

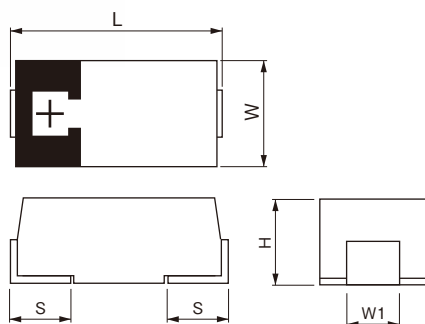
TPE series has low ESR and can aid in creating thinner and smaller products.  
This page focuses on the smaller packages within the series.



## Specifications

| Items                                                          | Condition                                                                                                 |        | Specifications                               |                                                                                                                        |     |     |     |    |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|----|
| Rated voltage (V)                                              | —                                                                                                         |        | 2.0                                          | 2.5                                                                                                                    | 4.0 | 6.3 | 8.0 | 10 |
| Surge voltage (V)                                              | —                                                                                                         |        | 2.3                                          | 2.9                                                                                                                    | 4.6 | 7.2 | 9.2 | 12 |
| Category temperature range (°C)                                | —                                                                                                         |        | −55 to +105                                  |                                                                                                                        |     |     |     |    |
| Capacitance tolerance (%)                                      | 120Hz/20°C                                                                                                |        | M : ±20                                      |                                                                                                                        |     |     |     |    |
| Rated capacitance range (μF)                                   | 120Hz/20°C                                                                                                |        | 47 to 470                                    |                                                                                                                        |     |     |     |    |
| Dissipation Factor (DF)                                        | 120Hz/20°C                                                                                                |        | Please see the attached characteristics list |                                                                                                                        |     |     |     |    |
| Leakage current                                                | Rated voltage applied, after 5 minutes                                                                    |        | Please see the attached characteristics list |                                                                                                                        |     |     |     |    |
| Equivalent series resistance (ESR)                             | 100kHz/20°C                                                                                               |        | Please see the attached characteristics list |                                                                                                                        |     |     |     |    |
| Characteristics of impedance ratio at high temp. and low temp. | 100kHz/+20°C                                                                                              | −55°C  | Z/Z <sub>20°C</sub>                          | 0.6 to 2.0                                                                                                             |     |     |     |    |
|                                                                |                                                                                                           | +105°C | Z/Z <sub>20°C</sub>                          | 0.6 to 2.0                                                                                                             |     |     |     |    |
| Endurance                                                      | 105°C, 1,000h rated voltage applied<br>※Rated temp. 85°C products:<br>85°C, 1,000h, rated voltage applied | ΔC/C   |                                              | Within±20% of the initial value                                                                                        |     |     |     |    |
|                                                                |                                                                                                           | DF     |                                              | ≤ 1.5 times of the initial limit                                                                                       |     |     |     |    |
|                                                                |                                                                                                           | LC     |                                              | Within the initial limit                                                                                               |     |     |     |    |
| Damp heat (Steady State)                                       | 60°C, 90 to 95%RH, 500h,<br>No-applied voltage                                                            | ΔC/C   |                                              | Within+50%, −20% (2R5TPE220MDGB(MAZB,MAPB,MAFB),<br>2R5TPE330MAZB,2TPE330MFB(MAFB,MADGB)<br>ETPE330MA9GB,2TPE470MAJGB) |     |     |     |    |
|                                                                |                                                                                                           |        |                                              | Within+40%, −20% of the initial value (Except for the above model)                                                     |     |     |     |    |
|                                                                |                                                                                                           | DF     |                                              | ≤ 1.5 times of the initial limit                                                                                       |     |     |     |    |
|                                                                |                                                                                                           | LC     |                                              | ≤ 3 times of the initial limit                                                                                         |     |     |     |    |
| Surge                                                          | 105°C, 1,000 cycles, 1kΩ discharge<br>resistance,surge voltage applied<br>※Rated temp 85°C products:85°C  | ΔC/C   |                                              | Within±5% of the initial value                                                                                         |     |     |     |    |
|                                                                |                                                                                                           | DF     |                                              | Within the initial limit                                                                                               |     |     |     |    |
|                                                                |                                                                                                           | LC     |                                              | ≤ 3 times of the initial limit                                                                                         |     |     |     |    |

