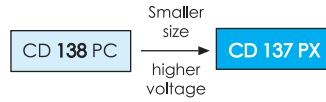


# CD 137 PX SERIES



5000h at 85°C

- Features
  - High Reliability at High Voltage
  - Long Life at Compact Size
  - RoHS Compliant
- Applications
  - Professional Inverters and Power Supplies

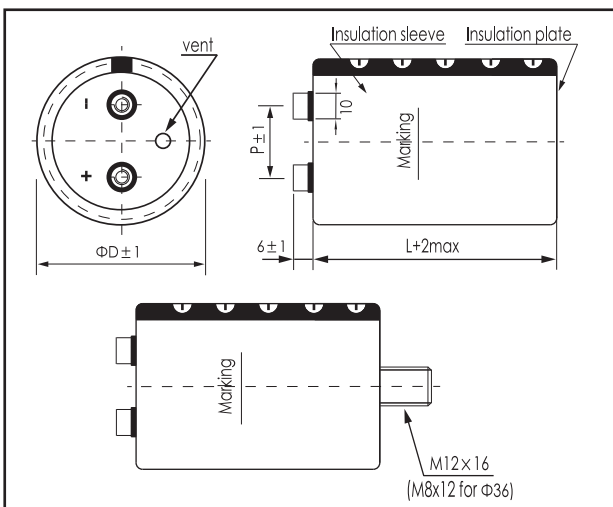


| Items                               | Characteristics                                                                                                                                                                   |      |     |      |     |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|------|-----|
| Operating Temperature Range (°C)    | -40 ~ +85                                                                                                                                                                         |      |     |      |     |
| Voltage Range (V)                   | 400 ~ 550                                                                                                                                                                         |      |     |      |     |
| Capacitance Range (µF)              | 1000 ~ 22000                                                                                                                                                                      |      |     |      |     |
| Capacitance Tolerance (20°C, 120Hz) | ± 20%                                                                                                                                                                             |      |     |      |     |
| Leakage Current (µA)                | After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0.0 C V or 5n A, whichever is smaller.<br>C: Nominal Capacitance (µF) V: Rated Voltage (V) |      |     |      |     |
| Dissipation Factor (20°C, 120Hz)    | $U_R(V)$                                                                                                                                                                          | 400  | 450 | 500  | 550 |
|                                     | $\tan\delta_{max}$                                                                                                                                                                | 0.15 |     | 0.20 |     |

| Lifetime                                                                | Useful Life                           |                                   | Load Life                             | Endurance Test                        | Shelf Life                                                                                                |
|-------------------------------------------------------------------------|---------------------------------------|-----------------------------------|---------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------|
|                                                                         | >10000h                               | >100000h                          | 5000h                                 | 5000h                                 | 1000h                                                                                                     |
| Leakage Current                                                         | Not more than specified value         |                                   | Not more than specified value         | Not more than specified value         | Not more than specified value                                                                             |
| Capacitance Change                                                      | Within ± 30% of initial value         |                                   | Within ± 20% of initial value         | Within ± 10% of initial value         | Within ± 20% of initial value                                                                             |
| Dissipation Factor                                                      | Not more than 300% of specified value |                                   | Not more than 200% of specified value | Not more than 130% of specified value | Not more than 200% of specified value                                                                     |
| Condition:<br>Applied Voltage<br>Applied Current<br>Applied Temperature | $U_R$<br>$I_R$<br>85°C                | $U_R$<br>$1.2 \times I_R$<br>40°C | $U_R$<br>$I_R$<br>85°C                | $U_R$<br>$I_R = 0$<br>85°C            | $U_R = 0$<br>$I_R = 0$<br>85°C<br>After test:<br>$U_R$ to be applied for 60min<br>>24h before measurement |

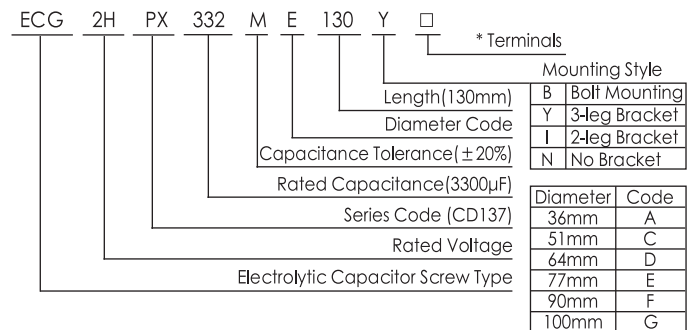
## Dimensions

mm



| ΦD/mm | 51   | 64   | 77   | 90   | 101  |
|-------|------|------|------|------|------|
| P/mm  | 22.0 | 28.2 | 31.4 | 31.4 | 41.5 |

## Part Number System (Ex: 500V3300µF)



## Ripple Current Coefficient

| Frequency (Hz) | 50/60 | 120  | 300  | 1k   | >10k |
|----------------|-------|------|------|------|------|
| Coefficient    | 0.80  | 1.00 | 1.10 | 1.30 | 1.40 |

| Ambient Temp (°C) | 40   | 60   | 85   |
|-------------------|------|------|------|
| Coefficient       | 1.89 | 1.67 | 1.00 |

\*Hex head screw M5 x 10 and M6 x 12 are standard screws. Longer screws are available on request.  
 \*Max tightening torque for screw terminal M5: 3Nm, M6: 4Nm. Max torque for bolt mounting M12: 12.5Nm.  
 \*Screws, Bracket and cap nut will be delivered separately. See "Accessories" for shape and dimensions.

