
DAM-1xx-LT01Z	13	DPA-1xx-EA00Z	22	DPS-1xx-ATZ	18	DRD-5xx-RFZ	9
DAM-1xx-LTZ	13	DPA-1xx-EA10Z	22	DPS-1xx-AZ	18	DRD-5xx-RRZ	7
DAM-1xx-LZ	13	DPA-1xx-LA00Z	22	DPS-1xx-BTZ	18	DRD-5xx-RSZ	5
DDG-1xx-LTZ	11	DPA-1xx-LA10Z	22	DPS-1xx-BZ	18	DSD-1xx-EZ	14
DDG-1xx-LZ	11	DPA-1xx-LAT0Z	22	DPS-2xx-ATZ	18	DSD-1xx-LCZ	14
DDG-1xx-SRAZ	11	DPA-1xx-LAT1Z	22	DPS-2xx-AZ	18	DSD-1xx-LDZ	14
DDG-1xx-STZ	11	DPG-1xx-ATZ	18	DPS-2xx-BTZ	18	DSD-1xx-LTZ	14
DDG-1xx-SZ	11	DPG-1xx-AZ	18	DPS-2xx-BZ	18	DSD-1xx-LZ	14
DDG-2xx-STZ	10	DPG-1xx-BTZ	18	DPS-3xx-ATZ	18	DSL-1xx-EZ	14
DDG-2xx-SZ	10	DPG-1xx-BZ	18	DPS-3xx-AZ	18	DSL-1xx-LCZ	14
DDG-3xx-STZ	10	DPG-2xx-ATZ	18	DPS-3xx-BTZ	18	DSL-1xx-LDZ	14
DDG-3xx-SZ	10	DPG-2xx-AZ	18	DPS-3xx-BZ	18	DSL-1xx-LTZ	14
DDG-4xx-LTZ	11	DPG-2xx-BTZ	18	DPS-4xx-ATZ	19	DSL-1xx-LZ	14
DDG-4xx-LZ	11	DPG-2xx-BZ	18	DPS-4xx-AZ	19	DSP-42-E01Z	17
DDG-4xx-SRAZ	11	DPG-3xx-ATZ	18	DPS-4xx-BTZ	19	DSP-42-E02Z	17
DDG-4xx-STZ	11	DPG-3xx-AZ	18	DPS-4xx-BZ	19	DSP-42-EC02Z	17
DDG-4xx-SZ	11	DPG-3xx-BTZ	18	DPS-5xx-ATZ	19	DSP-42-L01Z	17
DDG-5xx-LTZ	11	DPG-3xx-BZ	18	DPS-5xx-AZ	19	DSP-42-L02Z	17
DDG-5xx-LZ	11	DPG-4xx-ATZ	19	DPS-5xx-BTZ	19	DSP-42-LC02Z	17
DDG-5xx-SRAZ	11	DPG-4xx-AZ	19	DPS-5xx-BZ	19	DSP-42-LD02Z	17
DDG-5xx-STZ	11	DPG-4xx-BTZ	19	DPS-6xx-ATZ	19	DSP-42-LT01Z	17
DDG-5xx-SZ	11	DPG-4xx-BZ	19	DPS-6xx-AZ	19	DSP-42-LT02Z	17
DDG-6xx-STZ	10	DPG-5xx-ATZ	19	DPS-6xx-BTZ	19	DSS-1010Z	2
DDG-6xx-SZ	10	DPG-5xx-AZ	19	DPS-6xx-BZ	19	DSS-2010Z	2
DDS-1xx-LTZ	11	DPG-5xx-BTZ	19	DRD-1xx-CFZ	8	DSS-3020Z	2
DDS-1xx-LZ	11	DPG-5xx-BZ	19	DRD-1xx-CMZ	3	DSS-4020KDZ	2
DDS-1xx-SRAZ	11	DPG-6xx-ATZ	19	DRD-1xx-CRZ	6	DSS-4020Z	2
DDS-1xx-STZ	11	DPG-6xx-AZ	19	DRD-1xx-CSZ	4	DTA-1xx-ETZ	16
DDS-1xx-SZ	11	DPG-6xx-BTZ	19	DRD-1xx-RFZ	8	DTA-1xx-EZ	16
DDS-2xx-STZ	10	DPG-6xx-BZ	19	DRD-1xx-RMZ	3	DTA-1xx-LTZ	16
DDS-2xx-SZ	10	DPH-1xx-EAZ	20	DRD-1xx-RRZ	6	DTA-1xx-LZ	16
DDS-3xx-STZ	10	DPH-1xx-LATZ	20	DRD-1xx-RSZ	4	DTD-1xx-ETZ	16
DDS-3xx-SZ	10	DPH-1xx-LAZ	20	DRD-2xx-CFZ	8	DTD-1xx-EZ	16
DDS-4xx-LTZ	11	DPI-1xx-EA10Z	21	DRD-2xx-CRZ	6	DTS-1xx-ETZ	16
DDS-4xx-LZ	11	DPI-1xx-EB10Z	21	DRD-2xx-CSZ	4	DTS-1xx-EZ	16
DDS-4xx-SRAZ	11	DPI-1xx-LA10Z	21	DRD-2xx-RFZ	8	DTS-1xx-LTZ	16
DDS-4xx-STZ	11	DPI-1xx-LB10Z	21	DRD-2xx-RRZ	6	DTS-1xx-LZ	16
DDS-4xx-SZ	11	DPM-1xx-EA10Z	23	DRD-2xx-RSZ	4		
DDS-5xx-LTZ	11	DPM-1xx-EA11Z	23	DRD-4xx-CFZ	9		
DDS-5xx-LZ	11	DPM-1xx-EB10Z	23	DRD-4xx-CMZ	3		

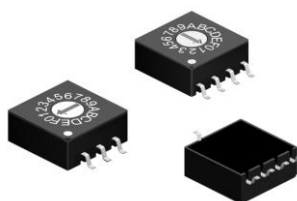
## Changeover Slide Switch



**SMT & THT Page 2**

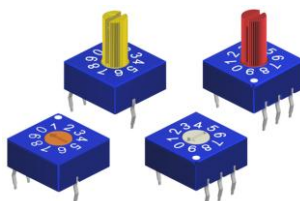
## Rotary Switch

**horizontal SMT**



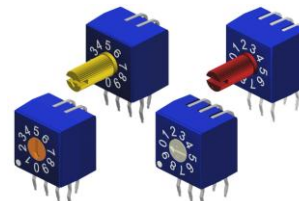
**Page 3**

**horizontal THT**



**Page 4 & 5**

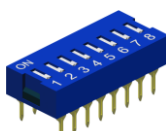
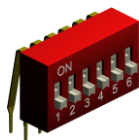
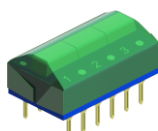
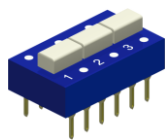
**vertical THT**



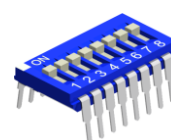
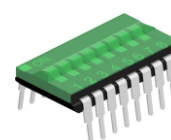
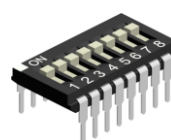
**Page 6 to 9**

## Slide Switch

**DIP Package "THT"**

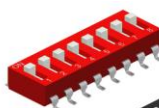


**DDG / DDS Series Page 10 & 11**



**DAH / DAM Series Page 12 & 13**

**DIP Package "SMT"**

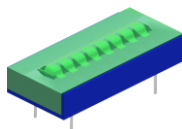
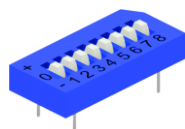


**DSD / DSL Series Page 14**



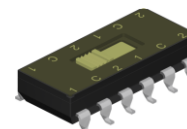
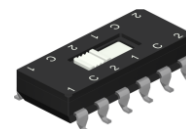
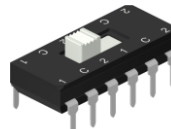
**DHS Series Page 15**

**TRI-State "THT" & "SMT"**



**DTD / DTA / DTS Series Page 16**

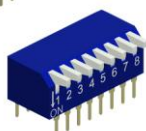
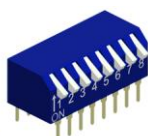
**Selector "THT" & "SMT"**



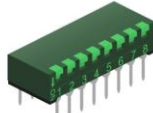
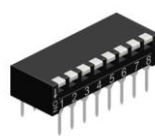
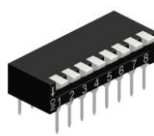
**DSP Series Page 17**

## Piano Switch

**DIP Package "THT"**

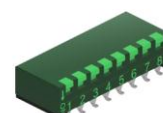


**DPG / DPS Series Page 18 & 19**



**DPH / DPI Series Page 20 & 21**

**DIP Package "SMT"**



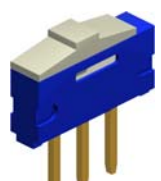
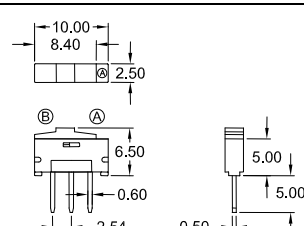
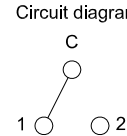
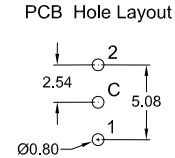
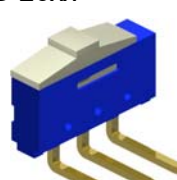
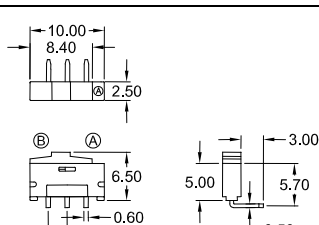
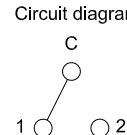
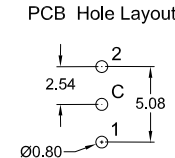

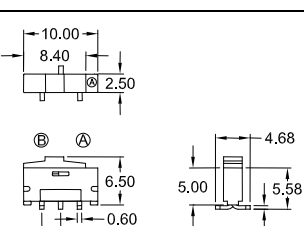
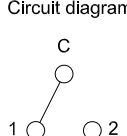
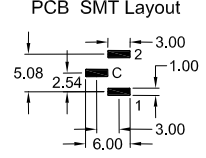
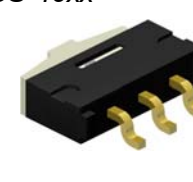
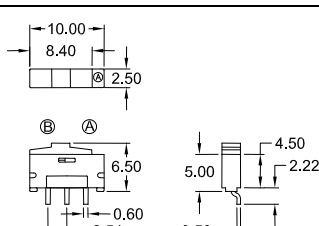
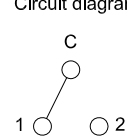
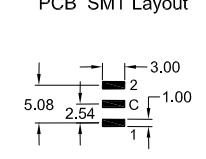