## Dimensions



## Size list

RV : Rated voltage

| RV<br>μF | 2.0 | 2.5 | 4.0 | 6.3 | 8.0 | 10 |
|----------|-----|-----|-----|-----|-----|----|
| 47       |     |     |     |     |     | B2 |
| 100      |     |     | B2  | B2  | B2  |    |
| 120      |     |     |     | B2  |     |    |
| 150      |     |     | B2  | B2  |     |    |
| 220      |     | B2  | B2  | B2  |     |    |
| 330      | B2  | B2  |     |     |     |    |
| 470      | B2  |     |     |     |     |    |

(unit: mm)

| Size code | L ±0.2 | W ±0.2 | H ±0.1 | S ±0.2 | W1 ±0.1 |
|-----------|--------|--------|--------|--------|---------|
| B2        | 3.5    | 2.8    | 1.9    | 0.8    | 2.2     |

 **TPE series characteristics list**

| Size code | Part number    | Rated voltage (V) | Rated temperature (°C) | Rated capacitance (μF) | Category voltage (V) | Category temperature (°C) | DF (% max) | LC (μA) max/5min. | ESR (mΩmax) 100kHz/20°C | Maximum allowable ripple current (mA rms) 100kHz※1 | MSL                  |                      |
|-----------|----------------|-------------------|------------------------|------------------------|----------------------|---------------------------|------------|-------------------|-------------------------|----------------------------------------------------|----------------------|----------------------|
|           |                |                   |                        |                        |                      |                           |            |                   |                         |                                                    | Reflow temp. ≤ 260°C | Reflow temp. ≤ 250°C |
| B2        | 10TPE47MAZB    | 10                | 85                     | 47                     | 8.0                  | 105                       | 8.0        | 47.0              | 35                      | 1400                                               | 3                    | 3                    |
|           | 8TPE100MAZB    | 8.0               | 85                     | 100                    | 6.3                  | 105                       | 8.0        | 80.0              | 35                      | 1400                                               | 3                    | 3                    |
|           | 6TPE220MAZB    | 6.3               | 85                     | 220                    | 5.0                  | 105                       | 10.0       | 138.6             | 35                      | 1400                                               | 3                    | 3                    |
|           | 6TPE220MAPB※2  | 6.3               | 85                     | 220                    | 5.0                  | 105                       | 10.0       | 138.6             | 25                      | 1400                                               | 3                    | 3                    |
|           | 6TPE150MAZB    | 6.3               | 85                     | 150                    | 5.0                  | 105                       | 8.0        | 94.5              | 35                      | 1400                                               | 3                    | 3                    |
|           | 6TPE150MAPB    | 6.3               | 85                     | 150                    | 5.0                  | 105                       | 8.0        | 94.5              | 25                      | 1600                                               | 3                    | 3                    |
|           | 6TPE120MAZB    | 6.3               | 85                     | 120                    | 5.0                  | 105                       | 8.0        | 75.6              | 35                      | 1400                                               | 3                    | 3                    |
|           | 6TPE100MPB     | 6.3               | 105                    | 100                    | 6.3                  | 105                       | 8.0        | 63.0              | 25                      | 1600                                               | 3                    | 3                    |
|           | 6TPE100MAZB    | 6.3               | 85                     | 100                    | 5.0                  | 105                       | 8.0        | 63.0              | 35                      | 1400                                               | 3                    | 3                    |
|           | 4TPE220MAZB    | 4.0               | 85                     | 220                    | 3.2                  | 105                       | 8.0        | 88.0              | 35                      | 1400                                               | 3                    | 3                    |
