

### 3.2 Motor Run Capacitors : – continuous operation

#### Typical Applications :

Motor Run Capacitor – ideal for various motor applications in washing machine, air conditioner, electric water pump, power factor collection  
By connecting the capacitor in series with the starting winding motor, allow motors with two or three windings to function on a single-phase supply.  
AC Filter application.

#### Constructions :

Self-healing, low dielectric loss metallized polypropylene  
Cylindrical or Box Plastic Case : self-extinguishing (UL94-V0 grade) plastic  
Optional : Thermoplastic Plastic Case – so that the capacitor can be operated at a higher temperature range and harsh working environment  
Epoxy Resin : self-extinguishing (UL94-V0 grade)  
Size : Cylindrical : Diameter : 30-65mm / High : 65-118mm  
Box : Width: 32-60mm High: 20-38mm Thickness: 14-26mm

#### Electrical Connections :

Soldering terminal  
Single or double quick terminal  
Stiff wire  
Flexible wire  
Twin-core cable  
Wire or cable with receptacle or terminal  
Tin plated copper lead wire (Box type only)

#### Mounting systems :

Cylindrical Plastic Case : with Stud - M8 / without Stud  
Box Plastic Case : Screw mounting tab / without Screw mounting tab

#### Properties :

Low Dissipation Factor, high Insulation Resistance, Self-Healing, Non inductive, long operating time  
Providing different connections and mounting options so as to increase your design flexibility.

**Safety Class :** P0 P1 P2

#### Reference standards :

EN60252-1994, VDE0560-8, IEC.252-1993, UL810, CSA C 22.2, JIS : 4908-1995

#### Electrical Characteristics :

Capacitance range : 2.5 - 100uF  
Rated Voltage : 370Vac, 400Vac, 450Vac, 500Vac, 600Vac, 650Vac  
Capacitance Tolerance : +/-5%; +/-10%  
Dissipation factor (DF) < 0.002 at 23C 50/60Hz  
I.R. : Terminal – Terminal >5000 ohm uF  
Terminal – Case >1000M ohm uF  
Min. / Max. Operate Temperature : -25 ~ +85C / -40 ~ +105C  
Rated frequency : 50 ~ 60Hz  
Testing Voltage : Terminal – Terminal :  $2.15 \times U_n$  10sec (can be customized design)  
Terminal – Case : 3000AC 10sec  
Maximum Permissible Overvoltage : 110% of rated voltage  
Maximum Permissible Overcurrent : 130% of rated current  
Maximum Permissible Reactive output (Voltage-Ampere) : 135% of rated Volt-Ampere  
Pulse Voltage rise & fall time dV/dt : detail information available on request

#### Life Expectancy :

Class A	Class B	Class C	Class D
30,000hrs	10,000hrs	3,000hrs	1000hrs



The combination of Capacitance value and Voltage or should there be a dimensional constraint, please contact us for a design suited to your particular needs.

# Cylindrical Capacitor Configurations - Electrical Connection and Mounting :

**Quick Terminal** : 187 : w4.75 x h10 x t0.5mm

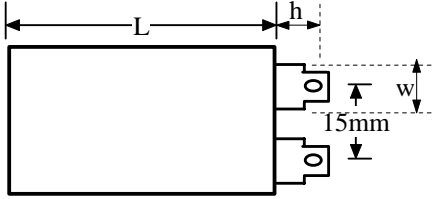
250D / 250S : w6.35 x h10 x t0.8mm

**Solder Terminal** : T280 : w2 + 2.8 x h12 x t0.5mm - pulse grade capacitor only

**Electrical Wire length** : 100mm, other length is available;

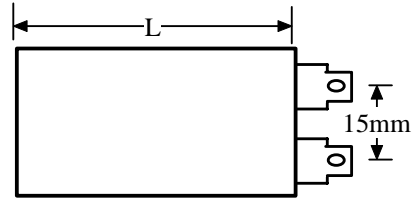
6.35mm female terminals ( optional )

