



### SPECIFICATIONS

**CONTACT RATING:** Dependent upon contact material See page 18.

**MECHANICAL LIFE:** 30,000 make-and-break cycles.

**CONTACT RESISTANCE:** 10mΩ max. initial @ 2-4VDC  
100mA for both silver and gold plated contacts.

**INSULATION RESISTANCE:** 1,000MΩ min.

**DIELECTRIC STRENGTH:** 1,000 V RMS@sea level.

**OPERATING TEMPERATURE:** -30°C to 85°C.

### MATERIALS

**CASE & BUSHING:** Glass filled nylon 66, flame retardant, heat stabilized (UL94V-0)

**ACTUATOR:** Brass, chrome plated with internal O-ring seal standard.

**SWITCH SUPPORT:** Brass or steel, tin plated.

**SWITCH SUPPORT RETAINER:** Stainless steel.

**CONTACTS/TERMINALS:** copper alloy, with silver or gold plated. (See Page 18)

## HOW TO ORDER

MODEL NO.	ACTUATOR	BUSHING	TERMINATIONS	CONTACT MATERIAL	SEAL	ROHS SOLDERING
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> </div>	<div style="border: 1px solid black; width: 15px; height: 15px;"></div>	<div style="border: 1px solid black; width: 15px; height: 15px; text-align: center; color: red;">E</div>	<div style="border: 1px solid black; width: 15px; height: 15px;"></div>
<b>MODEL NO.</b>	<b>ACTUATOR</b>	<b>BUSHING</b>	<b>TERMINATIONS</b>	<b>CONTACT MATERIAL</b>	<b>SEAL</b>	<b>ROHS SOLDERING</b>
<b>1AS1</b> SP On-None-On <b>1AS2</b> SP On-None-Mom <b>1AS3</b> SP On-Off-On <b>1AS4</b> SP Mom-Off-Mom <b>1AS5</b> SP On-Off-Mom <b>1AD1</b> DP On-None-On <b>1AD2</b> DP On-None-Mom <b>1AD3</b> DP On-Off-On <b>1AD4</b> DP Mom-Off-Mom <b>1AD5</b> DP On-Off-Mom <b>1AD6</b> DP On-On-On <b>1AD7</b> DP Mom-On-Mom <b>1AD8</b> DP On-On-Mom <b>1A31</b> 3P On-None-On <b>1A32</b> 3P On-None-Mom <b>1A33</b> 3P On-off-On <b>1A34</b> 3P Mom-Off-Mom <b>1A35</b> 3P On-Off-Mom	<b>T1</b> 12.70 high <b>T2</b> 7.62 high <b>TA</b> plastic, anti-static, black 12.70 high <b>TB</b> plastic, anti-static black 7.62 high <b>TC</b> plastic, anti-static silver 12.70 high	<b>B1</b> 8.80 high <b>B4</b> 6.10 high	<b>M1</b> Solder Lug <b>M2</b> PC thru-hole <b>M5-1</b> 18.70 high, wire wrap <b>M5-2</b> 24.20 high, wire wrap <b>M5-3</b> 10.55 high, wire wrap <b>M5-4</b> 26.97 high, wire wrap <b>M6</b> Right angle, PC thru-hole <b>M6N</b> Right angle, snap-in, PC thru-hole <b>M7</b> Vertical right angle, PC thru-hole <b>VS2</b> 11.68 high, V-bracket <b>V2N</b> 11.68 high, snap-in V-bracket <b>VS3</b> 16.00 high, V-bracket	<b>Q</b> Silver <b>R</b> Gold <b>G</b> Gold, pure-tin <b>S</b> Silver, pure-tin <b>C</b> Gold over silver <b>K</b> Gold over silver, pure-tin	<b>E</b> EPOXY (std)	<b>ROHS SOLDERING</b> <input type="checkbox"/> RoHS Compliant <input type="checkbox"/> RoHS & Lead Free