|           | 4TPE150MAZB    | 4.0               | 85                     | 150                    | 3.2                  | 105                       | 8.0        | 60.0              | 35                      | 1400                                               | 3                    | 3                    |
|           | 4TPE150MAUB    | 4.0               | 85                     | 150                    | 3.2                  | 105                       | 8.0        | 60.0              | 30                      | 1500                                               | 3                    | 3                    |
|           | 4TPE100MZB     | 4.0               | 105                    | 100                    | 4.0                  | 105                       | 8.0        | 40.0              | 35                      | 1400                                               | 3                    | 3                    |
|           | 2R5TPE330MAZB  | 2.5               | 85                     | 330                    | 2.0                  | 105                       | 8.0        | 82.5              | 35                      | 1400                                               | 3                    | 3                    |
|           | ETPE330MA9GB※2 | 2.5               | 85                     | 330                    | 2.0                  | 105                       | 8.0        | 165.0             | 9/300kHz                | 3200                                               | 3                    | 3                    |
|           | 2R5TPE220MZB   | 2.5               | 105                    | 220                    | 2.5                  | 105                       | 8.0        | 55.0              | 35                      | 1400                                               | 3                    | 3                    |
|           | 2R5TPE220MLB   | 2.5               | 105                    | 220                    | 2.5                  | 105                       | 8.0        | 55.0              | 21                      | 1700                                               | 3                    | 3                    |
|           | 2R5TPE220MFGB  | 2.5               | 105                    | 220                    | 2.5                  | 105                       | 8.0        | 110.0             | 15/300kHz               | 1800                                               | 3                    | 3                    |
|           | 2R5TPE220MDGB  | 2.5               | 105                    | 220                    | 2.5                  | 105                       | 8.0        | 110.0             | 13/300kHz               | 2000                                               | 3                    | 3                    |
|           | 2R5TPE220MAZB  | 2.5               | 85                     | 220                    | 2.0                  | 105                       | 8.0        | 55.0              | 35                      | 1400                                               | 3                    | 3                    |
|           | 2R5TPE220MAPB  | 2.5               | 85                     | 220                    | 2.0                  | 105                       | 8.0        | 55.0              | 25                      | 1600                                               | 3                    | 3                    |
|           | 2R5TPE220MAFB  | 2.5               | 85                     | 220                    | 2.0                  | 105                       | 8.0        | 110.0             | 15                      | 2000                                               | 3                    | 3                    |
|           | 2TPE470MAJGB   | 2.0               | 85                     | 470                    | 1.8                  | 105                       | 10.0       | 188.0             | 11/300kHz               | 2300                                               | 3                    | 3                    |
|           | 2TPE330MFB     | 2.0               | 105                    | 330                    | 2.0                  | 105                       | 8.0        | 132.0             | 15                      | 2000                                               | 3                    | 3                    |
|           | 2TPE330MAFB    | 2.0               | 85                     | 330                    | 1.8                  | 105                       | 8.0        | 132.0             | 15                      | 2000                                               | 3                    | 3                    |
|           | 2TPE330MADGB   | 2.0               | 85                     | 330                    | 1.8                  | 105                       | 8.0        | 132.0             | 13/300kHz               | 2000                                               | 3                    | 3                    |

