



Metallized Polypropylene Film Capacitors

Axial Leded for Switching Circuits

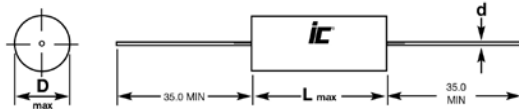
FEATURES

Metallized polypropylene – Low self inductance – High capacitance – Low ESR

APPLICATIONS

Switching power supplies – Solar heaters – DC link – Motor speed controls – UPS
Power converters

| | | | | | | | |
|--|----------------------------|---|------------|------------|------------|--|-------------------------------------|
| Operating Temperature Range | | -40°C to +100°C Above +85°C applied voltage must be de-rated by 1.5%/°C | | | | | |
| Capacitance Tolerance | | ± 10% at 1kHz, 25°C (±5% optional) | | | | | |
| Surge Voltage | VDC | 250 | 330 | 400 | 600 | 700 | 850 |
| | Non repetitive SVDC | 400 | 500 | 600 | 800 | 1000 | 1200 |
| | VDC | 250 | 330 | 400 | 600 | 700 | 850 |
| | VAC | 160 | 220 | 250 | 330 | 400 | 500 |
| Dissipation Factor (Max) | | C≤5μF | | 5μF<C≤30μF | | C>30μF | |
| Tan δ at 1kHz and 25°C | | .06% | | .1% | | .15% | |
| Insulation Resistance after 1 minute of 100VDC applied between the terminals at 25°C | | 30,000 MΩ x μF "Not to exceed 30GΩ" | | | | | |
| Self Inductance | | <1 nano-Henry per mm of body and lead length | | | | | |
| Long Term Stability | | Capacitance variation <1% MAX after 2 years | | | | | |
| Dielectric Strength | | Terminal to Terminal | | | | Terminal to Case | |
| | | 160% of VDC applied for 10 seconds and 25°C or 200% of VDC applied for 2 seconds and 25°C | | | | 3KVAC at 50/60 Hz applied between the terminals and case for 60 seconds and 25°C | |
| Life Expectancy | | ≥100,000 with VDC ≥30,000 with VAC | | | | | |
| Failure Quota | | 300/billion component hours | | | | | |
| Damp Heat Test | | Test Condition | | | | Performance Requirements | |
| | | Temperature +40°C ±2% | | | | Max Capacitance Change | < 2% of initially measured value |
| | | Relative Humidity = 93 ±2% | | | | DF Change | < 200% of initially specified value |
| | | Test Length = 56 Days | | | | Insulation Resistance | ≥50% of minimum specified value |
| Resistance to Soldering Heat Solder bath temperature: +260°C +/- 5°C Exposure time: 10 seconds +/- 1 second | | Max Capacitance Change | | | | < 1% of initially measured value | |
| | | DF Change | | | | < .1% at 1kHz | |
| | | Insulation Resistance | | | | ≥50% of minimum specified value | |
| Construction | | Metallized polypropylene film | | | | | |
| Electrodes | | Vacuum deposited metal layers | | | | | |
| Coating | | Flame retardant tape wrap (UL 510) with epoxy end fill (UL94V-0) | | | | | |
| Lead Terminations | | Lead-free tinned copper leads | | | | | |



| Diameter (D) | Lead Diameter (d) |
|--------------|-------------------|
| ≤14 | 0.8 |
| 14<D<23 | 1.0 |
| D>23 | 1.2 |

