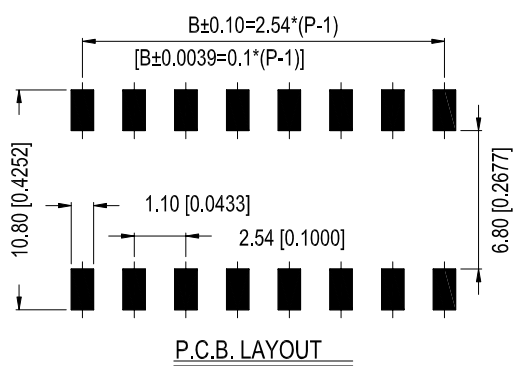
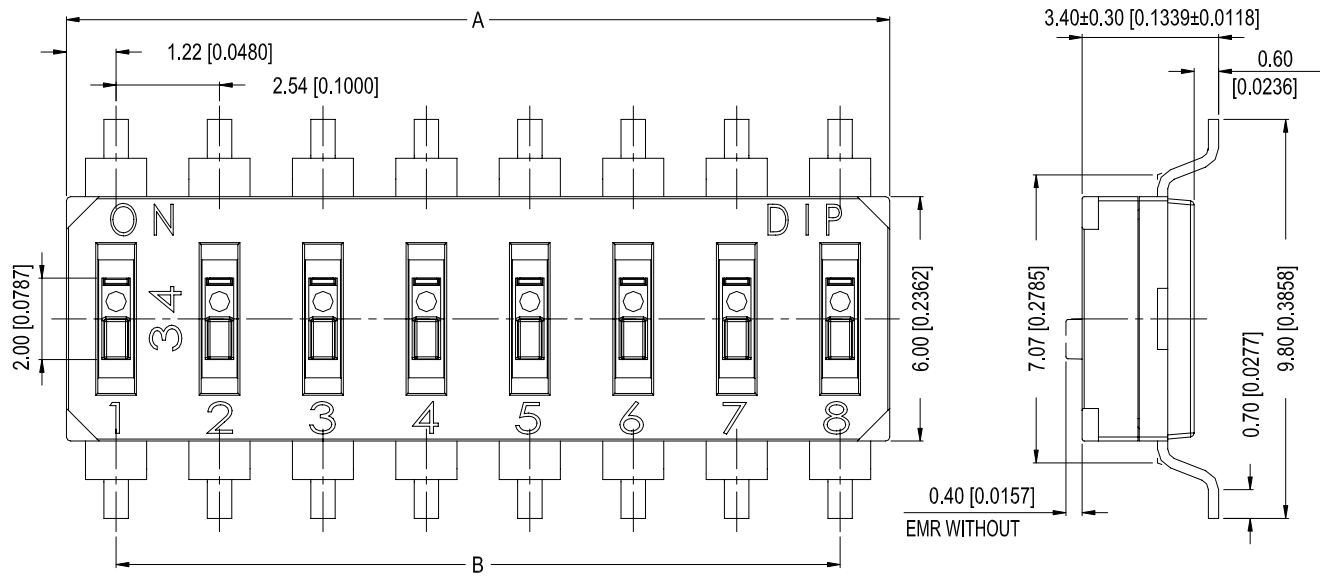