※1 100k to 500kHz, 45°C ※2 Under development

|                 |                                   |
|-----------------|-----------------------------------|
| Selection guide | Series system diagram             |
|                 | Image of case size                |
|                 | Products list                     |
|                 | Packing specifications (SMD type) |

|                |                                 |
|----------------|---------------------------------|
| Technical data | Recommended soldering condition |
|                | Fundamental structure           |
|                | Characteristics                 |
|                | Reliability                     |

|                    |      |
|--------------------|------|
| Surface mount type | SVPF |
|                    | SVPE |
|                    | SVPS |
|                    | SVPD |
|                    | SVPC |
|                    | SVPB |
|                    | SVPA |
|                    | SVQP |
|                    | SVP  |
|                    |      |

|                  |      |
|------------------|------|
| Radial lead type | SEPF |
|                  | SEPC |
|                  | SEQP |
|                  | SEP  |

Catalog Deletion and EOL series

**POSCAP**POSCAP  
Line-upGuidelines and  
precautions for use

|                 |                             |
|-----------------|-----------------------------|
| Selection guide | Series system diagram       |
|                 | Image of case size          |
|                 | Products list               |
|                 | Explanation of part numbers |

|                |                                    |
|----------------|------------------------------------|
| Technical data | Marking                            |
|                | Recommended land pattern dimension |
|                | Recommended soldering condition    |
|                | Fundamental structure              |
|                | Characteristics                    |

|                    |            |
|--------------------|------------|
| Surface mount type | TPU        |
|                    | TPH        |
|                    | TPG        |
|                    | TPSF       |
|                    | <b>TPE</b> |
|                    | TPB/TPC    |
|                    | TPL·TPLF   |
|                    | TPF        |
|                    | TA         |
|                    | TV         |

Catalog Deletion and EOL models

OS-CON

OS-CON Line-up

Guidelines and precautions for use

Series system diagram

Image of case size

Products list

Packing specifications (SMD type)

Packing specifications (Radial lead type)

Recommended soldering condition

Fundamental structure

Characteristics

Reliability

SVPF

SVPE

SVPS

SVPD

SVPC

SVPB

SVPA

SVQP

SVP

SEPF

SEPC

SEQP

SEP

Catalog Deletion and EOL series

POSCAP

POSCAP Line-up

Guidelines and precautions for use

Series system diagram

Image of case size

Products list

Explanation of part numbers

Packing specifications

Marking

Recommended land pattern dimension

Recommended soldering condition

Fundamental structure

Characteristics

Reliability

TPU

TPH

TPG

TPSF

TPE

TPB/TPC

TPL·TPLF

TPF

TA

TV

TH

TQC

Catalog Deletion and EOL models

Surface mount type

TPE Series

Update

RoHS compliance

Low ESR

TPE series has low ESR and can aid in creating thinner and smaller products.

Specifications

| Items                                                          | Condition                                                                                                                                        | Specifications                                                                                                                                               |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated voltage (V)                                              | —                                                                                                                                                | 2.5    4.0    6.3    10                                                                                                                                      |
| Surge voltage (V)                                              | —                                                                                                                                                | 2.9    4.6    7.2    12                                                                                                                                      |
| Category temperature range (°C)                                | —                                                                                                                                                | −55 to +105                                                                                                                                                  |
| Capacitance tolerance (%)                                      | 120Hz/20°C                                                                                                                                       | M : ±20                                                                                                                                                      |
| Rated capacitance range (μF)                                   | 120Hz/20°C                                                                                                                                       | 68 to 1,500                                                                                                                                                  |
| Dissipation Factor (DF)                                        | 120Hz/20°C                                                                                                                                       | Please see the attached characteristics list                                                                                                                 |
| Leakage current                                                | Rated voltage applied, after 5 minutes                                                                                                           | Please see the attached characteristics list                                                                                                                 |
| Equivalent series resistance (ESR)                             | 100kHz/20°C                                                                                                                                      | Please see the attached characteristics list                                                                                                                 |
| Characteristics of impedance ratio at high temp. and low temp. | 100kHz/+20°C                                                                                                                                     | −55°C    Z/Z <sub>20°C</sub> 0.6 to 2.0                                                                                                                      |
|                                                                |                                                                                                                                                  | +105°C    Z/Z <sub>20°C</sub> 0.6 to 2.0                                                                                                                     |
| Endurance                                                      | 105°C, 2,000h, rated voltage applied<br>※Rated temp. 85°C products: 85°C, 1,000h, rated voltage applied<br>6TPE330MAP, 6TPE470MAZU: 85°C, 2,000h | ΔC/C    Within±20% of the initial value                                                                                                                      |
|                                                                |                                                                                                                                                  | DF    ≤ 1.5 times of the initial limit                                                                                                                       |
|                                                                |                                                                                                                                                  | LC    Within the initial limit                                                                                                                               |
| Damp heat (Steady State)                                       | 60°C, 90 to 95%RH, 500h, No-applied voltage                                                                                                      | ΔC/C    Within+50%, −20% of the initial value (2R5TPE470M (I.F.C.9.7), 2R5TPE330M (I.F.C.9.7), 2R5TPE220M (I.F.C.9.7), 2R5TPE1000M (I.F), 2R5TPE1500M (F.C)) |
|                                                                |                                                                                                                                                  | DF    ≤ 1.5 times of the initial limit                                                                                                                       |
|                                                                |                                                                                                                                                  | LC    ≤ 3 times of the initial limit                                                                                                                         |
|                                                                |                                                                                                                                                  | ΔC/C    Within±5% of the initial value                                                                                                                       |
| Surge                                                          | 105°C, 1,000 cycles, 1kΩ discharge resistance, surge voltage applied<br>※Rated temp. 85°C products: 85°C                                         | DF    Within the initial limit                                                                                                                               |
|                                                                |                                                                                                                                                  | LC    ≤ 3 times of the initial limit                                                                                                                         |