### SWITCH FUNCTION

NO. POLES	UL/CSA MODEL NO.	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS / SCHEMATIC		
			POS.1	POS.2	POS.3	POS.1	POS.2	POS.3
SP	Q11A11	1AS1	ON	NONE	ON		N/A	
	Q11A12	1AS2	ON	NONE	MOM			
	Q11A13	1AS3	ON	OFF	ON			
	Q11A14	1AS4	MOM	OFF	MOM			
	Q11A15	1AS5	ON	OFF	MOM			
DP	Q11A21	1AD1	ON	NONE	ON		N/A	
	Q11A22	1AD2	ON	NONE	MOM			
	Q11A23	1AD3	ON	OFF	ON			
	Q11A24	1AD4	MOM	OFF	MOM			
	Q11A25	1AD5	ON	OFF	MOM			
	Q11A26	1AD6	ON	ON	ON			
	▲ Q11A27	1AD7	MOM	ON	MOM			
	▲ Q11A28	1AD8	ON	ON	MOM			
3P	Q11A31	1A31	ON	NONE	ON		N/A	
	Q11A32	1A32	ON	NONE	MOM			
	Q11A33	1A33	ON	OFF	ON			
	Q11A34	1A34	MOM	OFF	MOM			
	Q11A35	1A35	ON	OFF	MOM			

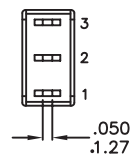
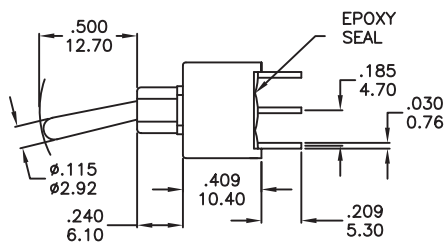
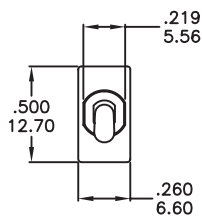
MOM=MOMENTARY

▲ Please check the availability in advance before order

### POLE OPTIONS



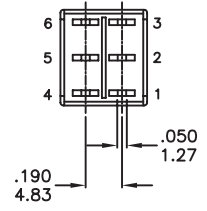
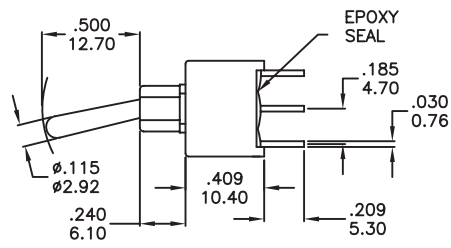
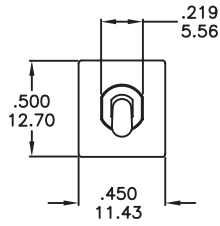
SPDT



Part No. Shown : 1AS1T1B4M2RE



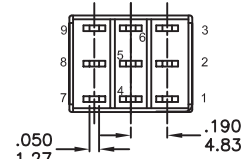
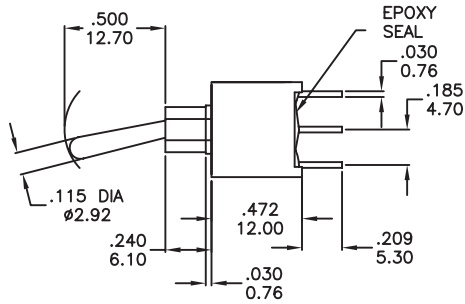
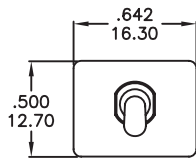
**DPDT**



Part No. Shown : 1AD1T1B4M2RE



**3PDT**

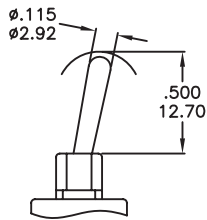


Part No. Shown : 1A31T1B4M2RE

### ACTUATOR OPTIONS

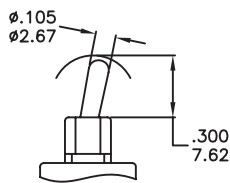
Actuator shown with standard B4 Bushing, Subtract .085(2.15) for B1 bushing.

**T1**



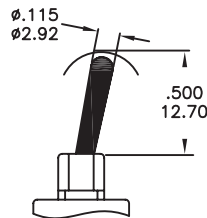
Standard with M1,M2 terminations.

**T2**



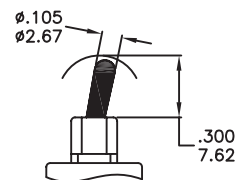
Standard with M6,M7,VS2-3 terminations.