## STR10s



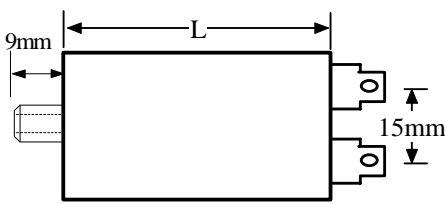
single quick terminal

## STR10d



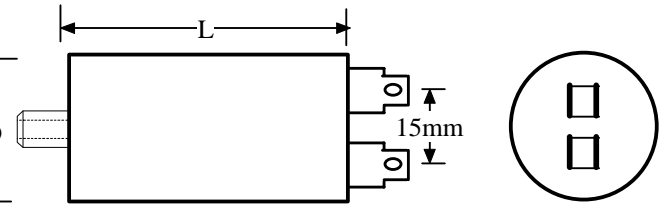
double quick terminal

## STR14s



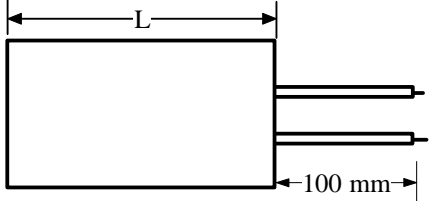
M8 stud with single quick terminal

## STR14d



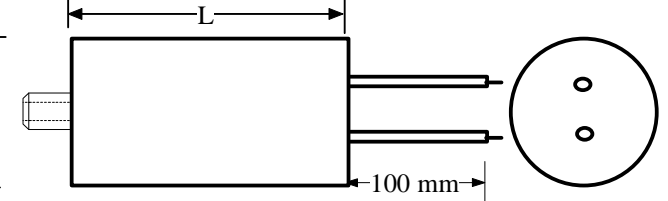
M8 stud with double quick terminal

## STR20



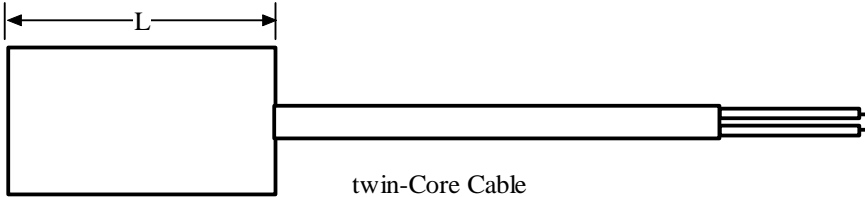
electrical wire

## STR24



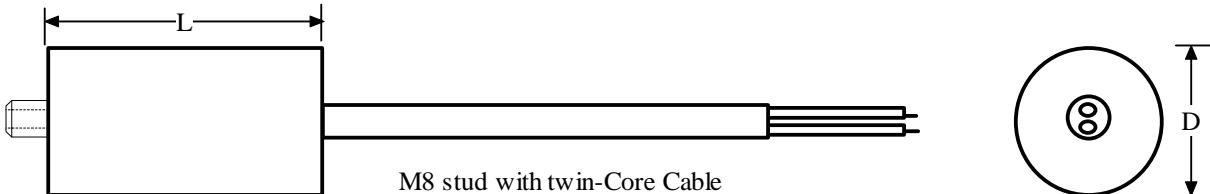
M8 stud with electrical wire

## STR20t



twin-Core Cable

## STR24t



M8 stud with twin-Core Cable



: Optional Faston Terminal 6.35mm for STR-20, STR-24, there are some other Terminals for your choice, please refer to page 34

Detail drawing for the Tab Terminal, please refer to page 33.

The above packaging configuration can be applied for all cylindrical type capacitors.

## Cylindrical Motor Capacitor dimension :

Capacitance uF	Dimension : Diameter x Length in mm	
	250Vac	400Vac
4uF	30 x 55	30 x 55
5uF	30 x 55	30 x 55
6uF	30 x 55	30 x 55
7uF	30 x 55	30 x 55
8uF	30 x 55	30 x 55
9uF	30 x 55	35 x 55
10uF	30 x 55	35 x 55
12uF	30 x 55	35 x 55
15uF	35 x 55	35 x 73
20uF	35 x 73	40 x 73
25uF	35 x 73	40 x 73
30uF	35 x 73	45 x 73
35uF	40 x 73	45 x 73
40uF	40 x 73	45 x 93
45uF	45 x 93	45 x 93
50uF	45 x 93	45 x 128
55uF	45 x 93	45 x 128
60uF	45 x 93	45 x 128
70uF	45 x 128	
80uF	45 x 128	

### 3.3 Motor Run Capacitors : box type :

#### Typical Applications :

This series of Motor Run Capacitors are specially designed for AC mini motors and electrical apparatus.

Applications like Electric Fan, Ceiling Fan, Bread Maker and Home Appliance.