**DPA / DPM Series Page 22 & 23**



# DSS Series

## CHANGEOVER SLIDE SWITCH "THT" & "SMT" TYPE



<div><b>DSS-10xx</b></div> 		<div>Circuit diagram</div> 	<div>Switch position</div> <table><tr><td>(B)</td><td>(A)</td></tr><tr><td>PT</td><td>PT</td></tr><tr><td>C-1</td><td>C-2</td></tr></table>	(B)	(A)	PT	PT	C-1	C-2	<div>PCB Hole Layout</div> 																														
(B)	(A)																																							
PT	PT																																							
C-1	C-2																																							
<div><b>DSS-20xx</b></div> 		<div>Circuit diagram</div> 	<div>Switch position</div> <table><tr><td>(B)</td><td>(A)</td></tr><tr><td>PT</td><td>PT</td></tr><tr><td>C-1</td><td>C-2</td></tr></table>	(B)	(A)	PT	PT	C-1	C-2	<div>PCB Hole Layout</div> 																														
(B)	(A)																																							
PT	PT																																							
C-1	C-2																																							
<div><b>DSS-30xx</b></div> 		<div>Circuit diagram</div> 	<div>Switch position</div> <table><tr><td>(B)</td><td>(A)</td></tr><tr><td>PT</td><td>PT</td></tr><tr><td>C-1</td><td>C-2</td></tr></table>	(B)	(A)	PT	PT	C-1	C-2	<div>PCB SMT Layout</div> 																														
(B)	(A)																																							
PT	PT																																							
C-1	C-2																																							
<div><b>DSS-40xx</b></div> 		<div>Circuit diagram</div> 	<div>Switch position</div> <table><tr><td>(B)</td><td>(A)</td></tr><tr><td>PT</td><td>PT</td></tr><tr><td>C-1</td><td>C-2</td></tr></table>	(B)	(A)	PT	PT	C-1	C-2	<div>PCB SMT Layout</div> 																														
(B)	(A)																																							
PT	PT																																							
C-1	C-2																																							
<div><b>SPECIFICATIONS</b></div> <table><tr><th colspan="2">Electrical data</th><th colspan="2">Mechanical and Environmental data</th></tr><tr><td>Contact Rating</td><td>0.2A, 24V DC / 0.5A, 12V DC</td><td>Operating Temperature</td><td>- 25°C to +70°C</td></tr><tr><td>-switching</td><td>1 mA at 10mV</td><td>Storage Temperature</td><td>- 40°C to +85°C</td></tr><tr><td>-minimum</td><td>50 mΩ max.</td><td>Soldering Temperature</td><td></td></tr><tr><td>Contact Resistance</td><td>100 mΩ max.</td><td>-SMT reflow soldering</td><td>250°C +0/-5°C for 10 sec. max.</td></tr><tr><td>-after life test</td><td>10000 MΩ min. at 500V DC</td><td>-THT wave soldering</td><td>250°C +0/-5°C for 10 sec. max.</td></tr><tr><td>Insulation Resistance</td><td>500 V AC for 1 Minute</td><td>Operating force</td><td>800 gf max.</td></tr><tr><td>Withstanding Voltage</td><td>1.5 pF max.</td><td>Mechanical Life</td><td>5000 operations</td></tr><tr><td>Capacitance between adjacent switches</td><td></td><td>Vibration</td><td>10 Hz – 50 Hz – 10 Hz for 6 hours</td></tr></table>					Electrical data		Mechanical and Environmental data		Contact Rating	0.2A, 24V DC / 0.5A, 12V DC	Operating Temperature	- 25°C to +70°C	-switching	1 mA at 10mV	Storage Temperature	- 40°C to +85°C	-minimum	50 mΩ max.	Soldering Temperature		Contact Resistance	100 mΩ max.	-SMT reflow soldering	250°C +0/-5°C for 10 sec. max.	-after life test	10000 MΩ min. at 500V DC	-THT wave soldering	250°C +0/-5°C for 10 sec. max.	Insulation Resistance	500 V AC for 1 Minute	Operating force	800 gf max.	Withstanding Voltage	1.5 pF max.	Mechanical Life	5000 operations	Capacitance between adjacent switches		Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours
Electrical data		Mechanical and Environmental data																																						
Contact Rating	0.2A, 24V DC / 0.5A, 12V DC	Operating Temperature	- 25°C to +70°C																																					
-switching	1 mA at 10mV	Storage Temperature	- 40°C to +85°C																																					
-minimum	50 mΩ max.	Soldering Temperature																																						
Contact Resistance	100 mΩ max.	-SMT reflow soldering	250°C +0/-5°C for 10 sec. max.																																					
-after life test	10000 MΩ min. at 500V DC	-THT wave soldering	250°C +0/-5°C for 10 sec. max.																																					
Insulation Resistance	500 V AC for 1 Minute	Operating force	800 gf max.																																					
Withstanding Voltage	1.5 pF max.	Mechanical Life	5000 operations																																					
Capacitance between adjacent switches		Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours																																					
<div><b>FEATURES</b></div> <div><ul style="list-style-type: none"><li>Sutable for signal switching and communication equipments</li><li>All plastics used are UL 94V-0 grade fire retardant</li><li>Gold plated contacts to ensure low contact resistance</li></ul></div> <div><ul style="list-style-type: none"><li>Tropical Version (black color) also for THT straight and right angle type available</li></ul></div> <div></div>																																								

### How to order

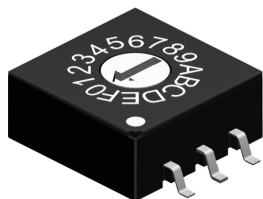
DSS – xx xx XX Z

Type	
<b>10</b>	= Straight THT
<b>20</b>	= Right angle THT
<u>Tropical version only:</u>	
<b>30</b>	= Vertical SMT
<b>40</b>	= Horizontal SMT

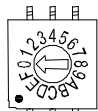
Execution	
<b>10</b>	= Standard version (blue) Material: Nylon 66
<b>20</b>	= Tropical version (black) Material: Nylon 9T

Packing option	
<b>blank</b>	= Tube packing
<b>KD</b>	= Reel packing for DSP-40xx series only

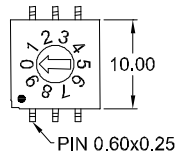
### DRD-1 xx-XM Z (3:3 pin-out)



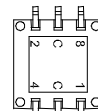
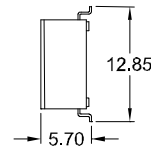
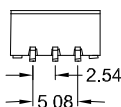
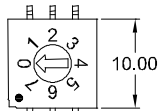
16 POSITIONS



10 POSITIONS



8 POSITIONS

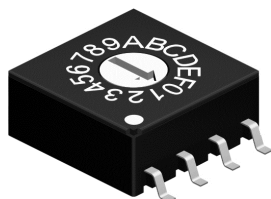


Pin No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○
2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

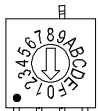
● Real Code  
○ Complementary Code

Rotor color: White  
Rotor color: Red

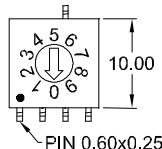
### DRD-4 xx-XM Z (1:4 pin-out)



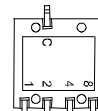
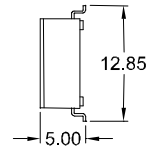
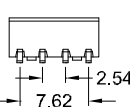
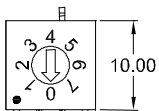
16 POSITIONS



10 POSITIONS



8 POSITIONS

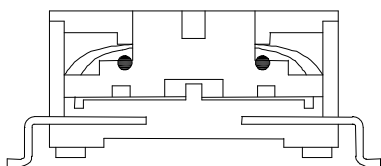


Pin No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○
2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● Real Code  
○ Complementary Code

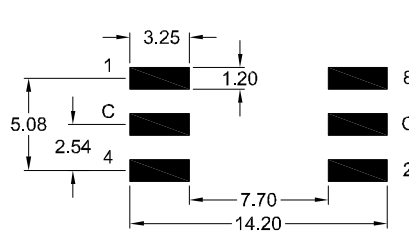
Rotor color: Yellow  
Rotor color: Orange

### Construction

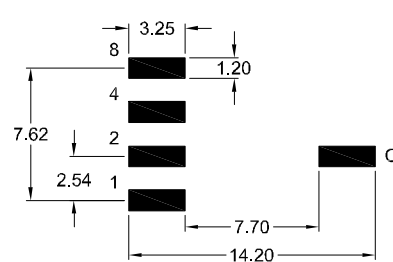


### PCB SMT Layout

#### 3:3 PIN-OUT



#### 1:4 PIN-OUT



### SPECIFICATIONS

#### Electrical data

Contact Rating	
-switching	25 mA, 24 V DC
-non-switching	100 mA, 50 V DC
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	250 V AC for 1 Minute

#### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Soldering Temperature	
-SMT reflow soldering	250°C +0/-5°C for 10 sec.
Operating Force	500 gf-cm max. (torque)
Mechanical Life	2000 steps per position
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

### FEATURES

- Molded-in terminals and fully sealed construction
- Standard 2.54mm pin to pin
- All plastics are UL 94V-0 grade fire retardant
- Reliable contact and long-term stability
- Binary decimal (8 or 10 positions) and hexadecimal (16 positions), real and complementary codes available
- Gold plated contacts to ensure low contact resistance. Terminals Tin plated.

### How to order

DRD – x xx – XX Z

#### Rotor

- 1** = Flat type (3:3 pin-out)
- 4** = Flat type (1:4 pin-out)

#### Nbr of positions

**08; 10; 16**

#### Code

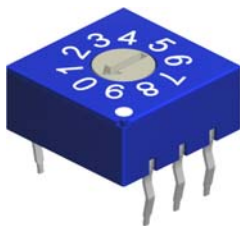
- RM** = Real
- CM** = Complementary

# DRD Series 10x10 Size sealed ROTARY TYPE

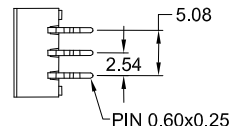
## 3:3 PIN-OUT STRAIGHT "THT" (2.54 x 7.62mm footprint)



### DRD-1 xx-XS Z (Flat Type)



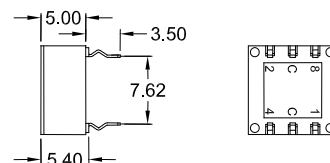
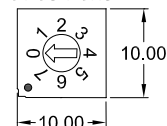
16 POSITIONS



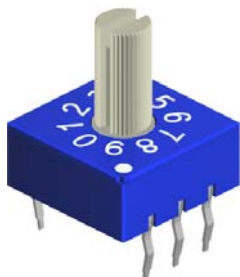
10 POSITIONS



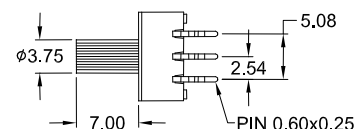
8 POSITIONS



### DRD-2 xx-XS Z (Shaft Type)



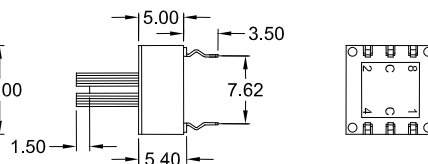
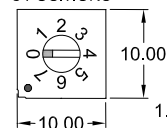
16 POSITIONS



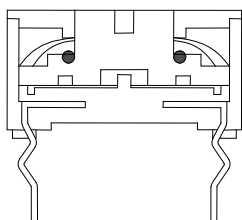
10 POSITIONS



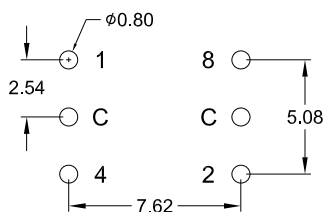
8 POSITIONS



#### Construction



#### PCB Hole Layout



#### Code

Pin No.	POSITION															
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○
2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● Real Code

○ Complementary Code

Rotor color: White

Rotor color: Red

## SPECIFICATIONS

#### Electrical data

Contact Rating	
-switching	25 mA, 24 V DC
-non-switching	100 mA, 50 V DC
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	250 V AC for 1 Minute

#### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Operating Force	500 gf-cm max. (torque)
Mechanical Life	2000 steps per position
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- Molded-in terminals and fully sealed construction
- Standard 2.54mm pin to pin
- All plastics are UL 94V-0 grade fire retardant
- Reliable contact and long-term stability
- Binary decimal (8 or 10 positions) and hexadecimal (16 positions), real and complementary codes available
- Gold plated contacts to ensure low contact resistance. Terminals Tin plated.

### How to order

DRD – x xx – XX Z

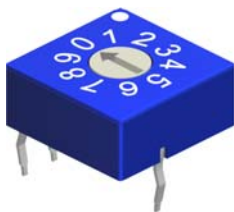
Rotor	Nbr of positions	Code
1 = Flat type	08; 10; 16	RS = Real 7.62mm row space
2 = Shaft type		CS = Complementary 7.62mm row space

# DRD Series 10x10 Size sealed ROTARY TYPE

## 1:4 PIN-OUT STRAIGHT "THT" (2.54 x 7.62mm footprint)



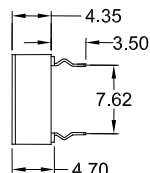
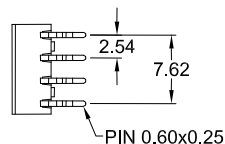
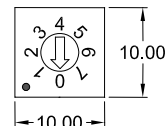
### DRD-4 xx-XS Z (Flat Type)



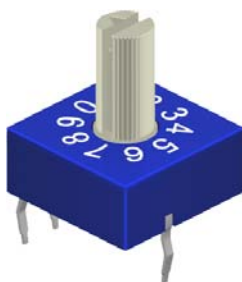
10 POSITIONS



8 POSITIONS



### DRD-5 xx-XS Z (Shaft Type)



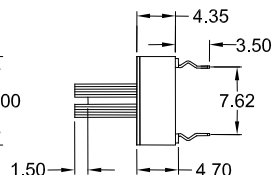
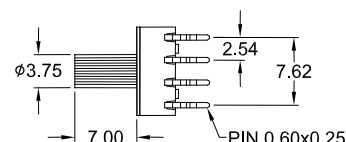
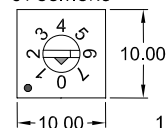
16 POSITIONS



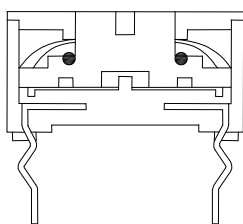
10 POSITIONS



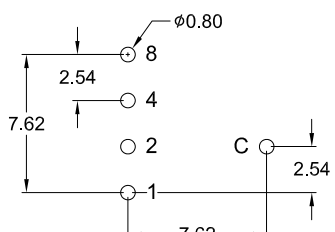
8 POSITIONS



#### Construction



#### PCB Hole Layout



#### Code

Pin No.	POSITION															
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●
2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● Real Code

○ Complementary Code

Rotor color: Yellow

Rotor color: Orange

### SPECIFICATIONS

#### Electrical data

Contact Rating	
-switching	25 mA, 24 V DC
-non-switching	100 mA, 50 V DC
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	250 V AC for 1 Minute

#### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Operating Force	500 gf-cm max. (torque)
Mechanical Life	2000 steps per position
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

### FEATURES

- Molded-in terminals and fully sealed construction
- Standard 2.54mm pin to pin
- All plastics are UL 94V-0 grade fire retardant
- Reliable contact and long-term stability
- Binary decimal (8 or 10 positions) and hexadecimal (16 positions), real and complementary codes available
- Gold plated contacts to ensure low contact resistance. Terminals Tin plated.