# EM(R)&EI(R) SERIES

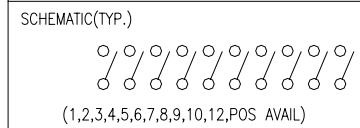
## DIMENSIONS

### EM(R)-V

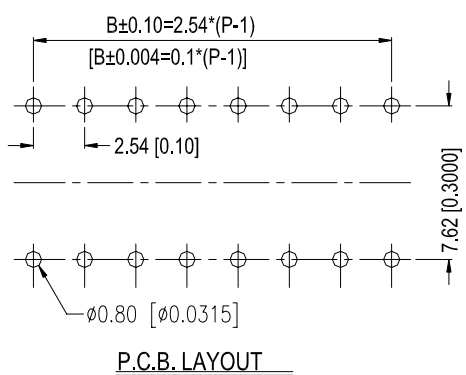
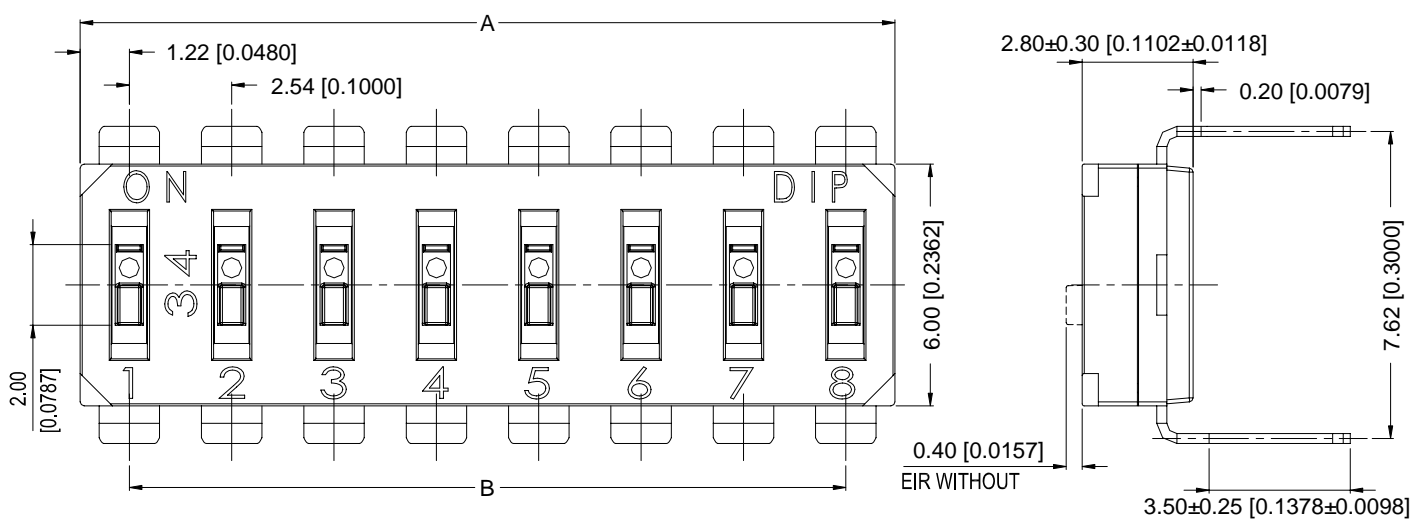


NOTE:  
 1. ALL DIMENSIONS ARE IN MILLIMETERS, BRACKETED DIMENSIONS ARE IN INCHES.  
 2. GENERAL TOLERANCES MAX. ±0.20mm.

PROD. NO.	NO. OF POS.	DIM. A	DIM. B
EM-01-V EMR-01-V	1	2.44[.096]	
EM-02-V EMR-02-V	2	4.98[.196]	2.54[.100]
EM-03-V EMR-03-V	3	7.52[.296]	5.08[.100]
EM-04-V EMR-04-V	4	10.06[.396]	7.62[.300]
EM-05-V EMR-05-V	5	12.60[.496]	10.16[.400]
EM-06-V EMR-06-V	6	15.14[.596]	12.70[.500]
EM-07-V EMR-07-V	7	17.68[.696]	15.24[.600]
EM-08-V EMR-08-V	8	20.22[.796]	17.78[.700]
EM-09-V EMR-09-V	9	22.76[.896]	20.32[.800]
EM-10-V EMR-10-V	10	25.3[0.996]	22.86[.900]
EM-12-V EMR-12-V	12	30.38[1.196]	27.94[1.100]