Dimensions

Size list

RV : Rated voltage

| RV    | 2.5 | 4.0 | 6.3          | 10.0 |
|-------|-----|-----|--------------|------|
| 68    |     |     |              | D2E  |
| 100   |     |     | D2E          |      |
| 150   |     | D2E | D2E          |      |
| 220   | D2E | D2E | D2E          | D3L  |
| 330   | D2E | D2E | D2E, D3L, D4 | D4   |
| 470   | D2E | D3L | D4, D15E     |      |
| 680   | D3L |     | D4           |      |
| 1,000 | D4  |     |              |      |
| 1,500 | D4  |     |              |      |

(unit: mm)

| Size code | L ±0.3 | W ±0.2 | H ±0.2※1 | S ±0.2 | W1 ±0.1 |
|-----------|--------|--------|----------|--------|---------|
| D15E      | 7.3    | 4.3    | 1.4      | 1.1    | 2.4     |
| D2E       | 7.3    | 4.3    | 1.8      | 1.3    | 2.4     |
| D3L       | 7.3    | 4.3    | 2.8      | 1.3    | 2.4     |
| D4        | 7.3    | 4.3    | 3.8      | 1.3    | 2.4     |

※1 ±0.1: D2E, D15E



| Size code | Part number  | Rated voltage (V) | Rated temperature (°C) | Rated capacitance (μF) | Category voltage (V) | Category temperature (°C) | DF (% max) | LC (μA) max/5min. | ESR (mΩmax) 100kHz/20°C | Maximum allowable ripple current (mA <sub>rms</sub> ) 100kHz※1 | MSL                  |                      |
|-----------|--------------|-------------------|------------------------|------------------------|----------------------|---------------------------|------------|-------------------|-------------------------|----------------------------------------------------------------|----------------------|----------------------|
|           |              |                   |                        |                        |                      |                           |            |                   |                         |                                                                | Reflow temp. ≤ 260°C | Reflow temp. ≤ 250°C |
| D15E      | 6TPE470MAZU  | 6.3               | 85                     | 470                    | 5.0                  | 105                       | 10         | 296.1             | 35                      | 1700                                                           | 3                    | 2a                   |
|           | 10TPE68M     | 10                | 105                    | 68                     | 10                   | 105                       | 10         | 68.0              | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 6TPE330MAP   | 6.3               | 85                     | 330                    | 5.0                  | 105                       | 10         | 207.9             | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 6TPE220MAP   | 6.3               | 85                     | 220                    | 5.0                  | 105                       | 10         | 138.6             | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 6TPE220M     | 6.3               | 105                    | 220                    | 6.3                  | 105                       | 10         | 138.6             | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 6TPE220MI    | 6.3               | 105                    | 220                    | 6.3                  | 105                       | 10         | 138.6             | 18                      | 2800                                                           | 3                    | 2a                   |
|           | 6TPE150M     | 6.3               | 105                    | 150                    | 6.3                  | 105                       | 10         | 94.5              | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 6TPE150MI    | 6.3               | 105                    | 150                    | 6.3                  | 105                       | 10         | 94.5              | 18                      | 2800                                                           | 3                    | 2a                   |
|           | 6TPE150MF    | 6.3               | 105                    | 150                    | 6.3                  | 105                       | 10         | 94.5              | 15                      | 3100                                                           | 3                    | 2a                   |
|           | 6TPE100M     | 6.3               | 105                    | 100                    | 6.3                  | 105                       | 10         | 63.0              | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 6TPE100MI    | 6.3               | 105                    | 100                    | 6.3                  | 105                       | 10         | 63.0              | 18                      | 2800                                                           | 3                    | 2a                   |
|           | 4TPE330M     | 4.0               | 105                    | 330                    | 4.0                  | 105                       | 10         | 132.0             | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 4TPE330MI    | 4.0               | 105                    | 330                    | 4.0                  | 105                       | 10         | 132.0             | 18                      | 2800                                                           | 3                    | 2a                   |
|           | 4TPE220M     | 4.0               | 105                    | 220                    | 4.0                  | 105                       | 10         | 88.0              | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 4TPE220MI    | 4.0               | 105                    | 220                    | 4.0                  | 105                       | 10         | 88.0              | 18                      | 2800                                                           | 3                    | 2a                   |
| D2E       | 4TPE220MF    | 4.0               | 105                    | 220                    | 4.0                  | 105                       | 10         | 88.0              | 15                      | 3100                                                           | 3                    | 2a                   |