### How to order

DRD – x xx – XX Z

Rotor	Nbr of positions	Code
4 = Flat type	08; 10; 16	RS = Real 7.62mm row space
5 = Shaft type		CS = Complementary 7.62mm row space

# DRD Series 10x10 Size sealed ROTARY TYPE

## 3:3 PIN-OUT RIGHT ANGLE "THT" (2.54 x 2.54mm footprint)



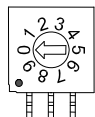
### DRD-1 xx-XR Z (Flat Type)



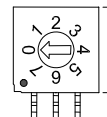
16 POSITIONS



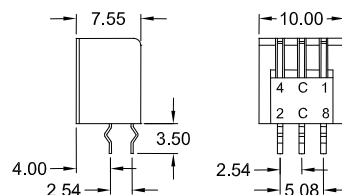
10 POSITIONS



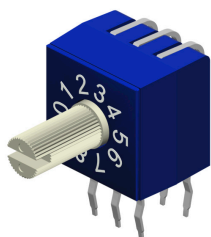
8 POSITIONS



PIN 0.60x0.25



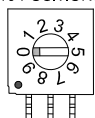
### DRD-2 xx-XR Z (Shaft Type)



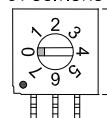
16 POSITIONS



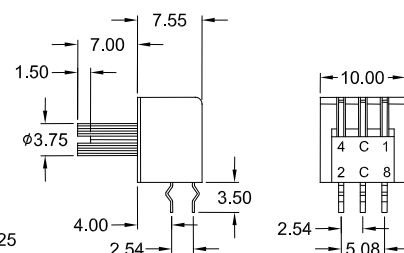
10 POSITIONS



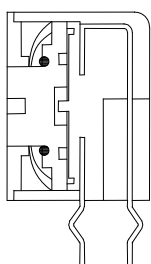
8 POSITIONS



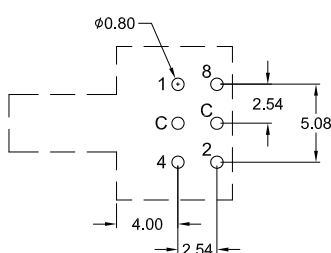
PIN 0.60x0.25



#### Construction



#### PCB Hole Layout



#### Code

Pin No.	POSITION															
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●
2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● Real Code

○ Complementary Code

Rotor color: White

Rotor color: Red

### SPECIFICATIONS

#### Electrical data

Contact Rating	
-switching	25 mA, 24 V DC
-non-switching	100 mA, 50 V DC
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	250 V AC for 1 Minute

#### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Operating Force	500 gf-cm max. (torque)
Mechanical Life	2000 steps per position
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

### FEATURES

- Molded-in terminals and fully sealed construction
- Standard 2.54mm grid dimension
- All plastics are UL 94V-0 grade fire retardant
- Reliable contact and long-term stability
- Binary decimal (8 or 10 positions) and hexadecimal (16 positions), real and complementary codes available
- Gold plated contacts to ensure low contact resistance. Terminals Tin plated.

### How to order

DRD – x xx – XX Z

Rotor	Nbr of positions	Code
1 = Flat type	08; 10; 16	RR = Real 2.54mm grid
2 = Shaft type		CR = Complementary 2.54mm grid

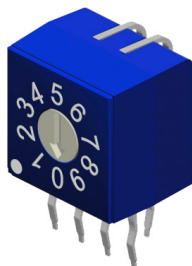


# DRD Series 10x10 Size sealed ROTARY TYPE

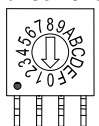
1:4 PIN-OUT RIGHT ANGLE "THT" (2.54 x 2.54mm footprint)



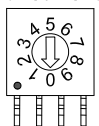
## DRD-4 xx-XR Z (Flat Type)



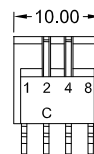
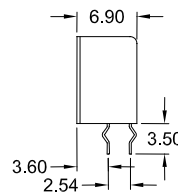
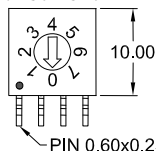
16 POSITIONS



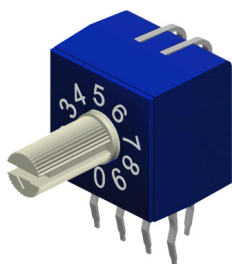
10 POSITIONS



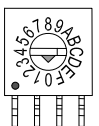
8 POSITIONS



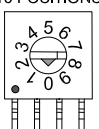
## DRD-5 xx-XR Z (Shaft Type)



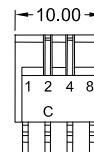
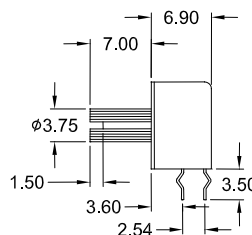
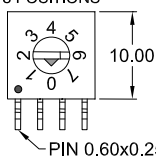
16 POSITIONS



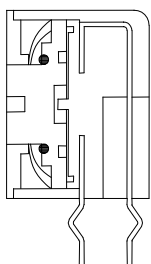
10 POSITIONS



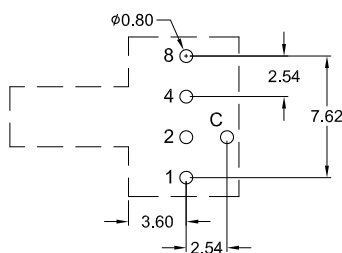
8 POSITIONS



### Construction



### PCB Hole Layout



### Code

Pin No.	POSITION															
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●
2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● Real Code

○ Complementary Code

Rotor color: Yellow

Rotor color: Orange

## SPECIFICATIONS

### Electrical data

Contact Rating	
-switching	25 mA, 24 V DC
-non-switching	100 mA, 50 V DC
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	250 V AC for 1 Minute

### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Operating Force	500 gf-cm max. (torque)
Mechanical Life	2000 steps per position
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- Molded-in terminals and fully sealed construction
- Standard 2.54mm grid dimension
- All plastics are UL 94V-0 grade fire retardant
- Reliable contact and long-term stability
- Binary decimal (8 or 10 positions) and hexadecimal (16 positions), real and complementary codes available
- Gold plated contacts to ensure low contact resistance. Terminals Tin plated.

## How to order

DRD – x xx – XX Z

Rotor	Nbr of positions	Code
4 = Flat type	08; 10; 16	RR = Real 2.54mm grid
5 = Shaft type		CR = Complementary 2.54mm grid

# DRD Series 10x10 Size sealed ROTARY TYPE

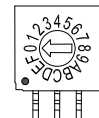
## 3:3 PIN-OUT RIGHT ANGLE "THT" (2.54 x 5.08mm footprint)



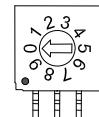
### DRD-1 xx-XF Z (Flat Type)



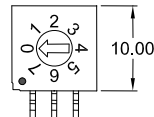
16 POSITIONS



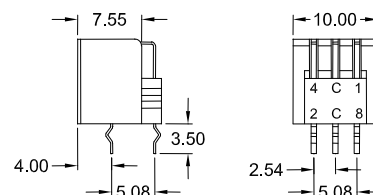
10 POSITIONS



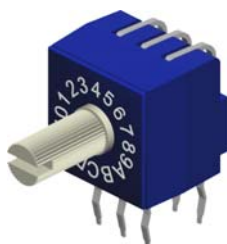
8 POSITIONS



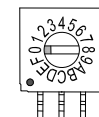
PIN 0.60x0.25



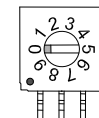
### DRD-2 xx-XF Z (Shaft Type)



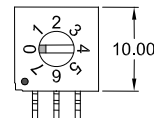
16 POSITIONS



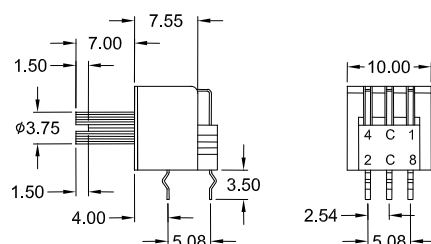
10 POSITIONS



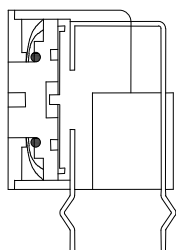
8 POSITIONS



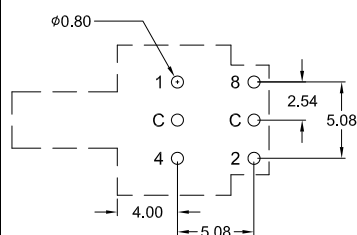
PIN 0.60x0.25



#### Construction



#### PCB Hole Layout



#### Code

Pin No.	POSITION															
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○	●
2	○	○	●	●	○	○	●	●	○	○	●	●	○	○	●	●
4	○	○	○	○	●	●	○	○	○	○	○	○	●	●	○	○
8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● Real Code

○ Complementary Code

Rotor color: White

Rotor color: Red

### SPECIFICATIONS

#### Electrical data

Contact Rating	
-switching	25 mA, 24 V DC
-non-switching	100 mA, 50 V DC
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	250 V AC for 1 Minute

#### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Operating Force	500 gf-cm max. (torque)
Mechanical Life	2000 steps per position
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

### FEATURES

- Molded-in terminals and fully sealed construction
- Standard 2.54mm pin to pin
- All plastics are UL 94V-0 grade fire retardant
- Reliable contact and long-term stability
- Binary decimal (8 or 10 positions) and hexadecimal (16 positions), real and complementary codes available
- Gold plated contacts to ensure low contact resistance. Terminals Tin plated.

#### How to order

DRD – x xx – XX Z

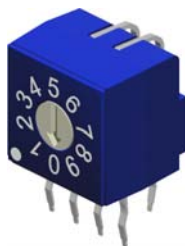
Rotor	Nbr of positions	Code
1 = Flat type	08; 10; 16	RF = Real 5.08mm row space
2 = Shaft type		CF = Complementary 5.08mm row space

# DRD Series 10x10 Size sealed ROTARY TYPE

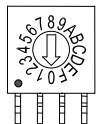
## 1:4 PIN-OUT RIGHT ANGLE "THT" (2.54 x 5.08mm footprint)



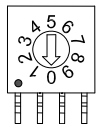
### DRD-4 xx-XF Z (Flat Type)



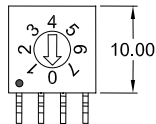
16 POSITIONS



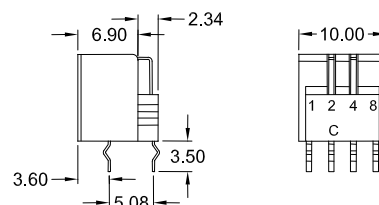
10 POSITIONS



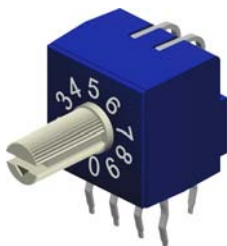
8 POSITIONS



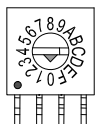
PIN 0.60x0.25



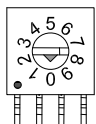
### DRD-5 xx-XF Z (Shaft Type)



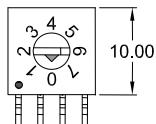
16 POSITIONS



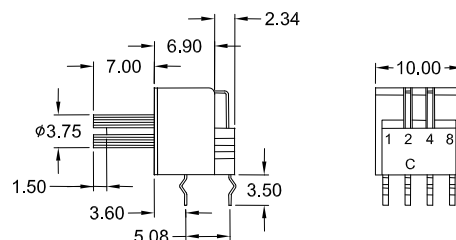
10 POSITIONS



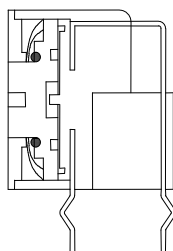
8 POSITIONS



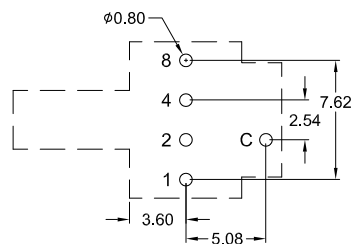
PIN 0.60x0.25



#### Construction



#### PCB Hole Layout



#### Code

Pin No.	POSITION															
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○
2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
8	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● Real Code

○ Complementary Code

Rotor color: Yellow

Rotor color: Orange

### SPECIFICATIONS

#### Electrical data

Contact Rating	
-switching	25 mA, 24 V DC
-non-switching	100 mA, 50 V DC
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	250 V AC for 1 Minute

#### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Operating Force	500 gf-cm max. (torque)
Mechanical Life	2000 steps per position
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

### FEATURES

- Molded-in terminals and fully sealed construction
- Standard 2.54mm pin to pin
- All plastics are UL 94V-0 grade fire retardant
- Reliable contact and long-term stability
- Binary decimal (8 or 10 positions) and hexadecimal (16 positions), real and complementary codes available
- Gold plated contacts to ensure low contact resistance. Terminals Tin plated.