#### Features :

high Insulated Resistance

loss dielectric loss : less electrical energy loss by the capacitor during operation

stable temperature characteristic : dissipation factor and capacitance remain stable and will not be changed by ambient temperature

#### Constructions :

Self-healing low, loss metallized polypropylene

Box Plastic Case and Epoxy Resin : self-extinguishing (UL-94V0 grade) plastic

Optional : Thermoplastic Plastic Case – so that the capacitor can be operated at a higher temperature range and harsh working environment

#### Electrical Connections :

Soldering terminal

Single or double quick terminal

Stiff electrical wire

Flexible electrical wire

Electrical wire with receptacle or terminal

Tin plated copper lead wire (Box type only)

#### Mounting systems :

Screw mounting tab / without Screw mounting tab

#### Properties :

Low Dissipation Factor, high Insulation Resistance, Self-Healing, Non inductive, long operating time

Providing different connections and mounting options so as to increase your design flexibility.

#### Reference standards :

EN60252-1994, VDE0560-8, IEC.252-1993, UL810, CSA C 22.2, JIS : 4908-1995

#### Safety Class : P0 P1 P2

#### Electrical Characteristics :

Capacitance range : 1 ~ 35uF

Rated Voltage : 250Vac, 370Vac, 400Vac, 450Vac

Capacitance Tolerance : +/-5%

Dissipation factor (DF) < 0.002 at 23C 50/60Hz

I.R. : Terminal – Terminal >100M ohm uF at 100VDC 1min.20C

Terminal – Case >200M ohm uF at 500VDC 1min.20C

Min. / Max. Operate Temperature : -25 ~ +70C / -40 ~ +85C

Rated frequency : 50 ~ 60Hz

Testing Voltage : Terminal – Terminal :  $2.15 \times U_n$  10sec (can be customized design)

Terminal – Case : 3000AC 10sec



# Box Type Capacitor Configurations - Electrical Connection and Mounting :

## Box type : STA and STB series

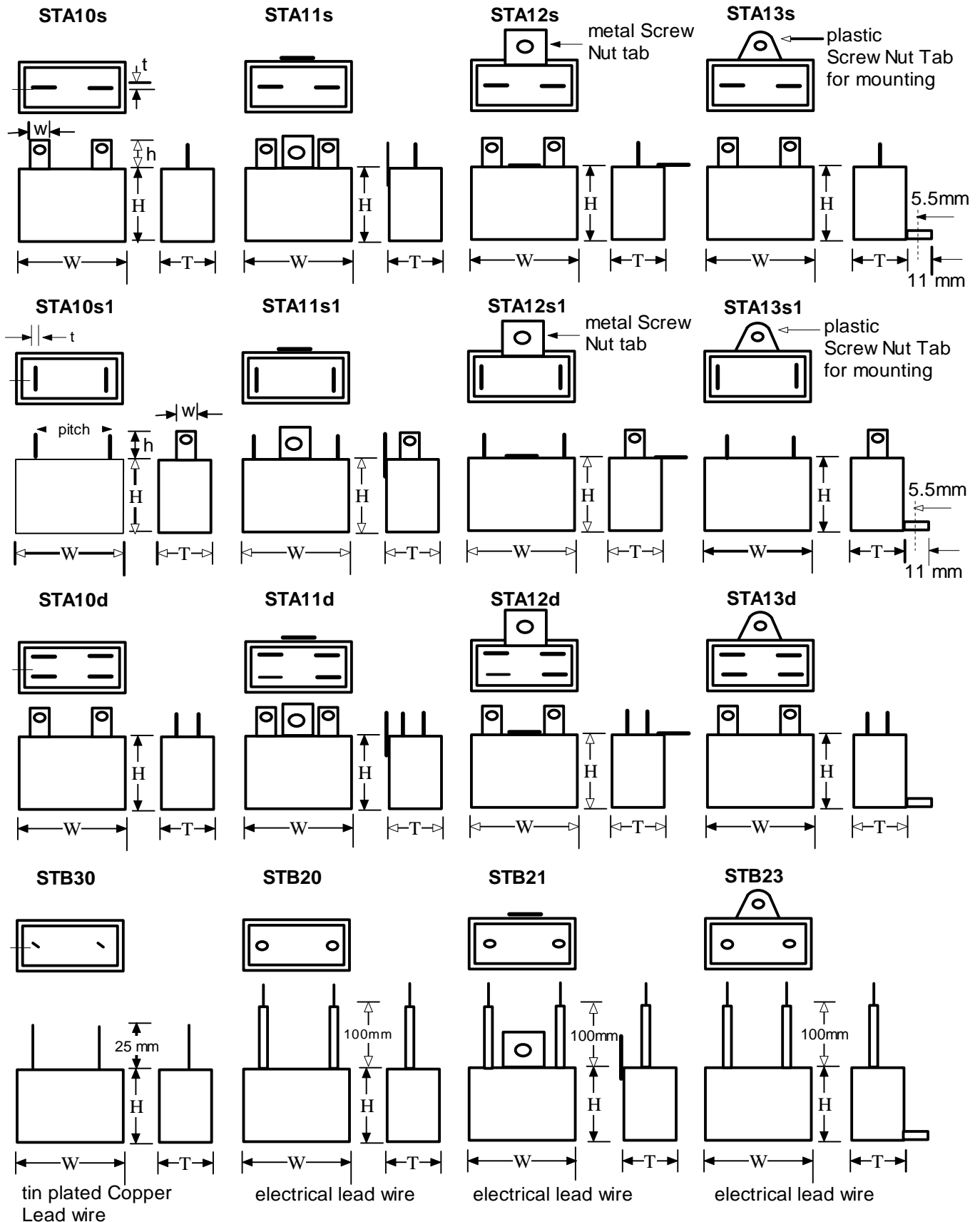
Quick Terminal : 187 type : w4.75 x h10 x t0.5mm