|           | 4TPE150MI    | 4.0               | 105                    | 150                    | 4.0                  | 105                       | 10         | 60.0              | 18                      | 2800                                                           | 3                    | 2a                   |
|           | 2R5TPE470MI  | 2.5               | 105                    | 470                    | 2.5                  | 105                       | 10         | 117.5             | 18                      | 2800                                                           | 3                    | 2a                   |
|           | 2R5TPE470MF  | 2.5               | 105                    | 470                    | 2.5                  | 105                       | 10         | 117.5             | 15                      | 3100                                                           | 3                    | 2a                   |
|           | 2R5TPE470MC  | 2.5               | 105                    | 470                    | 2.5                  | 105                       | 10         | 117.5             | 12                      | 3500                                                           | 3                    | 2a                   |
|           | 2R5TPE470M9  | 2.5               | 105                    | 470                    | 2.5                  | 105                       | 10         | 117.5             | 9                       | 3900                                                           | 3                    | 2a                   |
|           | 2R5TPE470M7  | 2.5               | 105                    | 470                    | 2.5                  | 105                       | 10         | 117.5             | 7                       | 4400                                                           | 3                    | 2a                   |
|           | 2R5TPE330M   | 2.5               | 105                    | 330                    | 2.5                  | 105                       | 10         | 82.5              | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 2R5TPE330MI  | 2.5               | 105                    | 330                    | 2.5                  | 105                       | 10         | 82.5              | 18                      | 2800                                                           | 3                    | 2a                   |
|           | 2R5TPE330MF  | 2.5               | 105                    | 330                    | 2.5                  | 105                       | 10         | 82.5              | 15                      | 3100                                                           | 3                    | 2a                   |
|           | 2R5TPE330MC  | 2.5               | 105                    | 330                    | 2.5                  | 105                       | 10         | 82.5              | 12                      | 3500                                                           | 3                    | 2a                   |
|           | 2R5TPE330M9  | 2.5               | 105                    | 330                    | 2.5                  | 105                       | 10         | 82.5              | 9                       | 3900                                                           | 3                    | 2a                   |
|           | 2R5TPE330M7  | 2.5               | 105                    | 330                    | 2.5                  | 105                       | 10         | 82.5              | 7                       | 4400                                                           | 3                    | 2a                   |
|           | 2R5TPE220M   | 2.5               | 105                    | 220                    | 2.5                  | 105                       | 10         | 55.0              | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 2R5TPE220MI  | 2.5               | 105                    | 220                    | 2.5                  | 105                       | 10         | 55.0              | 18                      | 2800                                                           | 3                    | 2a                   |
| D3L       | 2R5TPE220MF  | 2.5               | 105                    | 220                    | 2.5                  | 105                       | 10         | 55.0              | 15                      | 3100                                                           | 3                    | 2a                   |
|           | 2R5TPE220M9  | 2.5               | 105                    | 220                    | 2.5                  | 105                       | 10         | 55.0              | 9                       | 3900                                                           | 3                    | 2a                   |
|           | 10TPE220ML   | 10                | 105                    | 220                    | 10                   | 105                       | 10         | 220.0             | 25                      | 2400                                                           | —                    | 2a                   |
|           | 10TPE220MIL  | 10                | 105                    | 220                    | 10                   | 105                       | 10         | 220.0             | 18                      | 2800                                                           | —                    | 2a                   |
|           | 6TPE330MAL   | 6.3               | 85                     | 330                    | 5.0                  | 105                       | 10         | 207.9             | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 6TPE330MA9EL | 6.3               | 85                     | 330                    | 5.0                  | 105                       | 10         | 207.9             | 9/500k                  | 3900                                                           | 3                    | 2a                   |