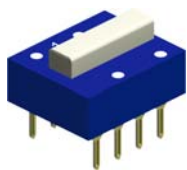
### How to order

DRD – x xx – XX Z

Rotor	Nbr of positions	Code
4 = Flat type	08; 10; 16	RF = Real 5.08mm row space
5 = Shaft type		CF = Complementary 5.08mm row space

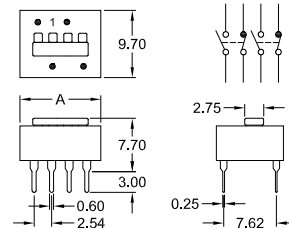
### DPDT Contact Form

Standard Actuator only!



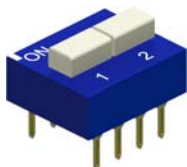
Position	1	2	3
Dim. "A"	11.70	21.70	31.80

Unit: mm



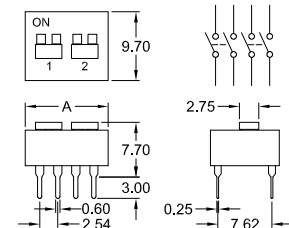
### DPST Contact Form

Standard Actuator only!



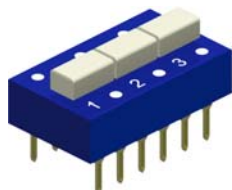
Position	1	2	3	4	5	6
Dim. "A"	6.70	11.70	16.70	21.70	26.70	31.80

Unit: mm



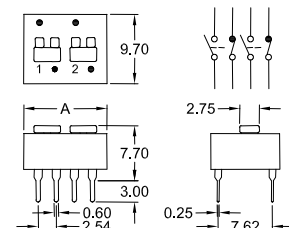
### SPDT Contact Form

Standard Actuator only!

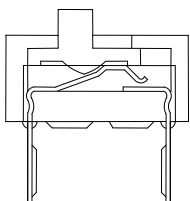


Position	1	2	3	4	5	6
Dim. "A"	6.70	11.70	16.70	21.70	26.70	31.80

Unit: mm



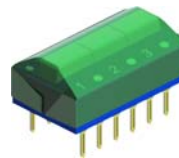
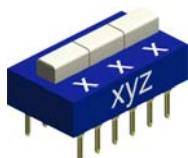
### Construction



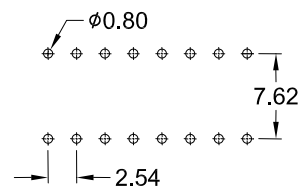
### Options

1. Special top and/or side marking available

2. Tape sealed



### PCB Hole Layout



## SPECIFICATIONS

### Electrical data

Contact Rating	25 mA, 24 V DC
-switching	100 mA, 50 V DC
-non-switching	
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	500 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max.

### Mechanical and Environmental data

Operating temperature	- 25°C to +70°C
Storage temperature	- 40°C to +85°C
Operating force	800 gf max.
Mechanical life	2000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- Tactile response is performed directly by larger contact pressure to ensure very stable contact
- All plastics used are UL 94V-0 grade fire retardant
- Bottom epoxy sealed standard
- Contact wiping on make and break
- Gold plated (*gold/gold*) or silver plated (*silver/tin*) contacts to ensure low contact resistance and long mechanical life
- Ideal for Data Processing, Telecommunication, Remote Control and Burglar Alarm System use, where manual programming is required
- Standard packing method Tube

### How to order

**DDX – x xx – XX Z**

### Series

**DDG** = Gold plated Contacts  
**DDS** = Silver plated Contacts

### Contact Form

**2** = DPST  
**3** = SPDT  
**6** = DPDT

### Nbr of positions

see under position/dimension box above  
Example:  
1 Position = **01**  
2 Position = **02**  
etc.

### Actuator and Sealing

**S** = Standard Actuator  
**ST** = Standard Actuator & Tape sealed



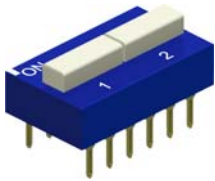
# DDG / DDS Series

SLIDE STANDARD PROFILE "THT" TYPE



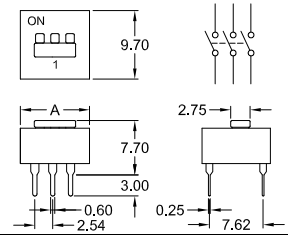
## 3PST Contact Form

Standard Actuator only!



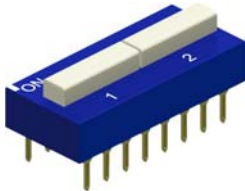
Position	1	2	3	4
Dim. "A"	9.20	16.70	24.20	31.80

Unit: mm



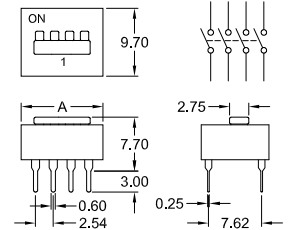
## 4PST Contact Form

Standard Actuator only!



Position	1	2	3
Dim. "A"	11.70	21.70	31.80

Unit: mm



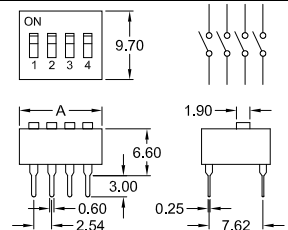
## SPST Contact Form

Standard & Low Actuator possible.



Position	1	2	3	4	5	6
Dim. "A"	3.91	6.70	9.20	11.70	14.20	16.70
Position	7	8	9	10	12	15
Dim. "A"	19.20	21.70	24.20	26.70	31.80	39.50

Unit: mm



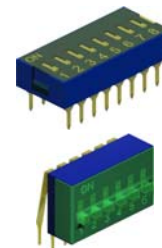
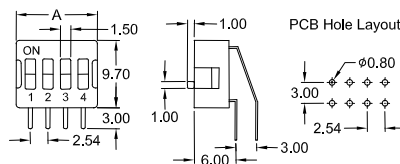
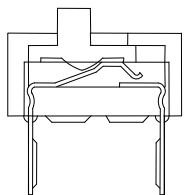
## Construction

## Options

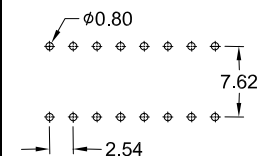
1. Right Angle for SPST Contact Form; 1 to 15 positions

2. Low profile actuator

3. Tape sealed



## PCB Hole Layout



## SPECIFICATIONS

### Electrical data

Contact Rating	
-switching	25 mA, 24 V DC
-non-switching	100 mA, 50 V DC
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	500 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max.

### Mechanical and Environmental data

Operating temperature	- 25°C to +70°C
Storage temperature	- 40°C to +85°C
Operating force	800 gf max.
Mechanical life	2000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- Tactile response is performed directly by larger contact pressure to ensure very stable contact
- All plastics used are UL 94V-0 grade fire retardant
- Bottom epoxy sealed standard
- Contact wiping on make and break
- Gold plated (*gold/gold*) or silver plated (*silver/tin*) contacts to ensure low contact resistance and long mechanical life
- Ideal for Data Processing, Telecommunication, Remote Control and Burglar Alarm System use, where manual programming is required
- Standard packing method Tube

## How to order

DDX – x xx – XXX Z

### Series

**DDG** = Gold plated Contacts  
**DDS** = Silver plated Contacts

### Contact Form

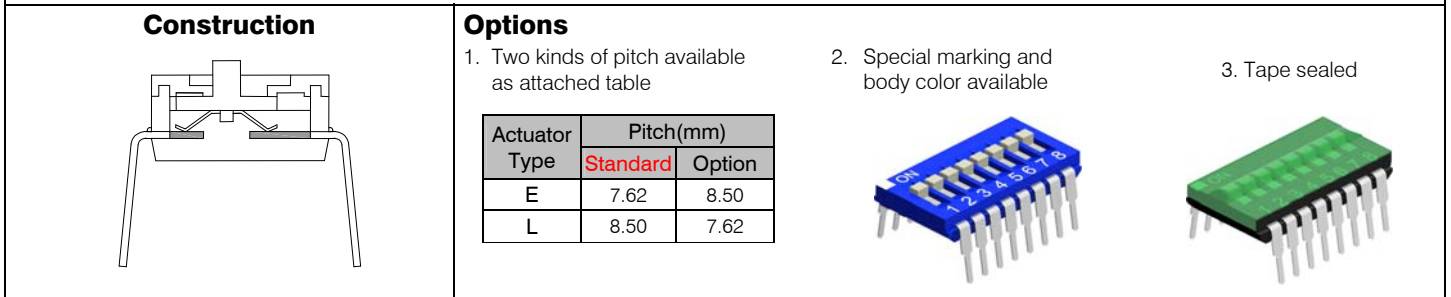
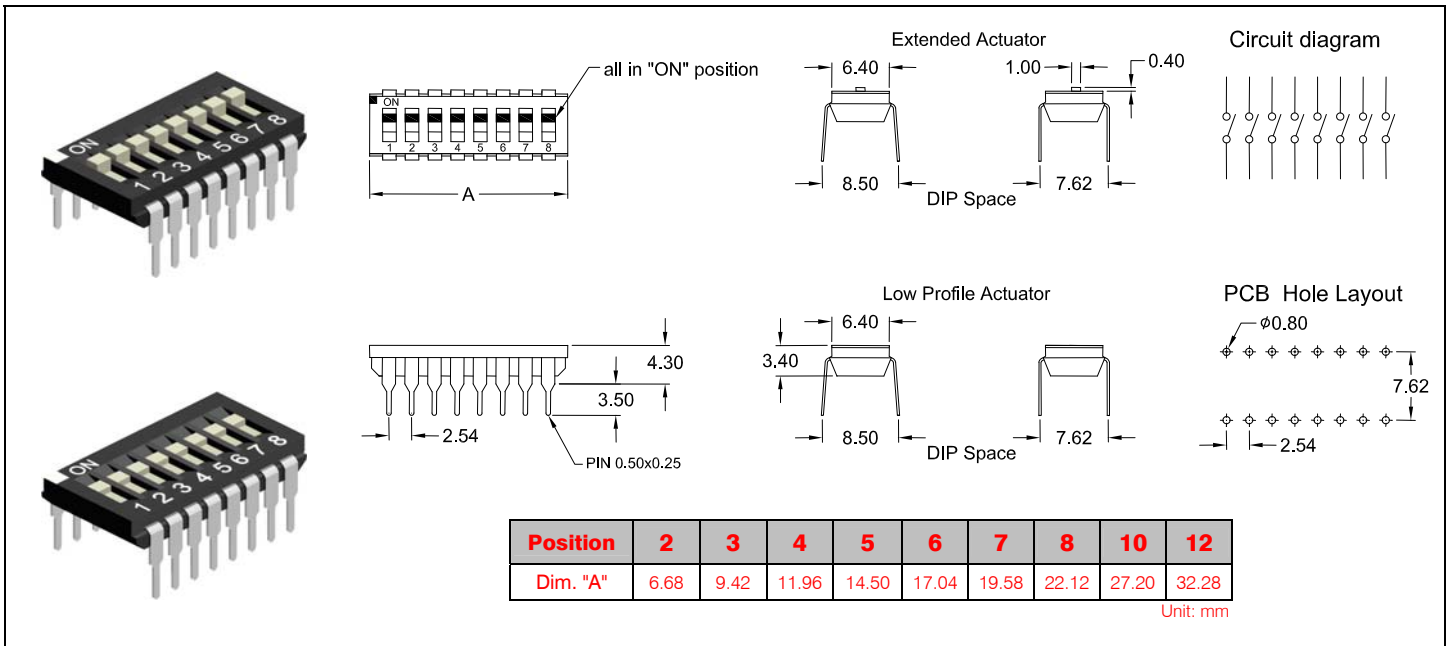
**1** = SPST  
**4** = 3PST  
**5** = 4PST

### Nbr of positions

see under position/dimension box above  
Example:  
1 Position = **01**  
2 Position = **02**  
etc.