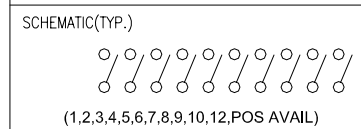


### EI(R)-V



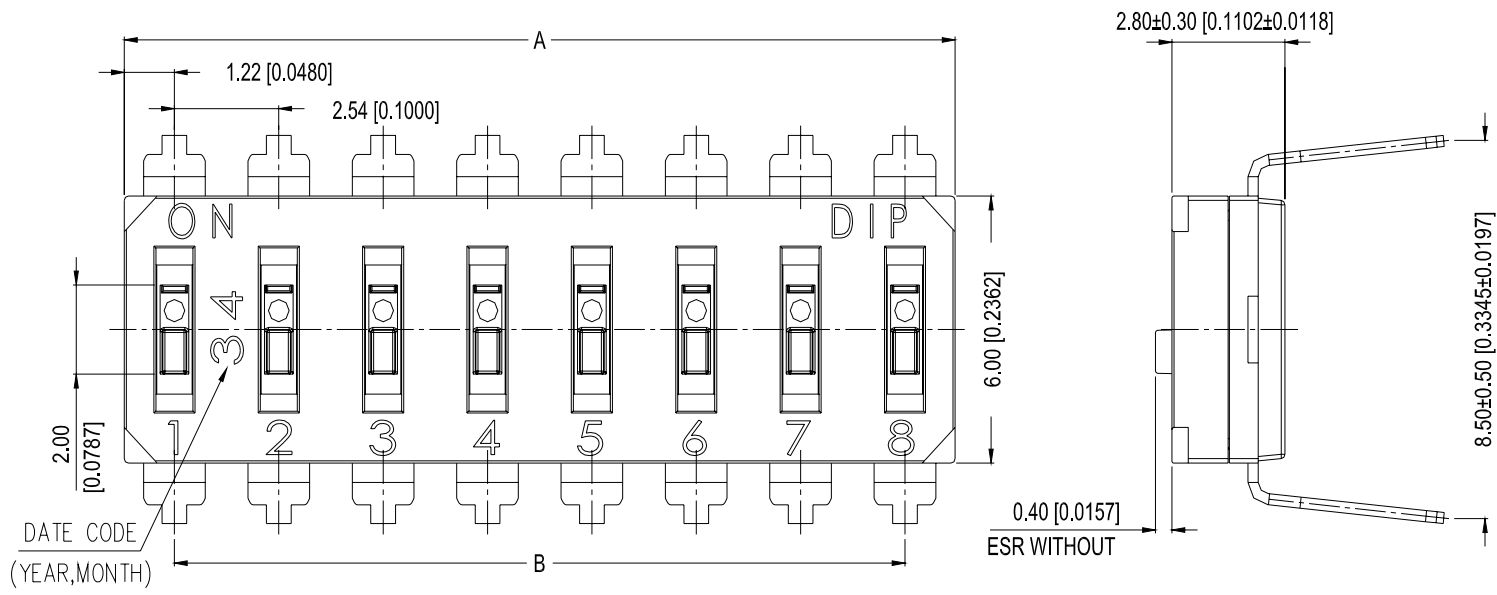
NOTE:  
 1. ALL DIMENSIONS ARE IN MILLIMETERS, BRACKETED DIMENSIONS ARE IN INCHES.  
 2. GENERAL TOLERANCES MAX. ±0.20mm.

PROD. NO.	NO. OF POS.	DIM. A	DIM. B
EI-01-V EIR-01-V	1	2.44[.096]	
EI-02-V EIR-02-V	2	4.98[.196]	2.54[.100]
EI-03-V EIR-03-V	3	7.52[.296]	5.08[.100]
EI-04-V EIR-04-V	4	10.06[.396]	7.62[.300]
EI-05-V EIR-05-V	5	12.60[.496]	10.16[.400]
EI-06-V EIR-06-V	6	15.14[.596]	12.70[.500]
EI-07-V EIR-07-V	7	17.68[.696]	15.24[.600]
EI-08-V EIR-08-V	8	20.22[.796]	17.78[.700]
EI-09-V EIR-09-V	9	22.76[.896]	20.32[.800]
EI-10-V EIR-10-V	10	25.3[0.996]	22.86[.900]
EI-12-V EIR-12-V	12	30.38[1.196]	27.94[1.100]