**TA & TC**



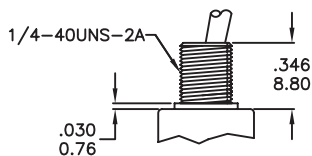
ESD PLASTIC ACTUATOR (TC anti-static,silver)

**TB**



### BUSHING OPTIONS

**B1**



Std for M1

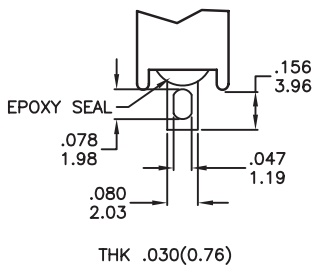
**B4**



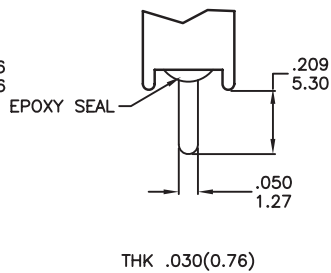
Std for M2, M6, M7, VS termination

### TERMINATION OPTIONS

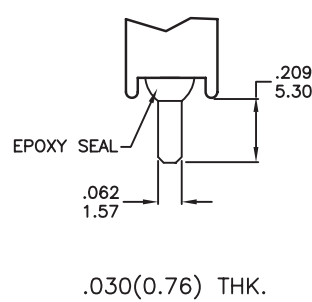
#### M1 SOLDER LUG



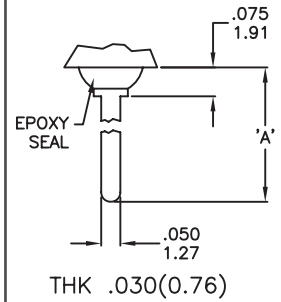
#### M2 PC THRU-HOLE



#### M3 QUICK CONNECT



#### M5 WIRE WRAP



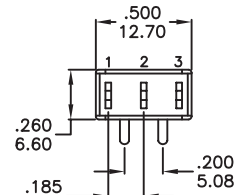
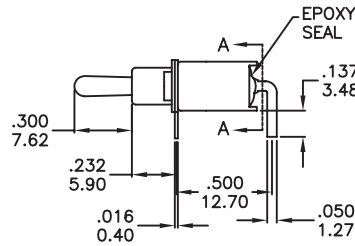
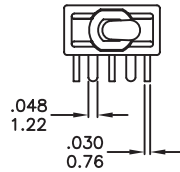
#### OTHER TERMINATION OPTIONS

- M6 RIGHT ANGLE P.C. MOUNT
- M7 RIGHT ANGLE P.C. MOUNT
- VS2 VERTICAL BRACKET P.C. MOUNT
- VS3 VERTICAL BRACKET P.C. MOUNT

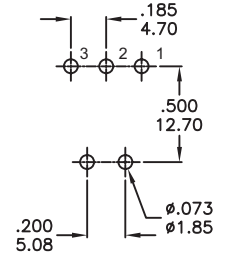
RE Mating Quick Connector  
Amp P/N 60900-1

OPTION CODE	DIM. 'A'
M5-1	.736(18.70)
M5-2	.953(24.20)
M5-3	.415(10.55)
M5-4	1.062(26.97)

#### M6



#### P.C. MOUNTING

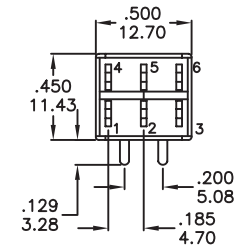
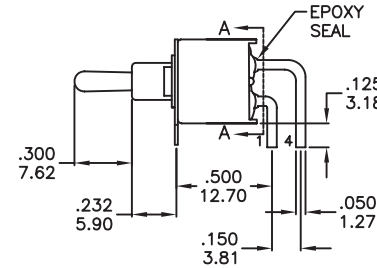
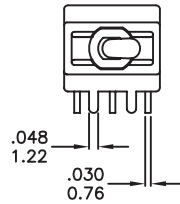