### Actuator and Sealing

**S** = Standard Actuator  
**L** = Low Profile Actuator  
**LT** = Low Profile Actuator & Tape sealed  
**ST** = Standard Actuator & Tape sealed  
**SRA** = Right Angle Type



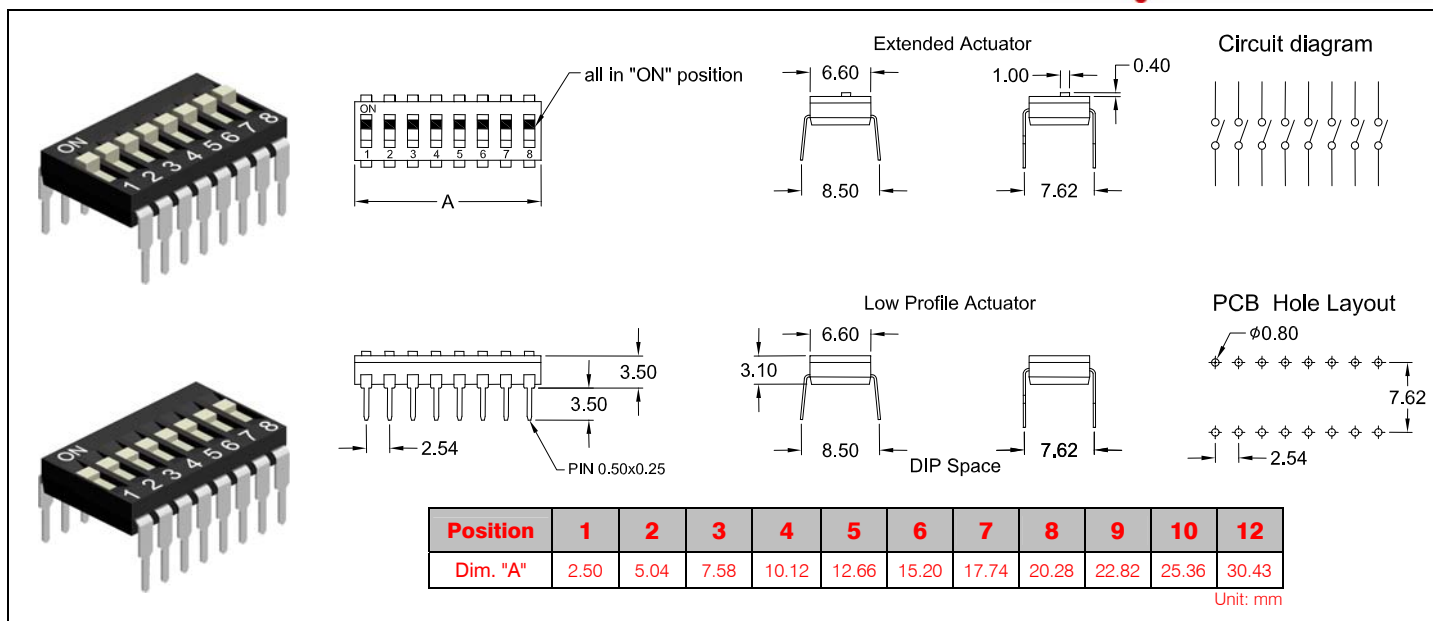
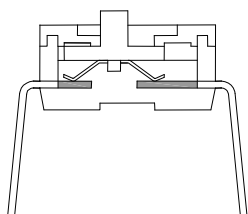
SPECIFICATIONS	
<b>Electrical data</b> Contact Rating -switching 25 mA, 24 V DC -non-switching 100 mA, 50 V DC Contact Resistance -initial 50 mΩ max. -after life test 100 mΩ max. Insulation Resistance 1000 MΩ min. at 100 V DC Withstanding Voltage 500 V AC for 1 Minute Capacitance between adjacent switches 5 pF max.	<b>Mechanical and Environmental data</b> Operating temperature - 25°C to +70°C Storage temperature - 40°C to +85°C Operating force 800 gf max. Mechanical life 2000 operations Vibration 10 Hz – 50 Hz – 10 Hz for 6 hours

FEATURES	
<ul style="list-style-type: none"> <li>Same size as an IC, 7.62mm (.300"), can be assembled by any automatic IC Inserter</li> <li>Smaller size makes better heat convection during PC board wave soldering</li> <li>Tape sealed to withstand solder vapors and board washing</li> </ul>	<ul style="list-style-type: none"> <li>All plastics used are UL 94V-0 grade fire retardant</li> <li>Twin contact design to ensure stable contact</li> <li>Gold plated contacts to ensure low contact resistance, and tin plated terminal to prevent contamination during soldering (<i>gold/tin</i>)</li> <li>Standard packing method Tube</li> </ul>

### How to order

DAH – 1 xx – XXxx Z

Contact Form	Nbr of positions	Actuator, Sealing and DIP Space
<b>1</b> = SPST	see under position/dimension box above  Example: 2 Position = <b>02</b> 3 Position = <b>03</b> etc.	<b>L</b> = Low profile Actuator and DIP space 8.50mm <b>LT</b> = Low profile Actuator & Tape sealed & DIP space 8.50mm <b>L01</b> = Low profile Actuator and DIP space 7.62mm <b>LT01</b> = Low profile Actuator & Tape sealed & DIP space 7.62mm <b>E</b> = Extended Actuator and DIP space 7.62mm <b>E01</b> = Extended Actuator and DIP space 8.50mm

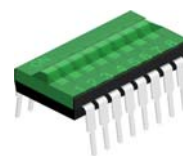
**Construction****Options**

1. Two kinds of pitch available as attached table

2. Special marking and body color available

3. Tape sealed

Actuator Type	Pitch (mm)	
	Standard	Option
E	7.62	8.50
L	8.50	7.62

**SPECIFICATIONS****Electrical data**

Contact Rating	25 mA, 24 V DC
-switching	100 mA, 50 V DC
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	500 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max.

**Mechanical and Environmental data**

Operating temperature	- 25°C to +70°C
Storage temperature	- 40°C to +85°C
Operating force	800 gf max.
Mechanical life	2000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

**FEATURES**

- End stackable for standard 2.54mm (.100") integrated circuit pitch
- Same size as an IC, 7.62mm (.300"), can be assembled by any automatic IC Inserter
- Tape sealed to withstand solder vapors and board washing

- All plastics used are UL 94V-0 grade fire retardant
- Twin contact design to ensure stable contact
- Gold plated contacts to ensure low contact resistance, and tin plated terminal to prevent contamination during soldering (*gold/tin*)
- Standard packing method Tube

**How to order**

DAM – 1 xx – XXxx Z

**Contact Form**

1 = SPST

**Nbr of positions**

see under position/dimension box above

Example:  
1 Position = 01  
2 Position = 02  
etc.

**Actuator, Sealing and DIP Space**

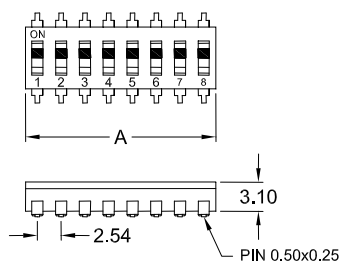
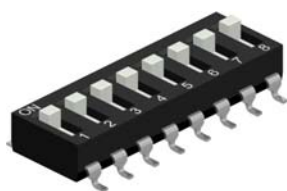
<b>L</b>	=	Low profile Actuator and DIP space 8.50mm
<b>LT</b>	=	Low profile Actuator & Tape sealed & DIP space 8.50mm
<b>L01</b>	=	Low profile Actuator and DIP space 7.62mm
<b>LT01</b>	=	Low profile Actuator & Tape sealed & DIP space 7.62mm
<b>E</b>	=	Extended Actuator and DIP space 7.62mm
<b>E01</b>	=	Extended Actuator and DIP space 8.50mm

# DSD / DSL Series

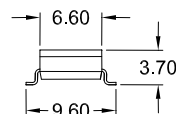
SLIDE END STACKABLE "SMT" TYPE



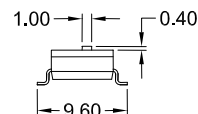
## DSD Gull Wing Type



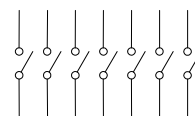
Low Profile Actuator



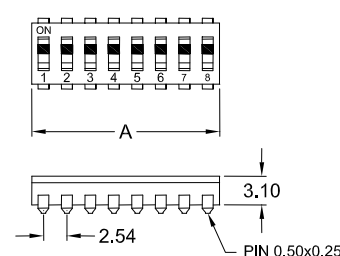
Extended Actuator



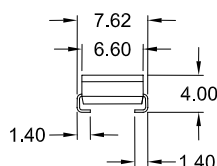
Circuit diagram



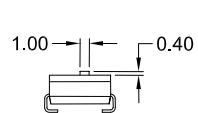
## DSL J-Leg Type



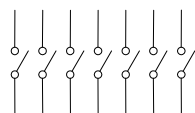
Low Profile Actuator



Extended Actuator



Circuit diagram



Position	1	2	3	4	5	6	7	8	9	10	12
Dim. "A"	2.50	5.04	7.58	10.12	12.66	15.20	17.74	20.28	22.82	25.36	30.43

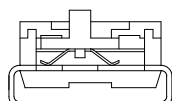
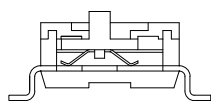
DSL Series: 1 position switch is not available

Unit: mm

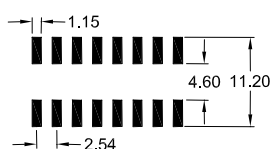
### Construction

DSD

DSL



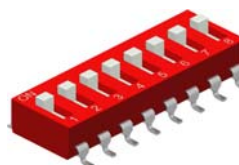
### PCB SMT Layout



### Options

1. Special marking and body color available

2. Tape sealed



## SPECIFICATIONS

### Electrical data

Contact Rating	
-switching	25 mA, 24 V DC
-non-switching	100 mA, 50 V DC
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	500 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max.

### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Soldering Temperature	
-SMT reflow soldering	250°C +0/-5°C for 10 sec.
Operating Force	800 gf max.
Mechanical Life	2000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- End stackable for standard 2.54mm (.100") integrated circuit pitch
- Tape sealed to withstand solder vapors and board washing
- All plastics used are UL 94V-0 grade fire retardant
- Twin contact design to ensure stable contact
- Gold plated contacts to ensure low contact resistance, and tin plated terminal to prevent contamination during soldering (gold/tin)

How to order

DSX – 1 xx – XX Z

### Series

**DSD** = Gull Wing Type  
**DSL** = J-Leg Type

### Nbr of positions

see under position/dimension box above

Example:  
1 Position = 01  
2 Position = 02  
etc.