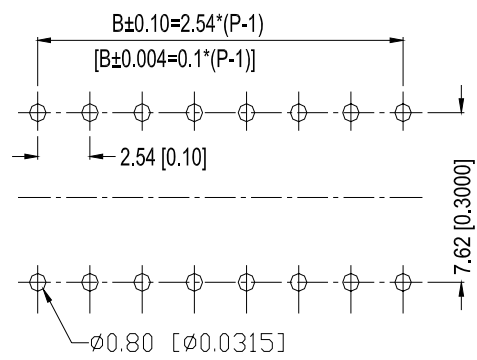
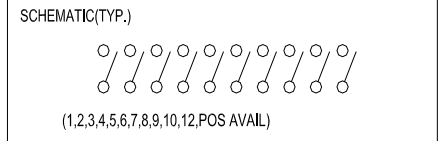


# DIMENSIONS

## ES(R)-V



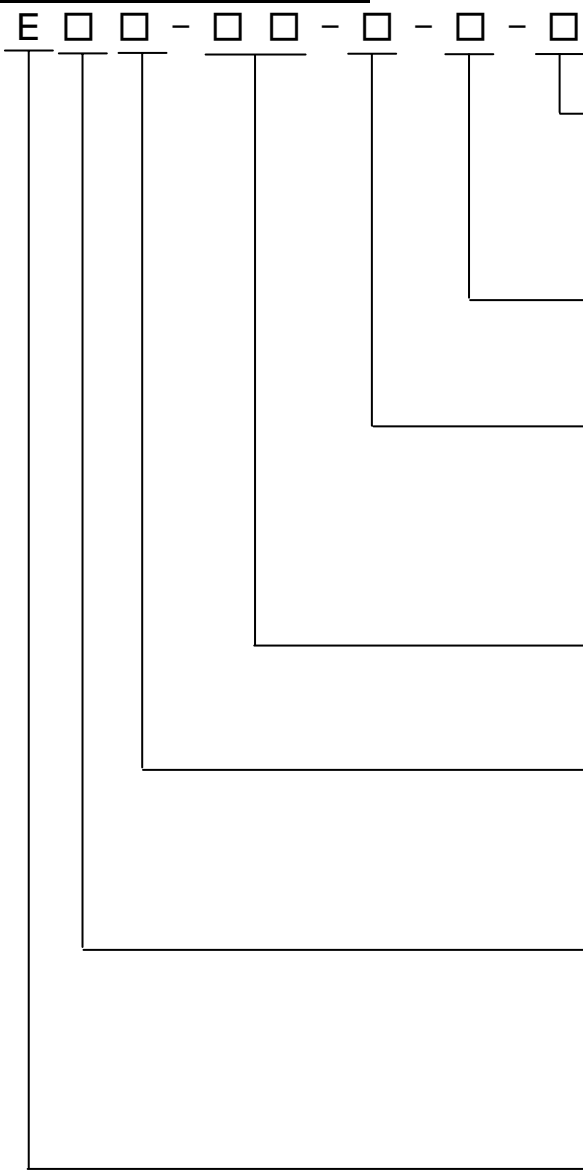
PROD. NO.	NO. OF POS.	DIM. A	DIM. B
ES-01-V ESR-01-V	1	2.44[.096]	
ES-02-V ESR-02-V	2	4.98[.196]	2.54[.100]
ES-03-V ESR-03-V	3	7.52[.296]	5.08[.100]
ES-04-V ESR-04-V	4	10.06[.396]	7.62[.300]
ES-05-V ESR-05-V	5	12.60[.496]	10.16[.400]
ES-06-V ESR-06-V	6	15.14[.596]	12.70[.500]
ES-07-V ESR-07-V	7	17.68[.696]	15.24[.600]
ES-08-V ESR-08-V	8	20.22[.796]	17.78[.700]
ES-09-V ESR-09-V	9	22.76[.896]	20.32[.800]
ES-10-V ESR-10-V	10	25.3[.996]	22.86[.900]
ES-12-V ESR-12-V	12	30.38[1.196]	27.94[1.100]



