



## TPF 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 (mΩ max) 100kHz/20°C | Maximum allowable ripple current (mA rms) 100kHz※1 | MSL                  |                      |
|-----------|--------------|-------------------|------------------------|------------------------|----------------------|---------------------------|------------|-------------------|--------------------------|----------------------------------------------------|----------------------|----------------------|
|           |              |                   |                        |                        |                      |                           |            |                   |                          |                                                    | Reflow temp. ≤ 260°C | Reflow temp. ≤ 250°C |
| D2E       | 2TPF330M6    | 2.0               | 105                    | 330                    | 2.0                  | 105                       | 10         | 132.0             | 6                        | 4700                                               | —                    | 2a                   |
|           | 2TPF220M6    | 2.0               | 105                    | 220                    | 2.0                  | 105                       | 10         | 88.0              | 6                        | 4700                                               | —                    | 2a                   |
| D3L       | 10TPF150ML   | 10                | 105                    | 150                    | 10                   | 105                       | 10         | 150.0             | 15                       | 3600                                               | —                    | 2a                   |
|           | 6TPF330M9L   | 6.3               | 105                    | 330                    | 6.3                  | 105                       | 10         | 207.9             | 9                        | 3900                                               | 3                    | 2a                   |
|           | 6TPF220ML    | 6.3               | 105                    | 220                    | 6.3                  | 105                       | 10         | 138.6             | 12                       | 4000                                               | 3                    | 2a                   |
|           | 6TPF220M9L   | 6.3               | 105                    | 220                    | 6.3                  | 105                       | 10         | 138.6             | 9                        | 4600                                               | 3                    | 2a                   |
|           | 6TPF220M5L   | 6.3               | 105                    | 220                    | 6.3                  | 105                       | 10         | 138.6             | 5                        | 6100                                               | 3                    | 2a                   |
|           | 4TPF470ML    | 4.0               | 105                    | 470                    | 4.0                  | 105                       | 10         | 188.0             | 10                       | 4400                                               | 3                    | 2a                   |
|           | 4TPF330ML    | 4.0               | 105                    | 330                    | 4.0                  | 105                       | 10         | 132.0             | 12                       | 4000                                               | 3                    | 2a                   |
|           | 2R5TPF680ML  | 2.5               | 105                    | 680                    | 2.5                  | 105                       | 10         | 170.0             | 10                       | 4400                                               | 3                    | 2a                   |
|           | 2R5TPF680M7L | 2.5               | 105                    | 680                    | 2.5                  | 105                       | 10         | 170.0             | 7                        | 4400                                               | 3                    | 2a                   |
|           | 2R5TPF680M6L | 2.5               | 105                    | 680                    | 2.5                  | 105                       | 10         | 170.0             | 6                        | 4400                                               | 3                    | 2a                   |
|           | 2R5TPF470ML  | 2.5               | 105                    | 470                    | 2.5                  | 105                       | 10         | 117.5             | 10                       | 4400                                               | 3                    | 2a                   |
|           | 2R5TPF470M7L | 2.5               | 105                    | 470                    | 2.5                  | 105                       | 10         | 117.5             | 7                        | 4400                                               | 3                    | 2a                   |
|           | 2R5TPF470M6L | 2.5               | 105                    | 470                    | 2.5                  | 105                       | 10         | 117.5             | 6                        | 4400                                               | 3                    | 2a                   |
|           | 2R5TPF330M7L | 2.5               | 105                    | 330                    | 2.5                  | 105                       | 10         | 82.5              | 7                        | 4400                                               | 3                    | 2a                   |
|           | 6TPF470MAH   | 6.3               | 105                    | 470                    | 6.3                  | 105                       | 10         | 296.1             | 10                       | 4400                                               | 3                    | 2a                   |
|           | 4TPF680MAH   | 4.0               | 105                    | 680                    | 4.0                  | 105                       | 10         | 272.0             | 10                       | 4400                                               | 3                    | 2a                   |
| D4        | ETPF1000M6H  | 2.5               | 105                    | 1000                   | 2.5                  | 105                       | 10         | 250.0             | 6                        | 5600                                               | 3                    | 2a                   |
|           | ETPF1000M5H  | 2.5               | 105                    | 1000                   | 2.5                  | 105                       | 10         | 250.0             | 5                        | 6100                                               | 3                    | 2a                   |
|           | ETPF680M5H   | 2.5               | 105                    | 680                    | 2.5                  | 105                       | 10         | 170.0             | 5                        | 6100                                               | 3                    | 2a                   |
|           | ETPF470M5H   | 2.5               | 105                    | 470                    | 2.5                  | 105                       | 10         | 117.5             | 5                        | 6100                                               | 3                    | 2a                   |

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