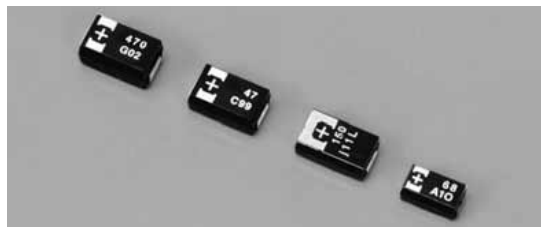


## TPB Series

### Standard Products

TPB series are the standard products corresponding to the diversification of the needs.

The D3 size products of TPB series are to be discontinued manufacturing. Please use the D3L size of TPB series when you design new products.



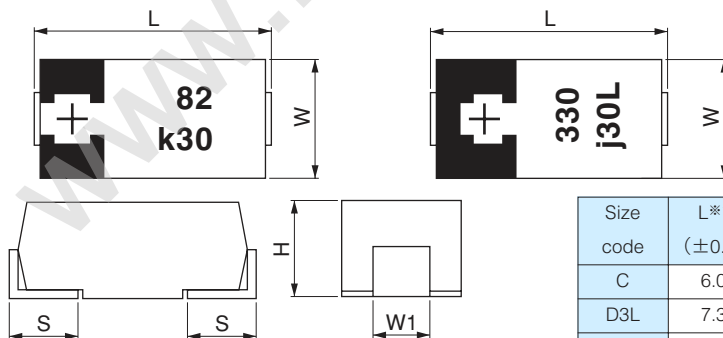
### Specifications

| Items  | Condition  | Characteristics                              |  |            |
|--|--|--|--|------------|
| Operating Temperature range                    | —  | -55 to +105 (°C)                             |  |            |
| Rated capacitance range                        | 120Hz/20°C   | 68 to 1000 (μF)                              |  |            |
| Capacitance tolerance                          | 120Hz/20°C   | M:±20%                                       |  |            |
| Rated voltage                                  | —  | 2.5 to 10.0 (V,DC)                           |  |            |
| Dissipation Factor (D.F.)                      | 120Hz/20°C   | ≤8.0 or 10.0 or 15.0 (%)                     |  |            |
| Leakage current                                | Rated voltage applied, after 5 minutes                             | ≤0.1CV (μA)                                  |  |            |
| Equivalent series resistance E.S.R (mΩmax.)    | 100kHz/20°C  | Please see the attached characteristics list |  |            |
| Temperature characteristics of Impedance ratio | 100kHz/+20°C   | -55°C  | Z/Z <sub>20°C</sub>  | 1.0 to 2.0 |
|  |  | +105°C                                       | Z/Z <sub>20°C</sub>  | 0.6 to 1.0 |
| Endurance                                      | 105°C, 2000h, rated voltage applied                                | ΔC/C   | Within±20% of the initial value                                    |            |
|  |  | D.F.   | ≤1.5 times the initial limit                                       |            |
|  |  | L.C.   | ≤The initial limit   |            |
| Damp heat (Steady state)                       | 60°C, 90 to 95%RH, 500h, No voltage applied                        | ΔC/C   | Within+50%, -20% of the initial value (2R5TPB1000M)                |            |
|  |  |  | Within+40%, -20% of the initial value (Except for the above model) |            |
|  |  | D.F.   | ≤1.5 times the initial limit                                       |            |
| Surge  | 105°C, 1000 cycles, 1kΩdischarge resistance, surge voltage applied | ΔC/C   | Within±5% of the initial value                                     |            |
|  |  | D.F.   | ≤The initial limit   |            |
|  |  | L.C.   | ≤3 times the initial limit   |            |

### Dimensions (unit: mm)

(C,D3,D4 size)

(D3L size)



| Size code | L*1 (±0.2) | W (±0.2) | H (±0.2) | S (±0.2) | W1 (±0.1) |
|-----------|------------|----------|----------|----------|-----------|
| C         | 6.0        | 3.2      | 2.8      | 1.3      | 1.8       |
| D3L       | 7.3        | 4.3      | 2.8      | 1.3      | 2.4       |
| D3        | 7.3        | 4.3      | 3.1      | 1.3      | 2.4       |
| D4        | 7.3        | 4.3      | 3.8      | 1.3      | 2.4       |

### Size list

| μF  | RV (SV)   |           |           |            |             | μF   | RV (SV)   |           |           |            |             |
|-----|-----------|-----------|-----------|------------|-------------|------|-----------|-----------|-----------|------------|-------------|
|     | 2.5 (3.2) | 4.0 (5.0) | 6.3 (8.0) | 8.0 (10.0) | 10.0 (13.0) |      | 2.5 (3.2) | 4.0 (5.0) | 6.3 (8.0) | 8.0 (10.0) | 10.0 (13.0) |
| 47  |           |           |           |            | C           | 220  | C         | C,D3,D3L  | D3L       |            | D3L,D4      |
| 68  |           |           |           |            | C           | 330  | D3,D3L    | D3L       | D3L,D4    |            | D4          |
| 82  |           |           |           | C          |             | 470  | D3L       | D4,D3L    | D4        |            |             |
| 100 |           |           | C         |            |             | 680  | D4,D3L    | D4        |           |            |             |
| 150 |           | C         | C,D3,D3L  |            | D3L         | 1000 | D4        |           |           |            |             |