Part No. Shown : 1AS1T2B4M6RE

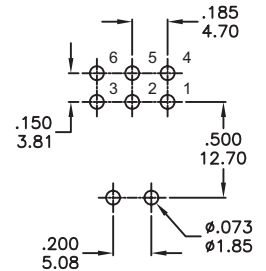
SECTION A-A  
TERM. NOS. FOR  
REFERENCE ONLY

#### SPDT

#### M6



#### P.C. MOUNTING

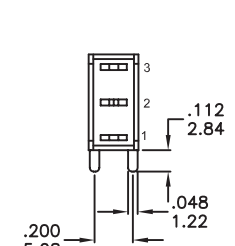
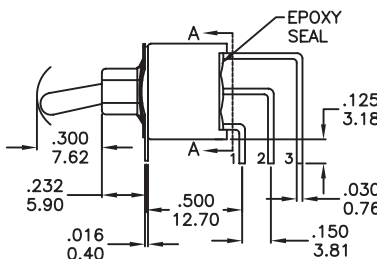
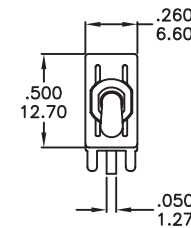
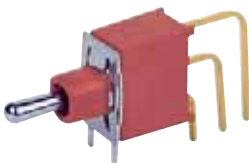