PHC

High Frequency Metallized Polypropylene Axial Lead

| Capacitance (μF) | WVDC | IC PART NUMBER | dv/dt (v/μ sec.) | Maximum RMS Ripple Current (A) 100 kHz, +70°C | Typical ESR (mΩ) 100 kHz, +25°C | Dims DxL (mm) |
|------------------|------|----------------|------------------|---|---------------------------------|---------------|
| 0.1 | 850 | 104PHC850KG | 375 | 3.5 | 12.9 | 11.5x29 |
| 0.15 | 850 | 154PHC850KG | 375 | 4.5 | 9.8 | 13x29 |
| 0.15 | 850 | 154PHC850K | 300 | 4.5 | 10.8 | 12x34 |
| 0.22 | 700 | 224PHC700KG | 135 | 4 | 10.7 | 12.5x29 |
| 0.22 | 700 | 224PHC700KJ | 105 | 3.5 | 11.6 | 11.5x34 |
| 0.22 | 850 | 224PHC850KG | 375 | 5.5 | 7.7 | 15x29 |
| 0.22 | 850 | 224PHC850K | 300 | 5.5 | 8.4 | 13.5x34 |
| 0.33 | 600 | 334PHC600KG | 95 | 4 | 9.5 | 12x29 |
| 0.33 | 700 | 334PHC700KG | 135 | 5 | 8.5 | 15x29 |
| 0.33 | 700 | 334PHC700KJ | 105 | 5 | 9.4 | 13.5x34 |
| 0.33 | 850 | 334PHC850KG | 375 | 7 | 5.9 | 17.5x29 |
| 0.33 | 850 | 334PHC850K | 300 | 7 | 6.6 | 16x34 |
| 0.47 | 400 | 474PHC400K | 75 | 4 | 8.6 | 11x29 |
| 0.47 | 600 | 474PHC600K | 75 | 5 | 9.4 | 12.5x34 |
| 0.47 | 600 | 474PHC600KG | 95 | 5 | 8.3 | 13.5x29 |
| 0.47 | 700 | 474PHC700KG | 135 | 6.5 | 6.9 | 17x29 |
| 0.47 | 700 | 474PHC700K | 105 | 6.5 | 7.7 | 15.5x34 |
| 0.47 | 850 | 474PHC850K | 300 | 9 | 5.4 | 18.5x34 |
| 0.68 | 330 | 684PHC330KG | 60 | 4.5 | 9.1 | 11x29 |
| 0.68 | 400 | 684PHC400KG | 75 | 5.5 | 7.1 | 13x29 |
| 0.68 | 400 | 684PHC400K | 55 | 5 | 8.9 | 12x34 |
| 0.68 | 600 | 684PHC600K | 75 | 6 | 7.8 | 14x34 |
| 0.68 | 600 | 684PHC600KG | 95 | 6 | 6.8 | 16x29 |
| 0.68 | 700 | 684PHC700K | 105 | 8 | 6 | 17.5x34 |
| 0.68 | 850 | 684PHC850K | 300 | 10 | 4.3 | 21.5x34 |