P.C.B. LAYOUT

NOTE:  
 1.ALL DIMENSIONS ARE IN MILLIMETERS,BRACKETED DIMENSIONS ARE IN INCHES.  
 2.GENERAL TOLERANCES MAX.±0.20mm.

# HOW TO ORDER



- Package Style  
 = Tube  
 T/R= Tape & Reel
- Soldering :  
 V = Lead Free Solderable
- Seal Tape :  
 = Without Tape  
 T = Top Tape Sealed  
 (For Recessed Actuator Only)
- Number Of Positions :  
 01.02.03.04.05.06.07.08.09.10.12 Positions.
- Actuator Type :  
 = Raised Actuator  
 R = Recessed Actuator
- Terminal Type :  
 M = S.M.T Type  
 I = Through Hole Type 7.62mm  
 S = Through Hole Type 8.50mm
- End-Stackable Dip Switch

Remark : Default in OFF position, ON position is also available. ( Pls consult your sales contact )

## SPECIFICATION

### △MECHANICAL

Mechanical Life: 2,000 operations.  
 Operation Force: 1,000gf max.  
 Stroke: 1.0 mm  
 Operation Temp: -20°C to +85°C  
 Storage Temperature: -40°C to +85°C

### △ELECTRICAL

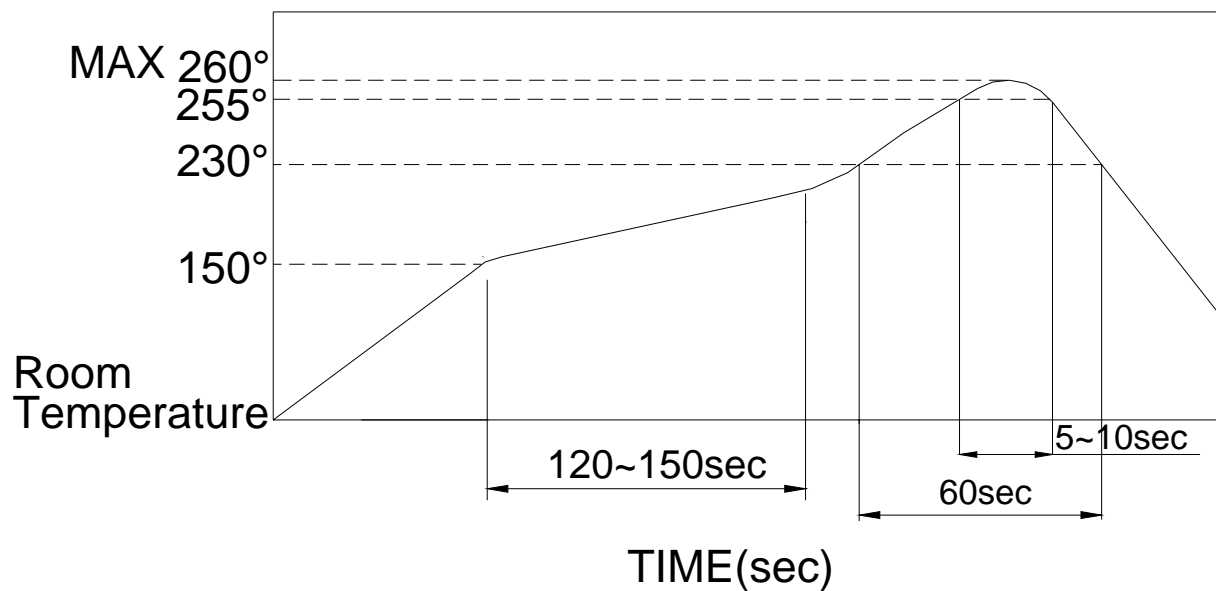
Electrical Life: 2,000 cycles.  
 Rating: 25 mA, 24 VDC.  
 Contact resistance: 100mΩ min. at 500VDC.  
 Insulation Resistance: 100MΩ max, at 500 VDC.  
 Dielectric Strength: 500VAC/1 minute.  
 Contact Arrangement 1 pole throw.