\*1 ±0.3:D3L,D4

## TPB Series

### Characteristics list

| Size code | SANYO Part number | Rated Voltage (V) | Rated Capacitance ( $\mu$ F) | D.F. (%max.) | L.C. ( $\mu$ A) max./5min. | E.S.R. (m $\Omega$ max.) 100kHz/20°C | Maximum allowable ripple current (mA rms) 100kHz <sup>※1</sup> |
|-----------|-------------------|-------------------|------------------------------|--------------|----------------------------|--------------------------------------|--|
| C         | 10TPB47MC         | 10.0              | 47                           | 8.0          | 47.0                       | 55                                   | 1500   |
|           | 10TPB68MC         | 10.0              | 68                           | 8.0          | 68.0                       | 55                                   | 1500   |
|           | 8TPB82MC          | 8.0               | 82                           | 8.0          | 65.6                       | 45                                   | 1700   |
|           | 6TPB100MC         | 6.3               | 100                          | 8.0          | 63.0                       | 45                                   | 1700   |
|           | 6TPB150MC         | 6.3               | 150                          | 8.0          | 94.5                       | 45                                   | 1700   |
|           | 4TPB150MC         | 4.0               | 150                          | 8.0          | 60.0                       | 45                                   | 1700   |
|           | 4TPB220MC         | 4.0               | 220                          | 8.0          | 88.0                       | 45                                   | 1700   |
|           | 2R5TPB220MC       | 2.5               | 220                          | 8.0          | 55.0                       | 45                                   | 1700   |
| D3L       | 10TPB100ML        | 10.0              | 100                          | 8.0          | 100.0                      | 55                                   | 1900   |
|           | 10TPB150ML        | 10.0              | 150                          | 10.0         | 150.0                      | 40                                   | 2000   |
|           | 10TPB220ML        | 10.0              | 220                          | 10.0         | 220.0                      | 40                                   | 2000   |
|           | 6TPB150ML         | 6.3               | 150                          | 8.0          | 94.5                       | 55                                   | 1900   |
|           | 6TPB220ML         | 6.3               | 220                          | 10.0         | 138.6                      | 40                                   | 2000   |
|           | 6TPB330ML         | 6.3               | 330                          | 10.0         | 207.9                      | 40                                   | 2000   |
|           | 4TPB220ML         | 4.0               | 220                          | 8.0          | 88.0                       | 55                                   | 1900   |
|           | 4TPB330ML         | 4.0               | 330                          | 10.0         | 132.0                      | 40                                   | 2000   |
|           | 4TPB470ML         | 4.0               | 470                          | 10.0         | 188.0                      | 40                                   | 2000   |
|           | 2R5TPB330ML       | 2.5               | 330                          | 8.0          | 82.5                       | 55                                   | 1900   |
|           | 2R5TPB470ML       | 2.5               | 470                          | 10.0         | 117.5                      | 40                                   | 2000   |
|           | 2R5TPB680ML       | 2.5               | 680                          | 10.0         | 170.0                      | 40                                   | 2000   |
| D3        | 10TPB100M         | 10.0              | 100                          | 8.0          | 100.0                      | 55                                   | 1900   |
|           | 6TPB150M          | 6.3               | 150                          | 8.0          | 94.5                       | 55                                   | 1900   |
|           | 4TPB220M          | 4.0               | 220                          | 8.0          | 88.0                       | 65                                   | 1500   |
|           | 2R5TPB330M        | 2.5               | 330                          | 8.0          | 82.5                       | 65                                   | 1500   |
| D4        | 10TPB220M         | 10.0              | 220                          | 10.0         | 220.0                      | 40                                   | 3000   |
|           | 10TPB330M         | 10.0              | 330                          | 10.0         | 330.0                      | 35                                   | 3000   |
|           | 6TPB330M          | 6.3               | 330                          | 10.0         | 207.9                      | 40                                   | 3000   |
|           | 6TPB470M          | 6.3               | 470                          | 15.0         | 296.1                      | 35                                   | 3000   |
|           | 4TPB470M          | 4.0               | 470                          | 10.0         | 188.0                      | 40                                   | 3000   |
|           | 4TPB680M          | 4.0               | 680                          | 15.0         | 272.0                      | 35                                   | 3000   |
|           | 2R5TPB680M        | 2.5               | 680                          | 10.0         | 170.0                      | 40                                   | 3000   |
|           | 2R5TPB1000M       | 2.5               | 1000                         | 15.0         | 250.0                      | 30                                   | 3000   |

※1: 100k to 500kHz, 45°C