| 0.68 | 850 | 684PHC850KN | 200 | 9 | 5.4 | 18x46 |
| 1 | 250 | 105PHC250K | 50 | 4.5 | 7.6 | 11x29 |
| 1 | 330 | 105PHC330KG | 60 | 5.5 | 6.9 | 12.5x29 |
| 1 | 400 | 105PHC400KG | 75 | 6.5 | 5.8 | 15x29 |
| 1 | 400 | 105PHC400K | 55 | 6 | 6.7 | 13x34 |
| 1 | 600 | 105PHC600K | 75 | 8 | 6.1 | 17.5x34 |
| 1 | 700 | 105PHC700K | 105 | 10 | 4.5 | 21.5x34 |
| 1 | 700 | 105PHC700KN | 70 | 9 | 6.6 | 18x46 |
| 1 | 850 | 105PHC850KJ | 300 | 13 | 3.2 | 26x34 |
| 1 | 850 | 105PHC850K | 200 | 10.5 | 4.3 | 21.5x46 |
| 1.2 | 700 | 125PHC700KN | 70 | 9 | 6.3 | 20x46 |
| 1.2 | 700 | 125PHC700K | 105 | 10.5 | 3.9 | 24x34 |
| 1.5 | 250 | 155PHC250K | 50 | 5.5 | 6.1 | 13x29 |
| 1.5 | 330 | 155PHC330KG | 60 | 6.5 | 5.5 | 15x29 |
| 1.5 | 330 | 155PHC330KJ | 45 | 6 | 6.3 | 13.5x34 |
| 1.5 | 400 | 155PHC400KG | 75 | 7.5 | 4.7 | 17.5x29 |
| 1.5 | 400 | 155PHC400K | 55 | 7 | 5.6 | 15.5x34 |
| 1.5 | 600 | 155PHC600K | 75 | 9 | 4.9 | 20x34 |
| 1.5 | 700 | 155PHC700K | 70 | 10.5 | 5.6 | 21.5x46 |
| 1.5 | 850 | 155PHC850K | 200 | 14 | 3.5 | 25.5x46 |
| 2 | 250 | 205PHC250K | 50 | 6 | 4.9 | 14.5x29 |
| 2 | 250 | 205PHC250KG | 40 | 6 | 5.1 | 12.5x34 |
| 2 | 330 | 205PHC330KG | 60 | 7.5 | 4.7 | 16.5x29 |
| 2 | 330 | 205PHC330KJ | 45 | 7 | 5.7 | 15x34 |
| 2 | 400 | 205PHC400K | 55 | 9 | 4.6 | 17.5x34 |
| 2 | 600 | 205PHC600K | 55 | 10 | 5.3 | 20x46 |
| 2 | 600 | 205PHC600KJ | 75 | 10.5 | 4.1 | 23x34 |
| 2 | 700 | 205PHC700K | 70 | 12 | 4.8 | 24.5x46 |
| 2 | 850 | 205PHC850K | 200 | 14 | 2.9 | 29x46 |
| 2.2 | 250 | 225PHC250K | 40 | 6 | 5.7 | 13x34 |
| 2.2 | 250 | 225PHC250KG | 50 | 6.5 | 5 | 15x29 |
| 2.2 | 330 | 225PHC330KG | 60 | 8 | 4.3 | 17.5x29 |
| 2.2 | 330 | 225PHC330KJ | 45 | 7.5 | 5.3 | 15.5x34 |