|           | 6TPE330ML    | 6.3               | 105                    | 330                    | 6.3                  | 105                       | 10         | 207.9             | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 6TPE330MIL   | 6.3               | 105                    | 330                    | 6.3                  | 105                       | 10         | 207.9             | 18                      | 2800                                                           | 3                    | 2a                   |
|           | 6TPE330MFL   | 6.3               | 105                    | 330                    | 6.3                  | 105                       | 10         | 207.9             | 15                      | 3100                                                           | 3                    | 2a                   |
|           | 4TPE470MAL   | 4.0               | 105                    | 470                    | 4.0                  | 105                       | 10         | 188.0             | 10                      | 4400                                                           | 3                    | 2a                   |
|           | 4TPE470ML    | 4.0               | 105                    | 470                    | 4.0                  | 105                       | 10         | 188.0             | 25                      | 2400                                                           | 3                    | 2a                   |
|           | 4TPE470MIL   | 4.0               | 105                    | 470                    | 4.0                  | 105                       | 10         | 188.0             | 18                      | 2800                                                           | 3                    | 2a                   |
|           | 4TPE470MFL   | 4.0               | 105                    | 470                    | 4.0                  | 105                       | 10         | 188.0             | 15                      | 3100                                                           | 3                    | 2a                   |
|           | 4TPE470MCL   | 4.0               | 105                    | 470                    | 4.0                  | 105                       | 10         | 188.0             | 12                      | 3500                                                           | 3                    | 2a                   |
|           | 2R5TPE680MFL | 2.5               | 105                    | 680                    | 2.5                  | 105                       | 10         | 170.0             | 15                      | 3100                                                           | 3                    | 2a                   |
|           | 2R5TPE680MCL | 2.5               | 105                    | 680                    | 2.5                  | 105                       | 10         | 170.0             | 12                      | 3500                                                           | 3                    | 2a                   |
| D4        | 10TPE330M    | 10                | 105                    | 330                    | 10                   | 105                       | 10         | 330.0             | 25                      | 3000                                                           | —                    | 2a                   |
|           | 6TPE680M     | 6.3               | 105                    | 680                    | 6.3                  | 105                       | 15         | 428.4             | 25                      | 3000                                                           | 3                    | 2a                   |
|           | 6TPE680MI    | 6.3               | 105                    | 680                    | 6.3                  | 105                       | 15         | 428.4             | 18                      | 3500                                                           | 3                    | 2a                   |
|           | 6TPE470M     | 6.3               | 105                    | 470                    | 6.3                  | 105                       | 15         | 296.1             | 25                      | 3000                                                           | 3                    | 2a                   |
|           | 6TPE470MI    | 6.3               | 105                    | 470                    | 6.3                  | 105                       | 15         | 296.1             | 18                      | 3500                                                           | 3                    | 2a                   |
|           | 6TPE330MAA   | 6.3               | 85                     | 330                    | 5.0                  | 105                       | 10         | 207.9             | 10                      | 4400                                                           | 3                    | 2a                   |
|           | 2R5TPE1000MF | 2.5               | 105                    | 1000                   | 2.5                  | 105                       | 15         | 250.0             | 15                      | 3900                                                           | 3                    | 2a                   |
|           | 2R5TPE1500MF | 2.5               | 105                    | 1500                   | 2.5                  | 105                       | 15         | 375.0             | 15                      | 3900                                                           | —                    | 2a                   |
|           | 2R5TPE1500MC | 2.5               | 105                    | 1500                   | 2.5                  | 105                       | 15         | 375.0             | 12                      | 4400                                                           | —                    | 2a                   |
|           |              |                   |                        |                        |                      |                           |            |                   |                         |                                                                |                      |                      |

※ Red letters : New models

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