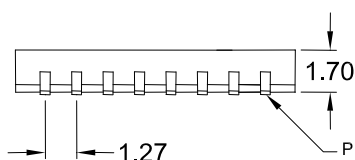
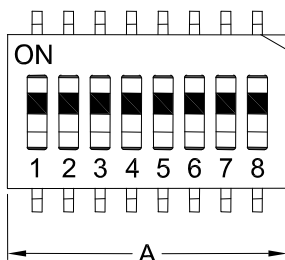
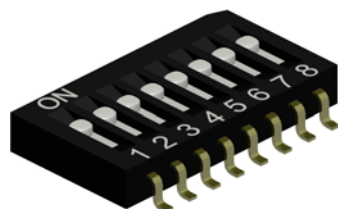
### Actuator, Sealing and Packing

**L** = Low Profile Actuator; Tube packing  
**LT** = Low Profile Actuator & Tape sealed; Tube packing  
**LC** = Low Profile Actuator; Reel packing  
**LD** = Low Profile Actuator & Tape sealed; Reel packing  
**E** = Extended Actuator; Tube packing

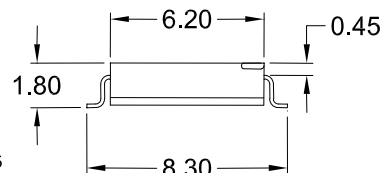
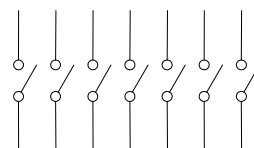


# DHS Series

SLIDE HALF PITCH (1.27mm) "SMT" TYPE



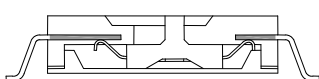
Circuit diagram



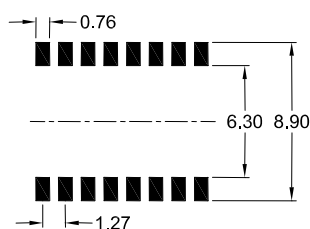
Position	2	4	6	8	10
Dim. "A"	3.70	6.20	8.75	11.30	13.80

Unit: mm

## Construction



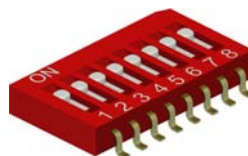
## PCB SMT Layout



## Options

1. Special marking and body color available

2. Tape sealed



## SPECIFICATIONS

### Electrical data

Contact Rating	25 mA, 24 V DC
-switching	100 mA, 50 V DC
-non-switching	
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	500 MΩ min. at 100 V DC
Withstanding Voltage	300 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max.

### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Soldering Temperature	
-SMT reflow soldering	250°C +0/-5°C for 10 sec.
Operating Force	800 gf max.
Mechanical Life	1000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- End stackable for standard 1.27mm (.050") integrated circuit pitch
- Lowest profile DIP Switch, only 1.80mm above PCB
- Tape sealed to withstand solder vapors and board washing

- All plastics used are UL 94V-0 grade fire retardant
- Gold plated contacts, contact & solder area (*gold/gold*), to ensure low contact resistance

## How to order

DHS – x xx – XX Z

### Contact Form

1 = SPST

### Nbr of positions

see under position/dimension box above

Example:  
1 Position = 02  
2 Position = 04  
etc.

### Actuator, Sealing and Packing

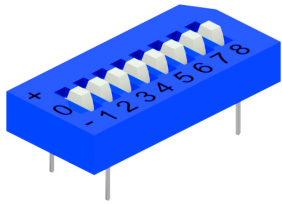
<b>L</b>	= Low Profile Actuator; Tube packing
<b>LT</b>	= Low Profile Actuator & Tape sealed; Tube packing
<b>LC</b>	= Low Profile Actuator; Reel packing
<b>LD</b>	= Low Profile Actuator & Tape sealed; Reel packing

# DTD / DTA / DTS Series

SLIDE TRI-STATE "THT" & "SMT" TYPE

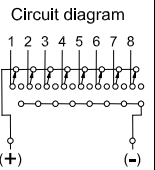
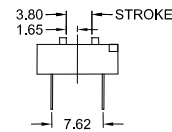
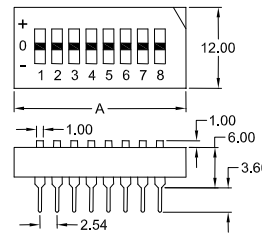


## DTD

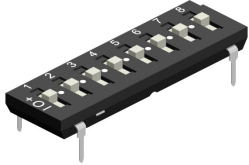


Position	4	5	6	7
Dim. "A"	15.30	17.84	20.38	22.92
Position	8	9	10	
Dim. "A"	25.46	28.00	30.54	

Unit: mm

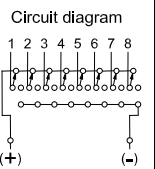
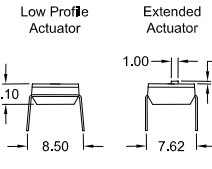
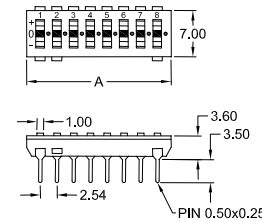


## DTA

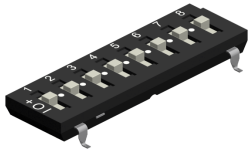


Position	2	3	4	5
Dim. "A"	6.88	9.42	11.96	14.50
Position	6	7	8	9
Dim. "A"	17.04	19.58	22.12	24.66

Unit: mm

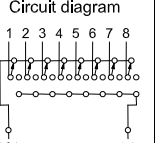
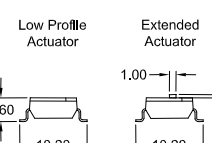
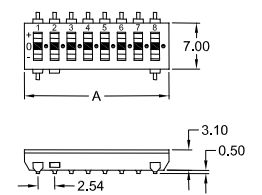


## DTS

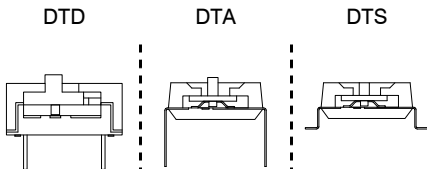


Position	10	12		
Dim. "A"	27.20	32.28		

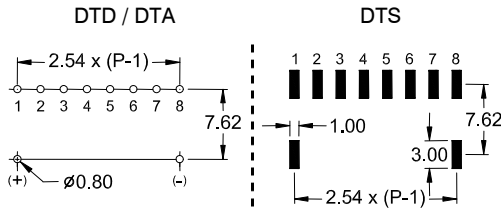
Unit: mm



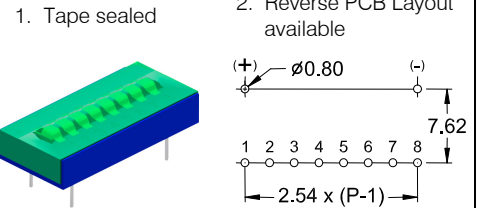
### Construction



### PCB Hole/SMT Layout



### Options



## SPECIFICATIONS

### Electrical data

Contact Rating	25 mA, 24 V DC
-switching	100 mA, 50 V DC
-non-switching	
Contact Resistance	50 mΩ max.
-initial	100 mΩ max.
-after life test	1000 MΩ min. at 100 V DC
Insulation Resistance	500 V AC for 1 Minute
Withstanding Voltage	5 pF max.
Capacitance between adjacent switches	

### Mechanical and Environmental data

Operating temperature	- 25°C to +70°C
Storage temperature	- 40°C to +85°C
Operating force	800 gf max.
Mechanical life	2000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- With three state (1-open-0) setting function, especially suitable for encoding/decoding of tri-state encoder/decoder integrated circuit to obtain more security codes than traditional two-state (1-0) operation. For instance, 9 bits with tri-state gets 19,683 (3<sup>9</sup>) codes, while two-state has 512 (2<sup>9</sup>) codes, gains 38 times in former
- All plastics used are UL 94V-0 grade fire retardant
- Gold plated contacts to ensure low contact resistance, and tin plated terminal to prevent contamination during soldering (*gold/tin*)
- Twin contacts designed to ensure stable contact
- Ideal for Telecommunication, Transmitter, Remote Control and Burglar Alarm Systems which use integrated circuits with tri-state coding systems
- Standard packing method Tube

## How to order

DTX – 1 xx – XX Z

### Series

<b>DTD</b>	= Bottom Epoxy Sealed THT Type
<b>DTA</b>	= Low Profile THT Type
<b>DTS</b>	= Low Profile SMT Type

### Nbr of positions

see under  
position/dimension box  
above

Example:  
2 Position = **02**  
3 Position = **03**  
etc.

### Actuator and Sealing

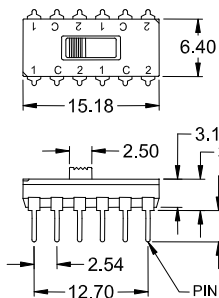
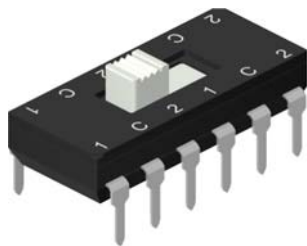
<b>E</b>	= Extended Actuator
<b>ET</b>	= Extended Actuator & Tape sealed
<i>Low Profile Actuator for DTA &amp; DTS Series only!</i>	
<b>L</b>	= Low Profile Actuator
<b>LT</b>	= Low Profile Actuator & Tape sealed

# DSP Series

## SELECTOR SLIDE SWITCH "THT" & "SMT" TYPE



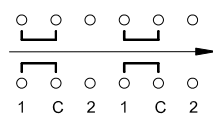
### DSP-42-XX 01 Z (THT Type)



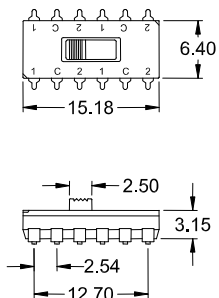
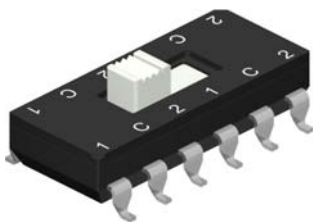
Low Profile Actuator

Extended Actuator

Circuit diagram



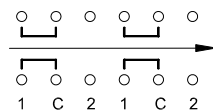
### DSP-42-XX 02 Z (SMT Type)



Low Profile Actuator

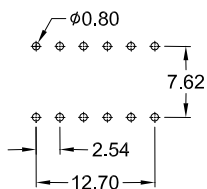
Extended Actuator

Circuit diagram

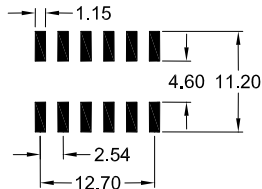


### PCB Layout

#### DSP-42-XX 01 Z (THT Type)

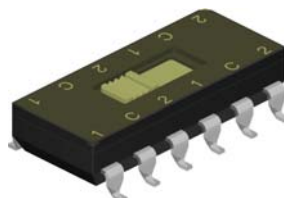


#### DSP-42-XX 02 Z (SMT Type)



### Option

#### Tape sealed



### Application

Ideal as Function and Band Selector Switch in Radio-Cassette, Recorder, Office Equipment, TV sets, VCR etc.

## SPECIFICATIONS

### Electrical data

Contact Rating	25 mA, 24 V DC
-switching	100 mA, 50 V DC
-non-Switching	
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	500 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max.

### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Soldering Temperature	
-SMT reflow soldering	250°C +0/-5°C for 10 sec. max.
-THT wave soldering	250°C +0/-5°C for 10 sec. max.
Operating Force	100 gf min / 1000 gf max.
Mechanical Life	2000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- Same size as an IC, 7.62mm (.300"), can be assembled by any automatic IC inserter
- Top tape sealed to withstand solder vapors and board washing

- All plastics used are UL 94V-0 grade fire retardant
- Gold plated contacts to ensure low contact resistance and tin plated terminal to prevent contamination during soldering

## How to order

DSP – 42 – XX xx Z

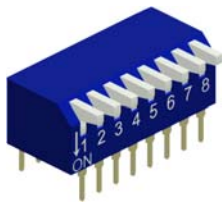
### Contact Form

42 = 4PDT

### Device Type, Actuator, DIP Space & Packing

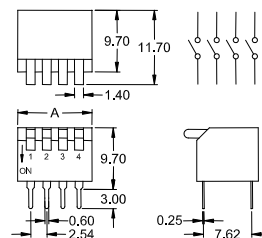
<b>L 01</b>	=	THT Type; Low Profile Actuator DIP space 8.50mm; Tube packing
<b>LT 01</b>	=	THT Type; Low Profile Actuator DIP space 8.50mm; Top sealed; Tube packing
<b>E 01</b>	=	THT Type; Extended Actuator DIP space 7.62mm; Tube packing
<b>L 02</b>	=	SMT Type; Low Profile Actuator; Tube packing
<b>LT 02</b>	=	SMT Type; Low Profile Actuator; Top sealed; Tube packing
<b>LC 02</b>	=	SMT Type; Low Profile Actuator; Reel packing
<b>LD 02</b>	=	SMT Type; Low Profile Actuator; Top sealed; Reel packing
<b>E 02</b>	=	SMT Type; Extended Actuator; Tube packing
<b>EC 02</b>	=	SMT Type; Extended Actuator; Reel packing

### SPST Contact Form

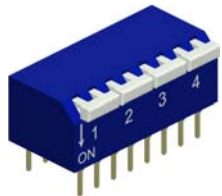


Position	2	3	4	5	6
Dim. "A"	6.70	9.20	11.70	14.20	16.70
Position	7	8	9	10	12
Dim. "A"	19.20	21.70	24.20	26.70	31.80