| Capacitance (μF) | WVDC | IC PART NUMBER | dv/dt (v/μ sec.) | Maximum RMS Ripple Current (A) 100 kHz, +70°C | Typical ESR (mΩ) 100 kHz, +25°C | Dims DxL (mm) |
|------------------|------|----------------|------------------|---|---------------------------------|---------------|
| 2.2 | 400 | 225PHC400K | 55 | 9 | 4.4 | 18.5x34 |
| 2.2 | 600 | 225PHC600K | 55 | 10 | 4.8 | 21x46 |
| 2.2 | 600 | 225PHC600KJ | 75 | 10.5 | 3.8 | 24x34 |
| 2.2 | 700 | 225PHC700K | 70 | 12.5 | 4.5 | 25.5x46 |
| 2.2 | 850 | 225PHC850KR | 125 | 14 | 3.8 | 26.5x55 |
| 2.2 | 850 | 225PHC850KS | 110 | 14 | 4.3 | 25x59 |
| 2.2 | 850 | 225PHC850K | 200 | 14 | 2.9 | 30x46 |
| 2.5 | 250 | 255PHC250KG | 50 | 7 | 4.8 | 15.5x29 |
| 2.5 | 250 | 255PHC250K | 40 | 7 | 5.4 | 14x55 |
| 2.5 | 330 | 255PHC330KJ | 45 | 8 | 5 | 16.5x34 |
| 2.5 | 400 | 255PHC400K | 55 | 9.5 | 4.2 | 19x34 |
| 2.5 | 600 | 255PHC600K | 55 | 10.5 | 4.4 | 22x46 |
| 2.5 | 700 | 255PHC700K | 70 | 13.5 | 4 | 27x46 |
| 2.5 | 850 | 255PHC850KR | 125 | 14 | 3.6 | 28x55 |
| 2.5 | 850 | 255PHC850K | 200 | 14 | 2.7 | 32x46 |
| 2.5 | 850 | 255PHC850KS | 110 | 14 | 4.1 | 26.5x59 |
| 3 | 250 | 305PHC250K | 40 | 7 | 4.8 | 15x34 |
| 3 | 250 | 305PHC250KG | 50 | 7.5 | 4.4 | 17x29 |
| 3 | 330 | 305PHC330KJ | 45 | 9 | 4.4 | 18.5x34 |
| 3 | 400 | 305PHC400K | 55 | 10.5 | 3.8 | 21x34 |
| 3 | 600 | 305PHC600K | 55 | 10.5 | 4.2 | 24x46 |
| 3 | 700 | 305PHC700K | 70 | 12 | 6.1 | 29x46 |
| 3 | 850 | 305PHC850K | 200 | 14 | 2.4 | 34.5x46 |
| 3 | 850 | 305PHC850KR | 125 | 14 | 3.2 | 30.5x55 |
| 3 | 850 | 305PHC850KS | 110 | 14 | 3.6 | 29x59 |
| 3.3 | 250 | 335PHC250K | 40 | 8 | 4.4 | 15.5x34 |
| 3.3 | 330 | 335PHC330KJ | 45 | 9 | 4.3 | 19x34 |
| 3.3 | 400 | 335PHC400K | 55 | 10.5 | 3.7 | 22x34 |
| 3.3 | 400 | 335PHC400KN | 40 | 10.5 | 4.3 | 19x46 |
| 3.3 | 600 | 335PHC600K | 55 | 10.5 | 3.8 | 25x46 |
| 3.3 | 700 | 335PHC700K | 70 | 12 | 5.9 | 30.5x46 |
| 3.3 | 850 | 335PHC850K | 125 | 14 | 3.1 | 32x55 |
| 3.3 | 850 | 335PHC850KS | 110 | 14 | 3.5 | 30x59 |
| 4 | 250 | 405PHC250K | 40 | 9 | 3.8 | 17x34 |
| 4 | 330 | 405PHC330KJ | 45 | 10.5 | 3.8 | 20.5x34 |
| 4 | 400 | 405PHC400K | 40 | 10.5 | 3.8 | 20.5x46 |
| 4 | 400 | 405PHC400KJ | 55 | 10.5 | 3.3 | 24x34 |
| 4 | 600 | 405PHC600K | 55 | 13.5 | 3.6 | 27x46 |
| 4 | 700 | 405PHC700K | 70 | 13.5 | 5.4 | 33.5x46 |
| 4 | 700 | 405PHC700KR | 60 | 12.5 | 6.7 | 29x55 |
| 4 | 700 | 405PHC700KS | 45 | 12 | 7.7 | 27.5x59 |
| 4 | 850 | 405PHC850KS | 110 | 14 | 3.1 | 33x59 |
| 4 | 850 | 405PHC850K | 125 | 14 | 2.8 | 35x55 |
| 4.7 | 250 | 475PHC250KJ | 40 | 10 | 3.5 | 18x34 |
| 4.7 | 330 | 475PHC330KJ | 45 | 10.5 | 3.3 | 22x34 |
| 4.7 | 330 | 475PHC330KN | 30 | 10.5 | 4.2 | 19x46 |
| 4.7 | 400 | 475PHC400K | 40 | 9.5 | 7.6 | 22x46 |
| 4.7 | 600 | 475PHC600K | 55 | 12 | 6.4 | 29x46 |
| 4.7 | 600 | 475PHC600KS | 40 | 11 | 8.6 | 24.5x59 |
| 4.7 | 600 | 475PHC600KR | 50 | 11.5 | 7.7 | 26.5x55 |
| 4.7 | 700 | 475PHC700KS | 45 | 12 | 7 | 29.5x59 |
| 4.7 | 700 | 475PHC700K | 60 | 13 | 6.1 | 31x55 |
| 4.7 | 850 | 475PHC850K | 125 | 14 | 2.5 | 37x55 |
| 4.7 | 850 | 475PHC850KS | 110 | 14 | 2.8 | 35.5x59 |
| 5 | 250 | 505PHC250K | 40 | 10 | 3.4 | 18.5x34 |
| 5 | 330 | 505PHC330KJ | 45 | 10.5 | 3.2 | 22.5x34 |
| 5 | 330 | 505PHC330KN | 30 | 10.5 | 4.1 | 19.5x46 |
| 5 | 400 | 505PHC400K | 40 | 10 | 7.4 | 22.5x46 |