250 type : w6.35 x h10 x t0.8mm

Solder Terminal : T1 type : w4 x h8 x t0.5mm

Tin Plated Copper Lead

standard electrical lead wire length : 100mm, other length is available



The above packaging configuration can be applied for all plastic box type capacitor.

## Motor Run Capacitor Box type : STA and STB series size :

Dimension in mm

Capacitance: uF	Rated Voltage														
	250Vac			300Vac			350Vac			400Vac			450Vac		
	W	T	H	W	T	H	W	T	H	W	T	H	W	T	H
1.0	32	11	21	37	13.5	25	37	13.5	25	37	13.5	25	37	14.5	25
1.5	32	11	21	37	13.5	25	37	13.5	25	38	18	29	38	18	29
2.0	32	11	21	37	13.5	25	38	18	29	38	18	29	50	20	30
2.5	32	11	21	37	14.5	26	38	18	29	50	20	30	50	20	30
3.0	32	13	23.5	38	18	29	37	19	29	50	20	30	51	22	32
3.5	32	13	23.5	38	18	29	50	20	30	50	20	30	58	23	35
4.0	37	14	25	37	19	29	50	20	30	51	22	32	58	23	35
4.5	37	13.5	25	50	20	30	50	20	30	58	23	35	58	23	35
5.0	37	13.5	25	50	20	30	51	22	32	58	23	35			
5.5	37	13.5	25	50	20	30	51	22	32	58	23	35			
6.0	37	14.5	26	51	22	32	58	23	35	58	23	35			
6.5	38	18	29	51	22	32	58	23	35	58	23	35			
7.0	38	18	29	51	22	32	58	23	35						
8.0	38	18	29	58	23	35	58	23	35						
9.0	37	19	29	58	23	35									
10.0	50	20	30	58	23	35									
11.0	50	20	30	58	23	35									
12.0	50	20	30												
13.0	50	20	30												
14.0	50	20	30												
15.0	50	22	32												
16.0	50	22	32												

Other combination of Capacitance value and Voltage or should there be a dimensional constraint, please contact us for a design suited to your particular needs.

## Motor Run Capacitor – Part Number System :

ST \_\_\_\_\_

1 2 3 4 a 5 5 6 6 6 7 8

- 1 : series designation  
ST
- 2 : basic design
  - A: capacitors with Tab Terminal - Box
  - B: capacitors with Leads - Box
  - R: capacitors with cylindrical shaped enclosure
- 3 : electrical connection
  - 1. tab terminals
  - 2. standard copper leads
  - 3. Tin-plated copper wire
- 4 : mounting means
  - 0. with no mounting design
  - 1. straight mounting tab – Box type
  - 2. angled mounting tab – Box type
  - 3. integral flat mounting bolt of enclosure – Box type
  - 4. integral threaded mounting bolt of enclosure – cylindrical type
- a. : Terminals and Electrical Wires type – electrical connection
  - single terminal - s
  - double terminal - d
  - Twin-core cable (cylindrical type) - t
  - Stiff wire (cylindrical type) - w
  - Flexible wire (cylindrical type) - f
  - Wire or cable with receptacle or terminal : t, w, f + terminal code
- 5 : capacitance
  - 105 : 1uF
  - 106 : 10uF
  - 107 : 100uF
  - 108 : 1000uF
- 6 : voltage : AC voltage  
220V 250V 370V 400V 450V 500V 600V 630V 800V
- 7 : tolerance
  - J : +/-5%                      K : +/-10%
- 8 : Safety Class :
  - nil: - P0
  - P1 : - P1
  - P2 : - P2