Unit: mm

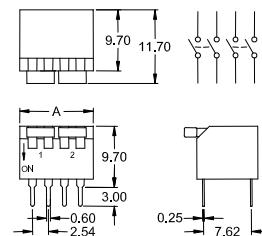


### DPST Contact Form

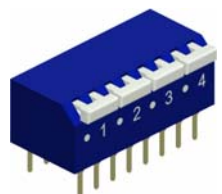


Position	1	2	3	4	5	6
Dim. "A"	6.70	11.70	16.70	21.70	26.70	31.80

Unit: mm

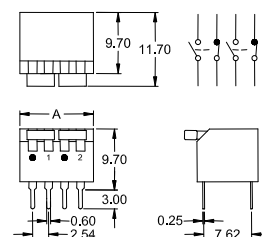


### SPDT Contact Form

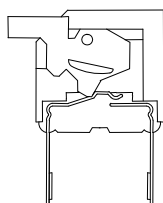


Position	1	2	3	4	5	6
Dim. "A"	6.70	11.70	16.70	21.70	26.70	31.80

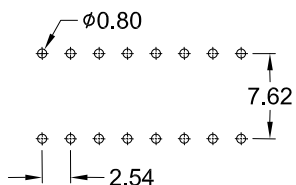
Unit: mm



### Construction

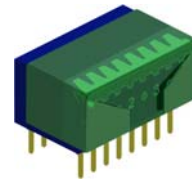
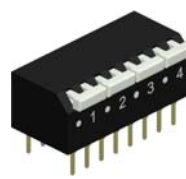
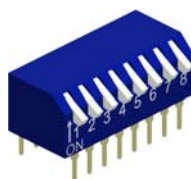


### PCB Hole Layout



### Options

1. Top side "OFF" and "ON" available
2. Black body color available
3. Tape sealed



## SPECIFICATIONS

### Electrical data

Contact Rating	25 mA, 24 V DC
-switching	100 mA, 50 V DC
-non-switching	
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	500 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max.

### Mechanical and Environmental data

Operating temperature	- 25°C to +70°C
Storage temperature	- 40°C to +85°C
Operating force	800 gf max.
Mechanical life	1000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- Edge actuated (piano type) easy setting on closely racked PCB
- Tactile response is performed directly by larger contact pressure to ensure very stable contact
- All plastic are UL 94V-0 grade fire retardant
- Bottom epoxy sealed standard to ensure free of flux immersion during wave soldering
- Contact wiping on make and break
- Gold plated (gold/gold) or Tin plated contact to ensure low contact resistance and long operation life
- Ideal for Data Processing, Telecommunication, Remote Control and Burglar Alarm System use, where manual programming is required

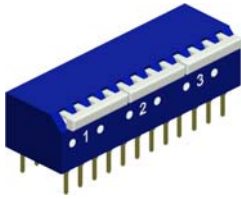
## How to order

DPX – x xx – XX Z

Series	Contact Form	Nbr of positions	"ON/OFF" Position and Sealing
<b>DPG</b> = Gold plated Contacts	<b>1</b> = SPST	see under position/dimension box above	<b>A</b> = Top side OFF
<b>DPS</b> = Tin plated Contacts	<b>2</b> = DPST	Example: 1 Position = 01 2 Position = 02 etc.	<b>AT</b> = Top side OFF & Tape sealed
	<b>3</b> = SPDT		<b>B</b> = Top side ON
			<b>BT</b> = Top side ON & Tape sealed

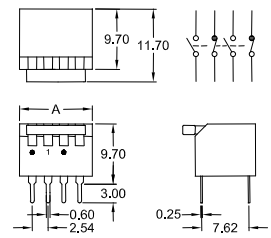


### DPDT Contact Form

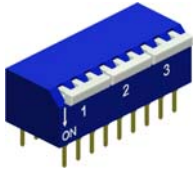


Position	1	2	3
Dim. "A"	11.70	21.70	31.80

Unit: mm

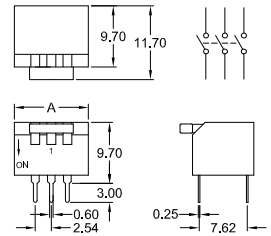


### 3PST Contact Form

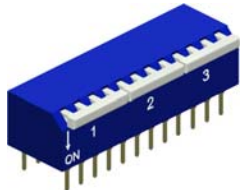


Position	1	2	3	4
Dim. "A"	9.20	16.70	24.20	31.80

Unit: mm

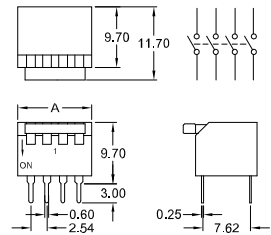


### 4PST Contact Form

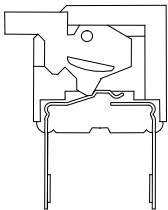


Position	1	2	3
Dim. "A"	11.70	21.70	31.80

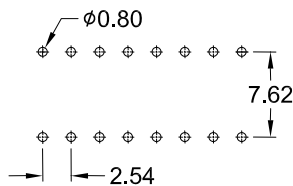
Unit: mm



#### Construction



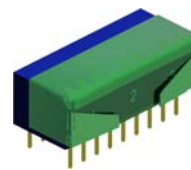
#### PCB Hole Layout



#### Options

1. Black body color available

2. Tape sealed



#### Application

Ideal for Data Processing, Telecommunication, Remote Control and Burglar Alarm System use, where manual programming is required.

### SPECIFICATIONS

#### Electrical data

Contact Rating	25 mA, 24 V DC
-switching	100 mA, 50 V DC
-non-Switching	
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	500 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max.

#### Mechanical and Environmental data

Operating temperature	- 25°C to +70°C
Storage temperature	- 40°C to +85°C
Operating force	800 gf max.
Mechanical life	1000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

### FEATURES

- Edge actuated (piano type) easy setting on closely racked PCB
- Tactile response is performed directly by larger contact pressure to ensure very stable contact
- Bottom epoxy sealed standard to ensure free of flux immersion during wave soldering
- Contact wiping on make and break
- All plastics used are UL 94V-0 grade fire retardant
- Gold plated (gold/gold) or Tin plated contact to ensure low contact resistance and long operation life

### How to order

DPX – x xx – XX Z

#### Series

**DPG** = Gold plated Contacts  
**DPS** = Tin plated Contacts

#### Contact Form

**4** = 3PST  
**5** = 4PST  
**6** = DPDT

#### Nbr of positions

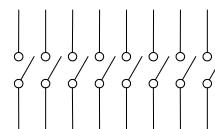
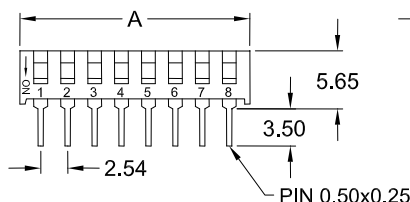
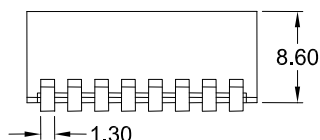
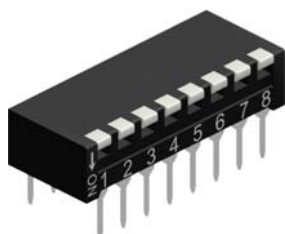
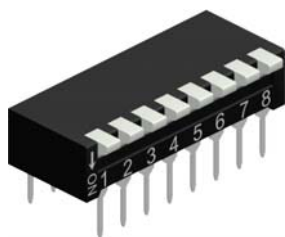
see under position/dimension box above  
Example:  
1 Position = **01**  
2 Position = **02**  
etc.

#### Actuator and Sealing

**A** = Top side OFF  
**AT** = Top side OFF & Tape sealed  
**B** = Top side ON  
**BT** = Top side ON & Tape sealed

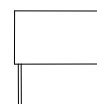
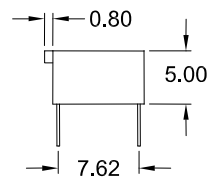
# DPH Series

PIANO LOW PROFILE "THT" TYPE



Extended Actuator

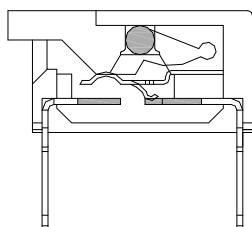
Low Profile Actuator



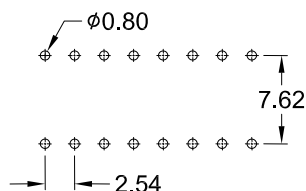
Position	2	4	6	8	10
Dim. "A"	6.50	11.60	16.70	21.70	26.70

Unit: mm

## Construction

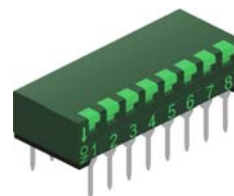


## PCB Hole Layout



## Option

Tape sealed



## SPECIFICATIONS

### Electrical data

Contact Rating	
-switching	25 mA, 24 V DC
-non-Switching	100 mA, 50 V DC
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	500 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max.

### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Operating Force	800 gf max.
Mechanical Life	1000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- Edge actuated (piano type) easy setting on closely racked PCB
- Tactile response is performed directly by larger contact pressure to ensure very stable contact
- All plastic are UL 94V-0 grade fire retardant
- Twin contact design to ensure stable contact
- Contact wiping on make and break
- Gold plated contacts to ensure low contact resistance, and tin plated terminal to prevent contamination during soldering (*gold/tin*)

## How to order

DPH – 1 xx – XX Z

### Nbr of positions

see under  
position/dimension box  
above

Example:  
2 Position = **02**  
4 Position = **04**  
etc.

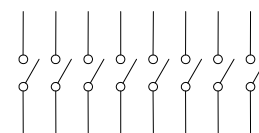
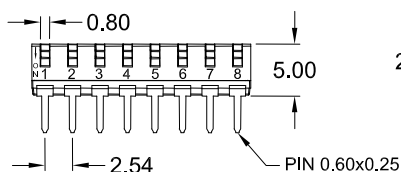
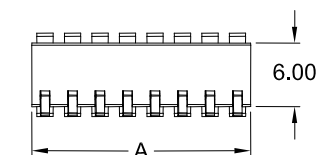
### Actuator and "ON/OFF" Position

**LA** = Low Profile Actuator  
**EA** = Extended Actuator  
**LAT** = Low Profile Actuator & Tape sealed

**the DPH Series is basically "Top Side OFF"**

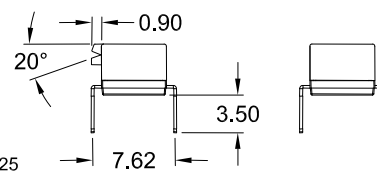
# DPI Series

PIANO LOW PROFILE "THT" TYPE END STACKABLE



Extended Actuator

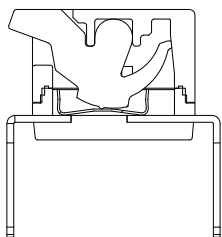
Low Profile Actuator



Position	2	4	6	8	10
Dim. "A"	4.98	10.06	15.15	20.22	25.30

Unit: mm

## Construction



## PCB Hole Layout



## Precautions in Handling

Do not wash the switch!  
Washable Type not available.

## SPECIFICATIONS

### Electrical data

Contact Rating	25 mA, 24 V DC
-switching	100 mA, 50 V DC
-non-switching	
Contact Resistance	
-initial	100 mΩ max.
-after life test	200 mΩ max.
Insulation Resistance	100 MΩ min. at 500 V DC
Withstanding Voltage	500 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max..

### Mechanical and Environmental data

Operating Temperature	- 20°C to +85°C
Storage Temperature	- 40°C to +85°C
Operating Force	800 gf max.
Mechanical Life	2000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- End stackable for standard 2.54mm (.100") integrated circuit pitch
- Twin contact design to ensure stable contact
- All plastics used are UL 94V-0 grade fire retardant
- Gold plated contacts, contact & solder area (*gold/gold*), to ensure low contact resistance

## How to order

DPI – 1 xx – XX 1 0 Z

### Nbr of positions

see under position/dimension box above

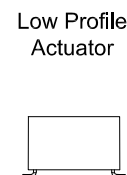
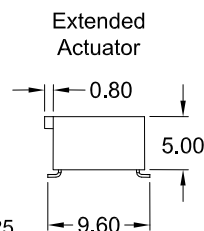
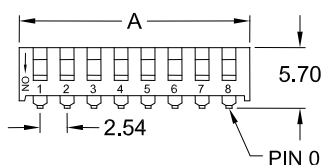
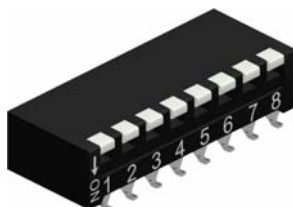
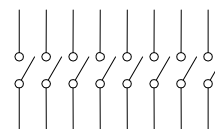
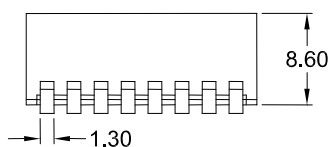
Example:  
2 Position = **02**  
4 Position = **04**  
etc.