PHC

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| Capacitance (μF) | WVDC | IC PART NUMBER | dv/dt (v/μ sec.) | Maximum RMS Ripple Current (A) 100 kHz, +70°C | Typical ESR (mΩ) 100 kHz, +25°C | Dims DxL (mm) |
|------------------|------|----------------|------------------|---|---------------------------------|---------------|
| 5 | 600 | 505PHC600K | 50 | 12 | 7.4 | 27x55 |
| 5 | 600 | 505PHC600KN | 55 | 12.5 | 6.3 | 29.5x46 |
| 5 | 600 | 505PHC600KS | 40 | 11.5 | 8.3 | 25x59 |
| 5 | 700 | 505PHC700KS | 45 | 12.5 | 6.6 | 30.5x59 |
| 5 | 700 | 505PHC700K | 60 | 13.5 | 5.8 | 32x55 |
| 5 | 850 | 505PHC850K | 125 | 14 | 2.4 | 38x55 |
| 5 | 850 | 505PHC850KS | 110 | 14 | 2.7 | 36.5x59 |
| 6.8 | 250 | 685PHC250K | 40 | 10.5 | 3.1 | 21x34 |
| 6.8 | 330 | 685PHC330KN | 30 | 10.5 | 3.6 | 22x46 |
| 6.8 | 400 | 685PHC400K | 40 | 11 | 6.4 | 26x46 |
| 6.8 | 600 | 685PHC600K | 50 | 12.5 | 6.5 | 30x55 |
| 6.8 | 600 | 685PHC600KS | 40 | 12 | 7.3 | 28.5x59 |
| 6.8 | 700 | 685PHC700KS | 45 | 14 | 5.8 | 35x59 |
| 6.8 | 700 | 685PHC700K | 60 | 14 | 5.1 | 37x55 |
| 6.8 | 850 | 685PHC850KS | 110 | 14 | 2.3 | 41.5x59 |
| 8.2 | 700 | 825PHC700KS | 45 | 14 | 5.3 | 38x59 |
| 8.2 | 700 | 825PHC700K | 60 | 14 | 4.6 | 41x55 |
| 10 | 250 | 106PHC250KN | 25 | 10.5 | 3.3 | 21.5x46 |
| 10 | 250 | 106PHC250K | 40 | 10.5 | 2.5 | 24x34 |
| 10 | 330 | 106PHC330KN | 30 | 11 | 6.7 | 26x46 |
| 10 | 400 | 106PHC400KS | 25 | 11 | 7.1 | 26x59 |
| 10 | 400 | 106PHC400K | 30 | 12 | 6.3 | 27x55 |
| 10 | 400 | 106PHC400KN | 40 | 13 | 5.4 | 31x46 |
| 10 | 600 | 106PHC600K | 50 | 14 | 5.4 | 35x55 |
| 10 | 600 | 106PHC600KS | 40 | 14 | 6.1 | 33.5x59 |
| 10 | 700 | 106PHC700KS | 45 | 14 | 4.9 | 41.5x59 |
| 12.5 | 600 | 126PHC600KS | 40 | 14 | 5.5 | 37.5x59 |
| 12.5 | 600 | 126PHC600K | 50 | 14 | 4.9 | 40.5x55 |
| 15 | 250 | 156PHC250K | 25 | 14 | 2.7 | 25.5x46 |
| 15 | 330 | 156PHC330KN | 30 | 13 | 5.4 | 31x46 |
| 15 | 330 | 156PHC330KR | 25 | 12.5 | 6 | 28x55 |
| 15 | 330 | 156PHC330KS | 20 | 12 | 6.8 | 26.5x59 |
| 15 | 400 | 156PHC400KS | 25 | 14 | 5.6 | 31x59 |