## MATERIAL

△BASE & COVER: UL94V-0 Nylon High-Temp Thermoplastic. Color: Black.  
 △ACTUATOR: UL94V-0 LCP High-Temp Thermoplastic. Color: White.  
 △CONTACT: Alloy Copper with gold plated.  
 △TERMINAL: Brass with gold plated.  
 △TAPE: Kapton.

## SOLDERING PROCESSES

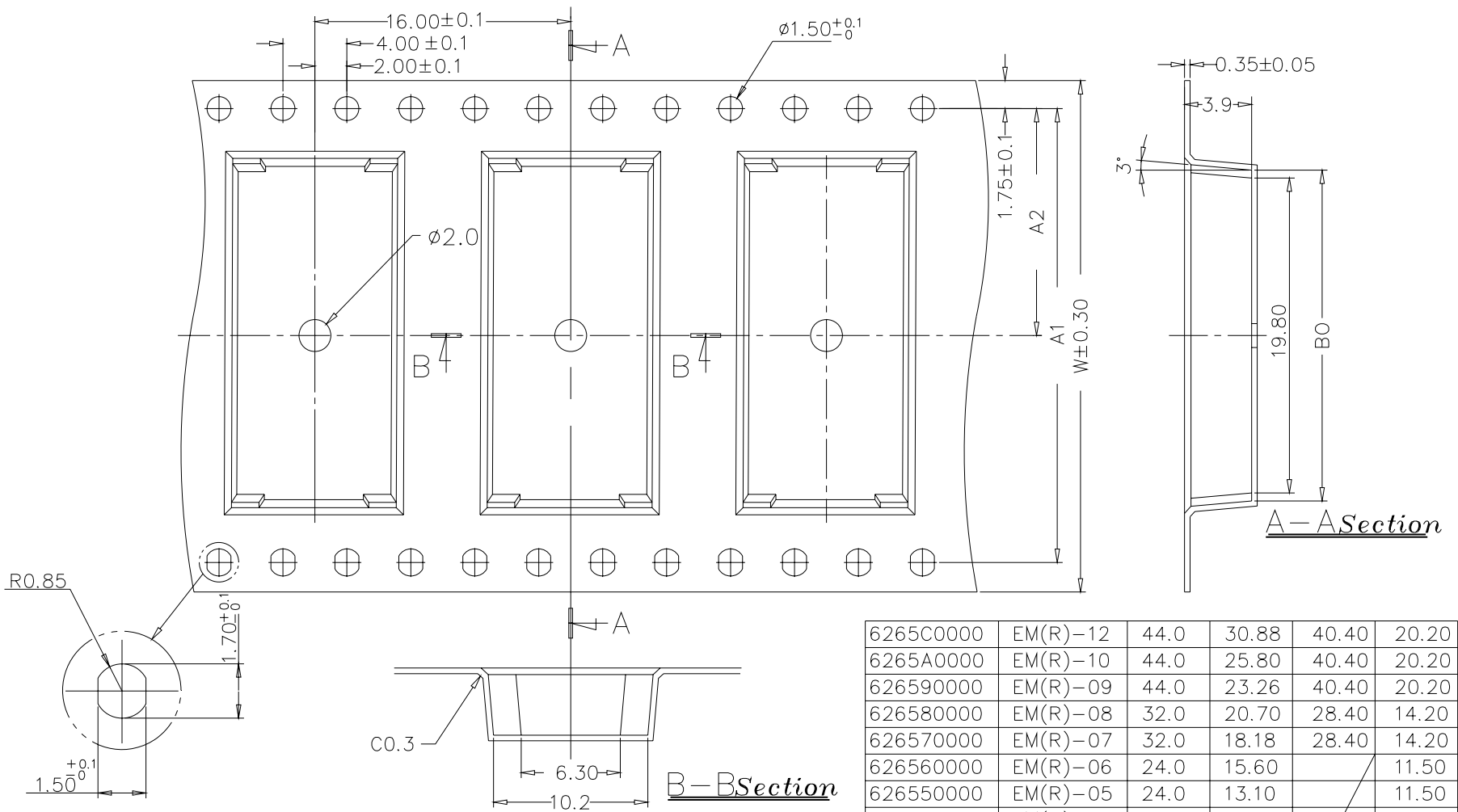
△WAVE SOLDERING: Recommended solder temperature at 500°F(260°C) max. of 5 seconds for through hole type.  
 △HAND SOLDERING: Use a soldering iron of 30 watts, controlled at 350°C approximately max 5 seconds while applying.  
 △REFLOW SOLDERING: When applying reflow soldering, the peak temperature or the reflow Oven should be set at 260°C max.  
 △Do not wash the switch except top tape sealed type, which suitable for spray cleaning method from top of the s/w.  
 △Reflow Temperature Profile:



## PACKING

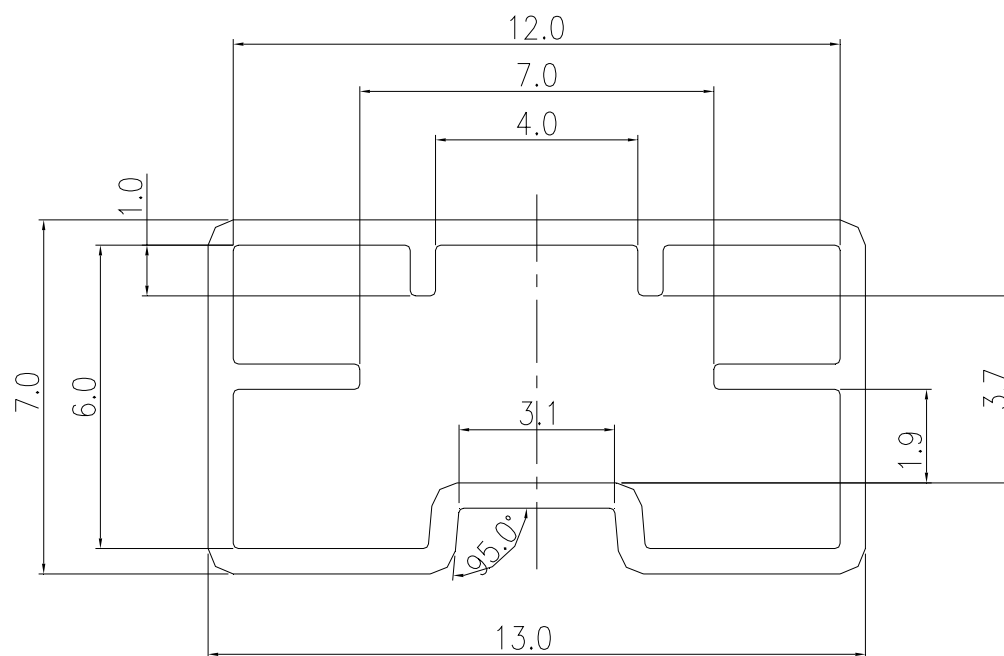
Part Number	Number Per Tube	Number Per Reel
EM、EI(R)-01	194	-
EM、EI(R)-02	95	-
EM、EI(R)-03	63	-
EM、EI(R)-04	47	-
EM、EI(R)-05	38	-
EM、EI(R)-06	31	-
EM、EI(R)-07	27	-
EM、EI(R)-08	23	-
EM、EI(R)-09	21	-
EM、EI(R)-10	18	-
EM、EI(R)-12	12	-
EM(R)-01、02、03	-	900
04、05、06、		
07、08、09、		
10、12、		