Part No. Shown : 1AD1T2B4M6RE

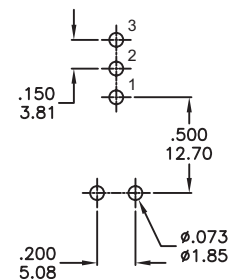
SECTION A-A  
TERM. NOS. FOR  
REFERENCE ONLY

#### DPDT

#### M7



#### P.C. MOUNTING

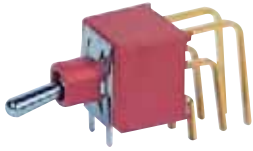


Part No. Shown : 1AS1T2B4M7RE

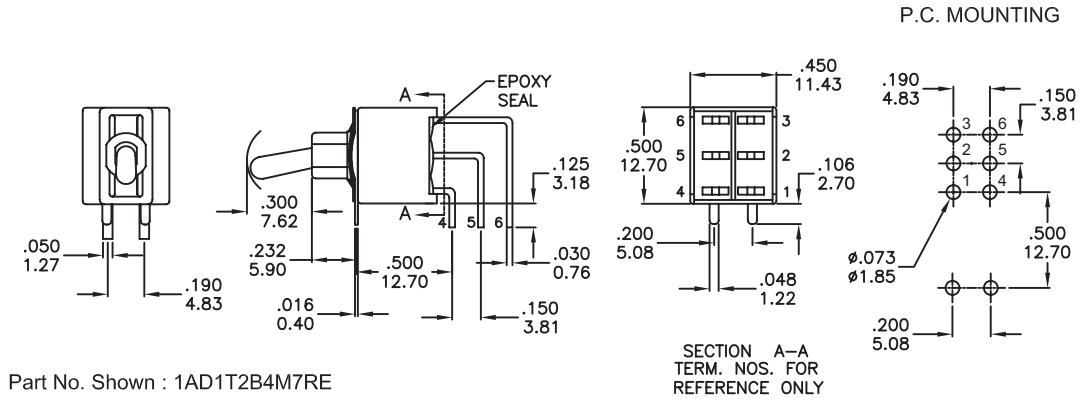
SECTION A-A  
TERM. NOS. FOR  
REFERENCE ONLY

#### SPDT

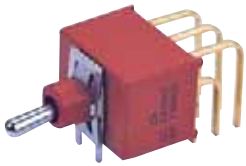
M7



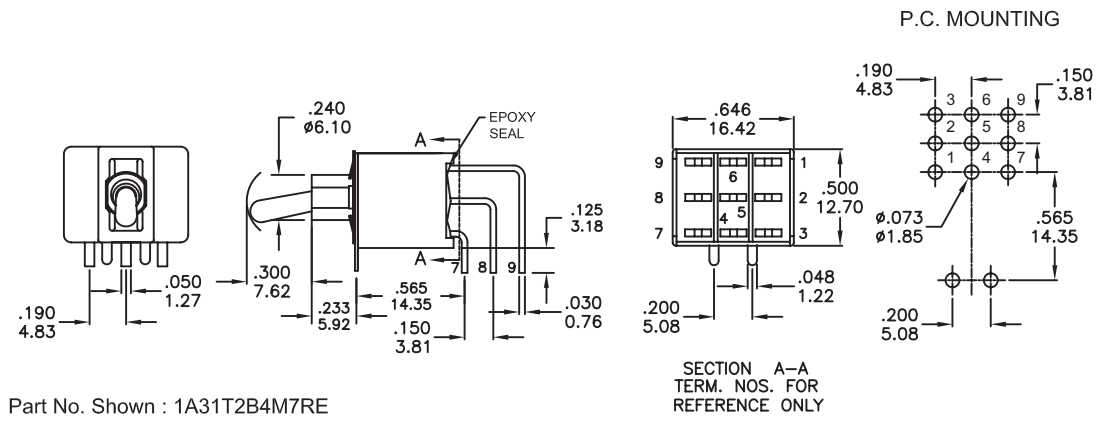
DPDT



M7



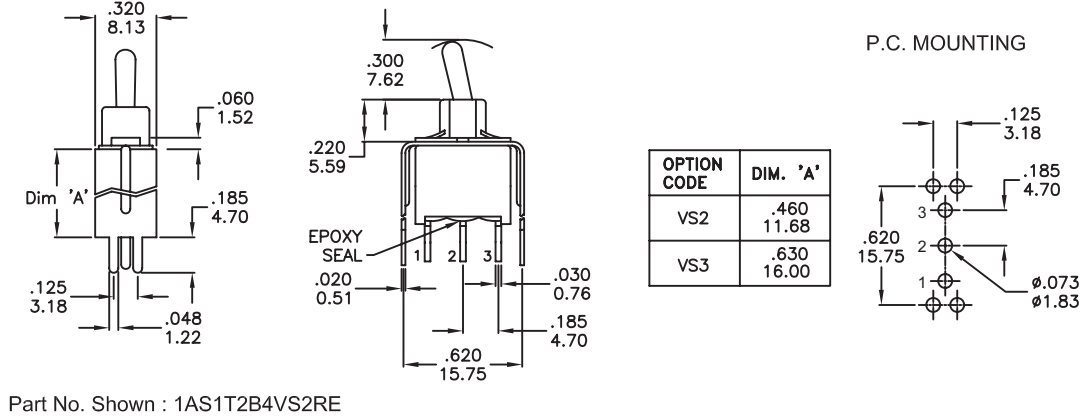
3PDT



VS2-VS3



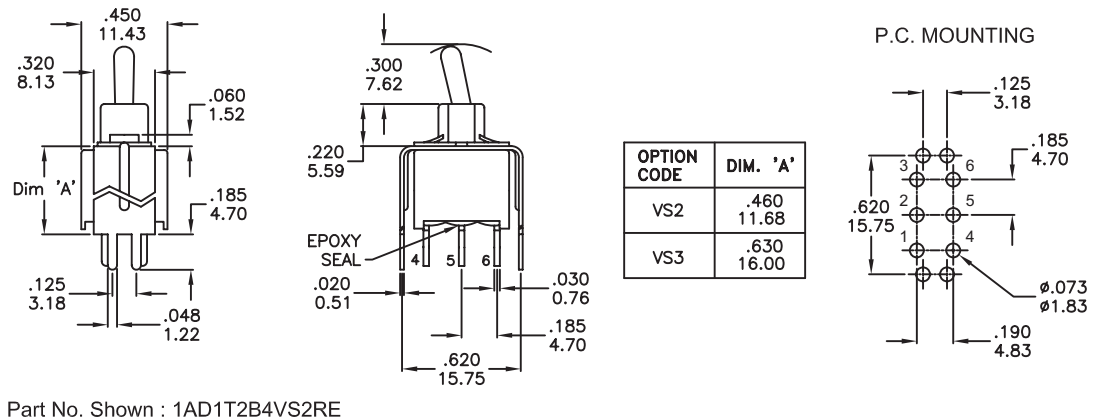
SPDT



VS2-VS3



DPDT



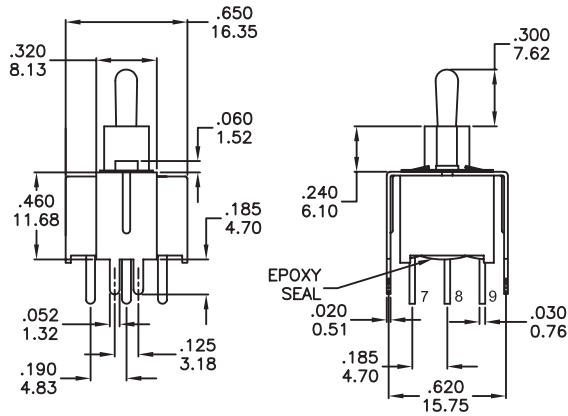
# 1A Series

## Sealed Miniature Toggle Switches

VS2-VS3

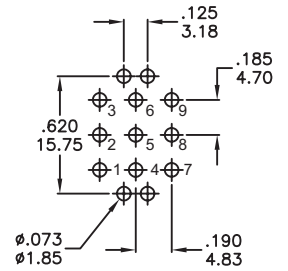


3PDT



OPTION CODE	DIM. 'A'
VS2	.460 11.68
VS3	.630 16.00

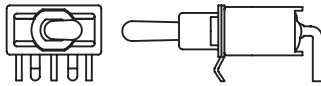
P.C. MOUNTING



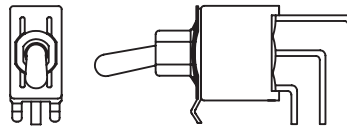
Part No. Shown : 1A31T2B4VS2RE

### SNAP-IN TERMINATION OPTIONS

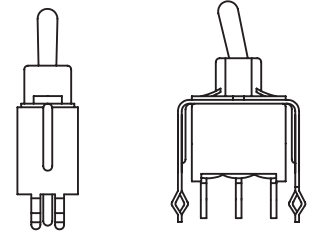
M6N



M7N



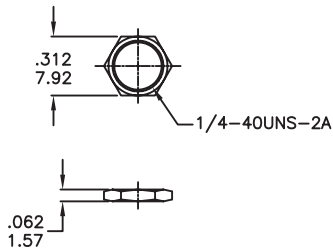
V2N



### HARDWARE

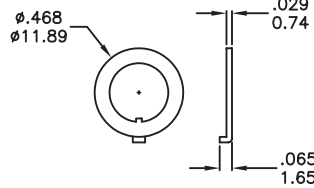
NUT

HDW2



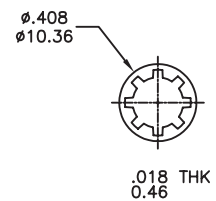