### Actuator and "ON/OFF" Position

<b>EA</b>	= Extended Actuator; Top side OFF
<b>EB</b>	= Extended Actuator; Top side ON
<b>LA</b>	= Low profile Actuator; Top side OFF
<b>LB</b>	= Low profile Actuator; Top side ON

### Packing

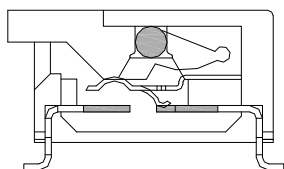
**0** = Tube packing



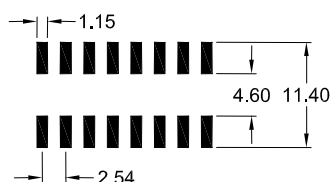
Position	2	4	6	8	10
Dim. "A"	6.50	11.60	16.70	21.70	26.70

Unit: mm

### Construction

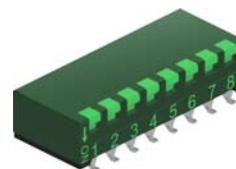


### PCB SMT Layout



### Option

Tape sealed



## SPECIFICATIONS

### Electrical data

Contact Rating	25 mA, 24 V DC
-switching	100 mA, 50 V DC
-non-Switching	
Contact Resistance	
-initial	50 mΩ max.
-after life test	100 mΩ max.
Insulation Resistance	1000 MΩ min. at 100 V DC
Withstanding Voltage	500 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max.

### Mechanical and Environmental data

Operating Temperature	- 25°C to +70°C
Storage Temperature	- 40°C to +85°C
Soldering Temperature	
-SMT reflow soldering	250°C +0/-5°C for 10 sec.
Operating Force	800 gf max.
Mechanical Life	1000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- Edge actuated (piano type) easy setting on closely racked PCB
- Tactile response is performed directly by larger contact pressure to ensure very stable contact
- All plastic are UL 94V-0 grade fire retardant
- Twin contact design to ensure stable contact
- Contact wiping on make and break
- Gold plated contacts to ensure low contact resistance, and tin plated terminal to prevent contamination during soldering (*gold/tin*)

### How to order

DPA – 1 xx – XX Xx Z

#### Nbr of positions

see under  
position/dimension box  
above

Example:  
2 Position = 02  
4 Position = 04  
etc.

#### Actuator and "ON/OFF" Position

**EA** = Extended Actuator; Top side OFF

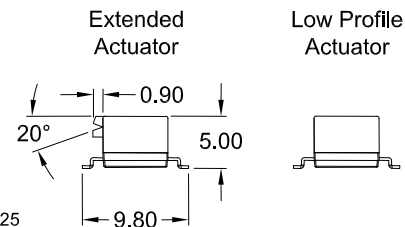
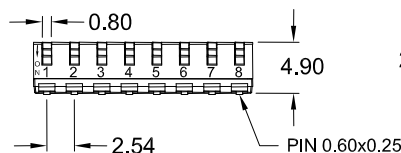
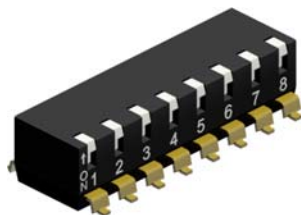
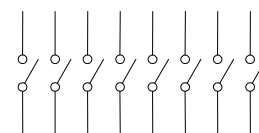
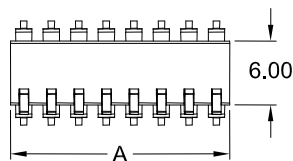
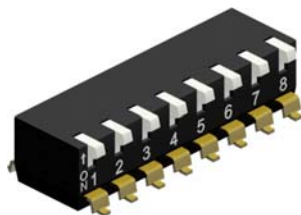
**LA** = Low Profile Actuator; Top side OFF

#### Packing and Sealing

**00** = Tube packing  
**10** = Reel packing

**00** = Tube packing  
**10** = Reel packing  
**T0** = Tube packing & Tape sealed  
**T1** = Reel packing & Tape sealed

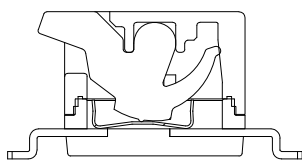




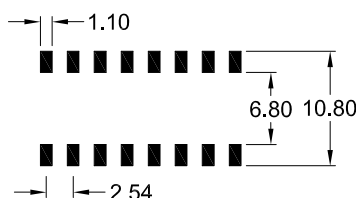
Position	2	4	6	8	10
Dim. "A"	4.98	10.06	15.15	20.22	25.30

Unit: mm

### Construction



### PCB SMT Layout



### Precautions in Handling

Do not wash the switch!  
Washable Type not available.

## SPECIFICATIONS

### Electrical data

Contact Rating	25 mA, 24 V DC
-switching	100 mA, 50 V DC
-non-switching	
Contact Resistance	
-initial	100 mΩ max.
-after life test	200 mΩ max.
Insulation Resistance	100 MΩ min. at 500 V DC
Withstanding Voltage	500 V AC for 1 Minute
Capacitance between adjacent switches	5 pF max..

### Mechanical and Environmental data

Operating Temperature	- 20°C to +85°C
Storage Temperature	- 40°C to +85°C
Soldering Temperature	
-SMT reflow soldering	250°C +0/-5°C for 10 sec.
Operating Force	800 gf max.
Mechanical Life	2000 operations
Vibration	10 Hz – 50 Hz – 10 Hz for 6 hours

## FEATURES

- End stackable for standard 2.54mm (.100") integrated circuit pitch
- Twin contact design to ensure stable contact

- All plastics used are UL 94V-0 grade fire retardant
- Gold plated contacts, contact & solder area (*gold/gold*), to ensure low contact resistance

## How to order

DPM – 1 xx – XX 1 xx Z

### Nbr of positions

see under position/dimension box above

Example:  
2 Position = 02  
4 Position = 04  
etc.

### Actuator and "ON/OFF" Position

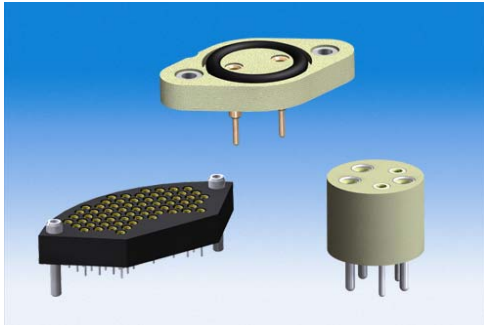
<b>EA</b>	= Extended Actuator; Top side OFF
<b>EB</b>	= Extended Actuator; Top side ON
<b>LA</b>	= Low profile Actuator; Top side OFF
<b>LB</b>	= Low profile Actuator; Top side ON

### Packing

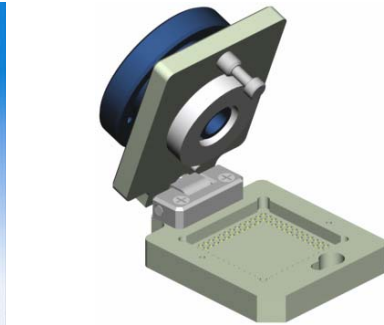
<b>10</b>	= Tube packing
<b>11</b>	= Reel packing
<b>10</b>	= Tube packing
<b>11</b>	= Reel packing
<b>T0</b>	= Tube packing & Tape sealed
<b>T1</b>	= Reel packing & Tape sealed

## Other products from E-tec

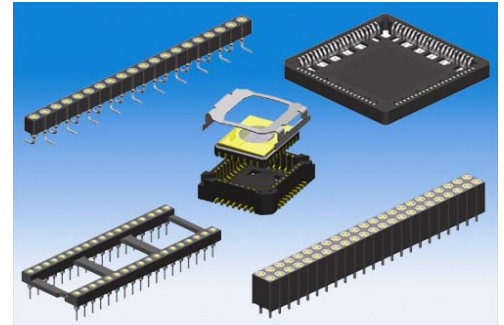
Please contact your closest sales office for further information.



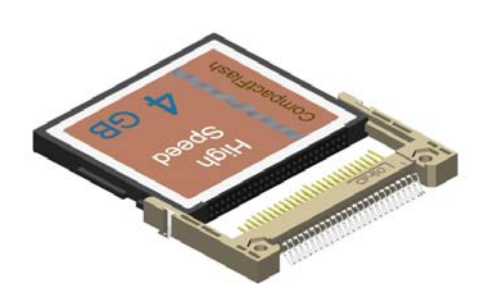
Customized Products



Test Sockets & Adapters



IC - Sockets



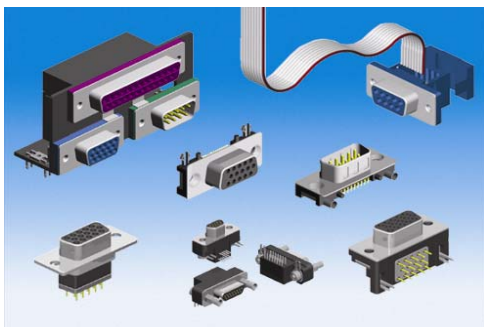
Compact Flash Connectors



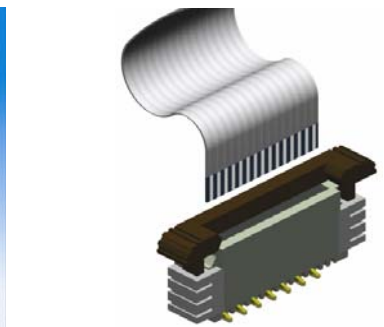
USB & IEEE 1394 Connectors



Mini PCI Express Connectors



D-Sub Connectors



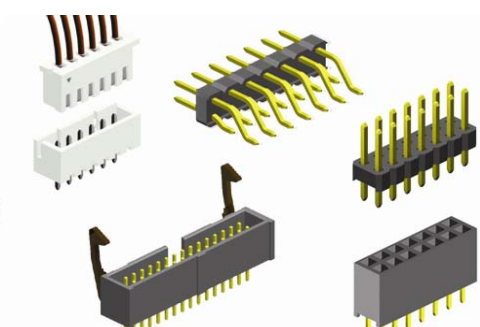
Flex Cable Connectors



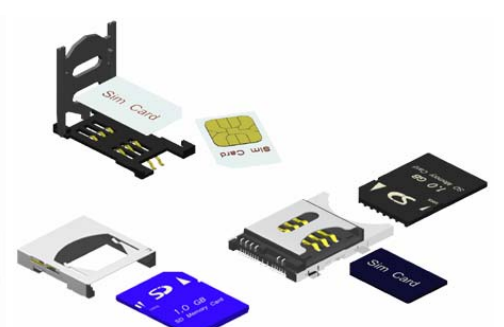
HDMI Connectors



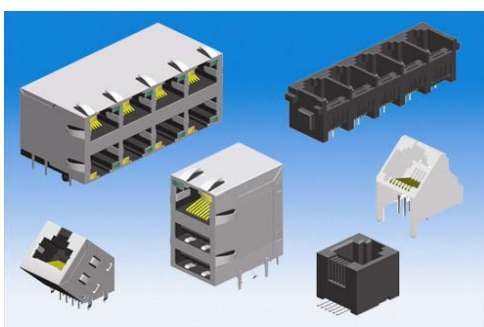
Probe Pin & Probe Pin Connectors



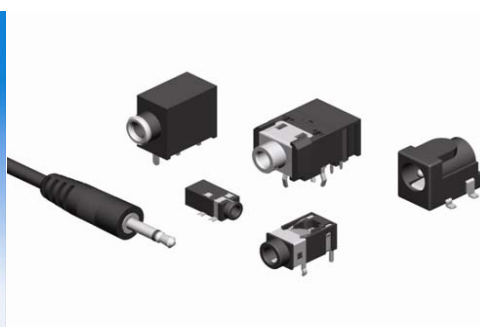
PCB Connectors



Multi Media Card Connectors



Modular Plugs & Jacks



Phono - & DC - Power Connectors



RF - Connectors