**EM(R) REEL**



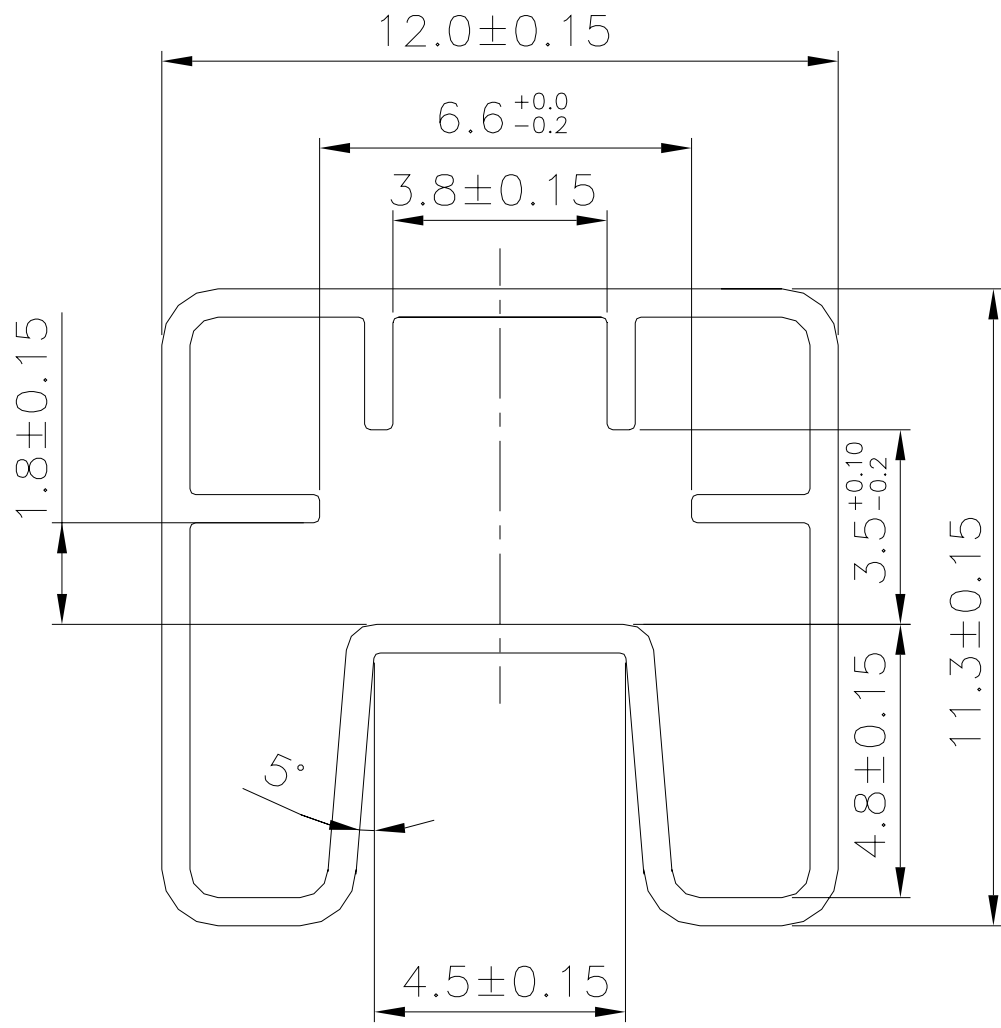
1. General Tolerance :  $\pm 0.10\text{mm}$
2. Carrier with bilateral holes is applied when carrier width is 32mm and above.
3. The diameter of the detection hole is 2.0mm for carrier width 32mm and above, while 1.5mm for carrier width under 32mm

**EM(R) TUBE**



**General Tolerance :  $\pm 0.20\text{mm}$**

EII(R) TUBE



General Tolerance :  $\pm 0.20\text{mm}$