| Capacitance (μF) | WVDC | IC PART NUMBER | dv/dt (v/μ sec.) | Maximum RMS Ripple Current (A) 100 kHz, +70°C | Typical ESR (mΩ) 100 kHz, +25°C | Dims DxL (mm) |
|------------------|------|----------------|------------------|---|---------------------------------|---------------|
| 15 | 400 | 156PHC400K | 30 | 14 | 5 | 33x55 |
| 15 | 600 | 156PHC600KS | 40 | 14 | 5.1 | 41x59 |
| 20 | 250 | 206PHC250K | 25 | 14 | 5 | 29x46 |
| 20 | 330 | 206PHC330KR | 25 | 14 | 5.1 | 31.5x55 |
| 20 | 330 | 206PHC330KS | 20 | 13.5 | 5.8 | 30x59 |
| 20 | 400 | 206PHC400KS | 25 | 14 | 4.7 | 35x59 |
| 20 | 400 | 206PHC400K | 30 | 14 | 4.3 | 37x55 |
| 22 | 250 | 226PHC250KN | 25 | 14 | 4.7 | 30.5x46 |
| 22 | 330 | 226PHC330KR | 25 | 14 | 4.8 | 33x55 |
| 22 | 330 | 226PHC330KS | 20 | 14 | 5.4 | 31x59 |
| 22 | 400 | 226PHC400KR | 30 | 14 | 4.1 | 39x55 |
| 22 | 400 | 226PHC400KS | 25 | 14 | 4.5 | 37x59 |
| 25 | 250 | 256PHC250K | 25 | 14 | 4.4 | 32x46 |
| 25 | 330 | 256PHC330KR | 25 | 14 | 4.5 | 35x55 |
| 25 | 330 | 256PHC330KS | 20 | 14 | 5 | 33x59 |
| 25 | 400 | 256PHC400KS | 25 | 14 | 4.2 | 39x59 |
| 25 | 400 | 256PHC400K | 30 | 14 | 3.8 | 41.5x55 |
| 30 | 250 | 306PHC250KS | 15 | 14 | 5.3 | 29.5x59 |
| 30 | 250 | 306PHC250K | 20 | 14 | 4.5 | 31x55 |
| 30 | 330 | 306PHC330KR | 25 | 14 | 4.1 | 38x55 |
| 30 | 330 | 306PHC330KS | 20 | 14 | 4.5 | 36x59 |
| 33 | 250 | 336PHC250KR | 20 | 14 | 4.3 | 32.5x55 |
| 33 | 250 | 336PHC250KS | 15 | 14 | 5 | 31x59 |
| 33 | 330 | 336PHC330KR | 25 | 14 | 3.9 | 39.5x55 |
| 33 | 330 | 336PHC330KS | 20 | 14 | 4.3 | 37.5x59 |
| 35 | 330 | 356PHC330KR | 25 | 14 | 3.8 | 41x55 |
| 35 | 330 | 356PHC330KS | 20 | 14 | 4.2 | 38.5x59 |
| 40 | 250 | 406PHC250KS | 15 | 14 | 4.5 | 33.5x59 |
| 40 | 250 | 406PHC250K | 20 | 14 | 3.9 | 36x55 |
| 40 | 330 | 406PHC330KS | 20 | 14 | 3.9 | 41x59 |
| 50 | 250 | 506PHC250KS | 15 | 14 | 3.9 | 37x59 |
| 50 | 250 | 506PHC250K | 20 | 14 | 3.5 | 40x55 |
| 60 | 250 | 606PHC250KS | 15 | 14 | 3.5 | 40x59 |