

TPE Series

Low ESR Products

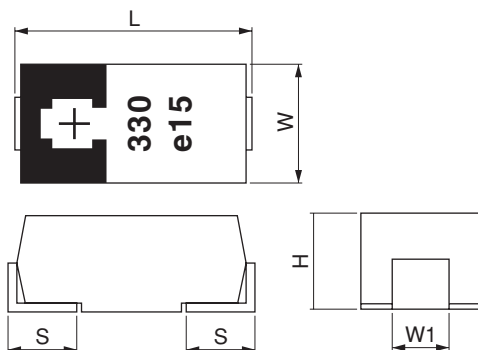
TPE series is low ESR. TPE series contributes toward miniaturization of any products.



Specifications

| | | | |
|---|--|---------------------|--|
| Operating Temperature range (°C) | -55 to +105 | | |
| Rated capacitance range (120Hz/20°C) (μF) | 68 to 1000 | | |
| Capacitance tolerance (120Hz/20°C) | M:±20% | | |
| Rated voltage (V.DC) | 2.5 to 10 | | |
| Dissipation Factor (D.F.) (120Hz/20°C) (%) | ≤10.0 | | |
| Leakage current (Rated voltage applied, after 5 minutes) (μA) | ≤0.1CV | | |
| Equivalent series resistance E.S.R. ESR (mΩ max.) (100kHz/20°C) | Please see the attached characteristics list | | |
| Temperature characteristics of Impedance ratio (100kHz/+20°C) | -55°C | Z/Z _{20°C} | 1.0 to 2.0 |
| | +105°C | Z/Z _{20°C} | 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 value |
| | L.C. | | ≤The initial value |
| Damp heat (Steady state) ¹ (60°C, 90 to 95%RH, 500h, rated voltage applied) | ΔC/C | | Within+50%, -20% of the initial value (2R5TPE220MC, 2R5TPE330MC) |
| | D.F. | | Within+40%, -20% of the initial value (Except for the above model) |
| | L.C. | | ≤3 times the initial value |
| Surge (105°C, 1000 cycles, 1kΩ, surge voltage applied) | ΔC/C | | Within±5% of the initial value |
| | D.F. | | ≤The initial value |
| | L.C. | | ≤3 times the initial value |

Dimensions (unit: mm) (C3, D2E, D3L, D4 size)



| Size code | L* ¹ (±0.3) | W (±0.2) | H* ² (±0.2) | S (±0.2) | W1 (±0.1) |
|-----------|---------------------------|-------------|---------------------------|-------------|--------------|
| C3 | 6.0 | 3.2 | 2.5 | 1.3 | 1.8 |
| 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 ±0.2: C3
※2 ±0.1: D2E

Size List

| RV (SV) | 2.5 (3.2) | 4.0 (5.0) | 6.3 (8.0) | 10.0 (13.0) |
|------------|--------------|--------------|--------------|----------------|
| μF | | | | |
| 68 | | | | D2E |
| 100 | | | D2E | |
| 150 | | D2E | D2E, C3 | |
| 220 | D2E, C3 | D2E, C3 | | D3L |
| 330 | D2E, C3 | | D3L | D4 |
| 470 | D2E | D3L | D4 | |
| 680 | D3L | D4 | | |
| 1000 | D4 | | | |

TPE Series

Characteristics list

| Size code | SANYO Part number | Rated Voltage (V) | Rated Capacitance (μF) | D.F. (%max.) | L.C. (μA) Max./5min. | E.S.R. (mΩ max.) 100kHz/20°C | Maximum allowable ripple current (mA rms) 100kHz*1 |
|-----------|-------------------|-------------------|------------------------|--------------|----------------------|------------------------------|--|
| D2E | 10TPE68M *2 | 10.0 | 68 | 10.0 | 68.0 | 25 | 2400 |
| | 6TPE100M | 6.3 | 100 | 10.0 | 63.0 | 25 | 2400 |
| | 6TPE100MI | | | | | 18 | 2800 |
| | 6TPE150M | 6.3 | 150 | 10.0 | 94.5 | 25 | 2400 |
| | 6TPE150MI | | | | | 18 | 2800 |
| | 4TPE150M | 4.0 | 150 | 10.0 | 60.0 | 25 | 2400 |
| | 4TPE150MI | | | | | 18 | 2800 |
| | 4TPE220M | 4.0 | 220 | 10.0 | 88.0 | 25 | 2400 |
| | 4TPE220MI | | | | | 18 | 2800 |
| | 4TPE220MF | | | | | 15 | 3100 |
| | 2R5TPE220M | 2.5 | 220 | 10.0 | 55.0 | 25 | 2400 |
| | 2R5TPE220MI | | | | | 18 | 2800 |
| | 2R5TPE220MF | | | | | 15 | 3100 |
| | 2R5TPE220MC | | | | | 12 | 3500 |
| | 2R5TPE330M | 2.5 | 330 | 10.0 | 82.5 | 25 | 2400 |
| | 2R5TPE330MI | | | | | 18 | 2800 |
| | 2R5TPE330MF | | | | | 15 | 3100 |
| | 2R5TPE330MC | | | | | 12 | 3500 |
| | 2R5TPE470M | 2.5 | 470 | 10.0 | 117.5 | 25 | 2400 |
| | 2R5TPE470MI | | | | | 18 | 2800 |
| | 2R5TPE470MF | | | | | 15 | 3100 |
| D3L | 10TPE220ML | 10.0 | 220 | 10.0 | 220.0 | 25 | 2400 |
| | 6TPE330ML | 6.3 | 330 | 10.0 | 207.9 | 25 | 2400 |
| | 6TPE330MIL | | | | | 18 | 2800 |
| | 4TPE470ML | 4.0 | 470 | 10.0 | 188.0 | 25 | 2400 |
| | 4TPE470MIL | | | | | 18 | 2800 |
| | 4TPE470MFL | | | | | 15 | 3100 |
| | 2R5TPE680ML | 2.5 | 680 | 10.0 | 170.0 | 25 | 2400 |
| | 2R5TPE680MIL | | | | | 18 | 2800 |
| | 2R5TPE680MFL | | | | | 15 | 3100 |
| D4 | 10TPE330M *2 | 10.0 | 330 | 10.0 | 330.0 | 25 | 3000 |
| | 6TPE470M *2 | 6.3 | 470 | 10.0 | 296.1 | 25 | 3000 |
| | 6TPE470MI *2 | | | | | 18 | 3500 |
| | 4TPE680M *2 | 4.0 | 680 | 10.0 | 272.0 | 25 | 3000 |
| | 4TPE680MI *2 | | | | | 18 | 3500 |
| | 4TPE680MF *2 | | | | | 15 | 3900 |
| | 2R5TPE1000M *2 | 2.5 | 1000 | 10.0 | 250.0 | 25 | 3000 |
| | 2R5TPE1000MI *2 | | | | | 18 | 3500 |
| | 2R5TPE1000MF *2 | | | | | 15 | 3900 |
| C3 | 6TPE150MPC *2 | 6.3 | 150 | 10.0 | 94.0 | 25 | 2400 |
| | 4TPE220MPC *2 | 4.0 | 220 | 10.0 | 88.0 | 25 | 2400 |
| | 2R5TPE220MPC *2 | 2.5 | 220 | 10.0 | 55.0 | 25 | 2400 |
| | 2R5TPE330MPC *2 | 2.5 | 330 | 10.0 | 82.5 | 25 | 2400 |

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