LOCKING RING

HDW15



LOCK WASHER

HDW11



### CONTACT MATERIAL OPTIONS

	CONTACT MATERIAL	TERMINAL PLATING	RATINGS
<b>Q</b>	<b>Silver</b>	<b>Q</b> = Gold flash over silver	5 Amps with resistant load @ 120VAC or 28VDC 2 Amps with resistant load @ 250VAC
<b>S</b>		<b>S</b> = Gold flash over silver, pure - tin	
<b>C</b>	<b>Gold over Silver</b>	<b>C</b> = Gold over silver	
<b>K</b>		<b>K</b> = Gold over silver, pure - tin	
<b>R</b>	<b>Gold</b>	<b>R</b> = Gold	0.4 Volt-Amps(VA)max. @ 20V max. (AC or DC)
<b>G</b>		<b>G</b> = Gold, pure - tin	



**IP 67**  
 ACCORDING TO  
 EN 60529:1991+A1:2001  
 IEC 60529:2001

### SOLDERING PROCESSES

**MANUAL SOLDERING** : Use soldering iron of 30 watts, controlled at 350°C approximately 5 seconds while applying solder.

**WAVE SOLDERING** : Recommended Soldering Temperature: 260±5°C  
 Duration of Solder Immersion: 5 ±1 seconds  
 (PCB is 1.6mm in thickness)

**SOLDERING** : Vapor phase

### Temperature Profile

Zone	Room temperature	Time ( Sec )
Pre-heat ( A )	150°C	Min 120s
Soak ( B )	180°C~200°C	Min 150s
Peak ( C )	200°C~235°C	Min 30s
Peak ( D )	235°C~260°C	Min 40s
Peak ( E )	260°C	Max 10s