The useful life can be prolonged by operating capacitor at loads below the rated values (e.g. lower operating voltage, Rms ripple current or ambient temperature) and by appropriate cooling measures.  
 It is advisable not to apply a ripple current exceeding the rated ripple current without any cooling measures as this will shorten capacitor's life.

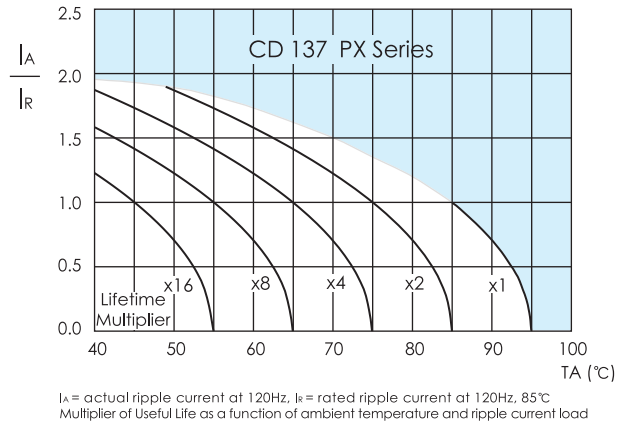
## Ratings for CD 137 PX Series

| $U_a$<br>(Surge Voltage)<br>Code | Rated Capacitance  | Max.ESR<br>20°C,<br>120Hz | Typ ESR<br>20°C,<br>120Hz | Rated Ripple Current<br>85°C,<br>120Hz | Size<br>$\phi D \times L$ | P/N               |
|----------------------------------|--------------------|---------------------------|---------------------------|----------------------------------------|---------------------------|-------------------|
| (V)                              | ( $\mu F$ )        | (m $\Omega$ )             | (m $\Omega$ )             | (Arms)                                 | (mm)                      | -                 |
| 400<br>(450)<br>2G               | 2200               | 98                        | 28                        | 8.8                                    | 51 × 115                  | ECG2GPX222MC115□□ |
|                                  | 2700               | 80                        | 24                        | 10.2                                   | 51 × 130                  | ECG2GPX272MC130□□ |
|                                  | 3300               | 65                        | 21                        | 11.0                                   | 64 × 96                   | ECG2GPX332MD096□□ |
|                                  | 3900               | 55                        | 19                        | 12.8                                   | 64 × 115                  | ECG2GPX392MD115□□ |
|                                  | 4700               | 46                        | 15                        | 14.8                                   | 64 × 130                  | ECG2GPX472MD130□□ |
|                                  | 5600               | 38                        | 14                        | 16.2                                   | 77 × 115                  | ECG2GPX562ME115□□ |
|                                  | 6800               | 32                        | 13                        | 18.7                                   | 77 × 130                  | ECG2GPX682ME130□□ |
|                                  | 8200               | 26                        | 12                        | 22.0                                   | 77 × 155                  | ECG2GPX822ME155□□ |
|                                  | 10000              | 22                        | 10                        | 26.7                                   | 77 × 195                  | ECG2GPX103ME195□□ |
|                                  | 10000              | 22                        | 10                        | 24.2                                   | 90 × 131                  | ECG2GPX103MF131□□ |
|                                  | 12000              | 18                        | 8                         | 28.5                                   | 90 × 157                  | ECG2GPX123MF157□□ |
|                                  | 15000              | 14                        | 6                         | 34.8                                   | 90 × 196                  | ECG2GPX153MF196□□ |
|                                  | 18000              | 12                        | 5                         | 41.2                                   | 90 × 236                  | ECG2GPX183MF236□□ |
|                                  | 22000              | 10                        | 5                         | 47.0                                   | 101 × 237                 | ECG2GPX223MG237□□ |
|                                  | 450<br>(500)<br>2W | 1800                      | 119                       | 45                                     | 7.6                       | 51 × 115          |
| 2200                             |                    | 98                        | 35                        | 8.8                                    | 51 × 130                  | ECG2WPX222MC130□□ |
| 2700                             |                    | 80                        | 30                        | 9.5                                    | 64 × 96                   | ECG2WPX272MD096□□ |
| 3300                             |                    | 65                        | 24                        | 11.2                                   | 64 × 115                  | ECG2WPX332MD115□□ |
| 3900                             |                    | 55                        | 20                        | 12.8                                   | 64 × 130                  | ECG2WPX392MD130□□ |
| 4700                             |                    | 46                        | 16                        | 14.1                                   | 77 × 115                  | ECG2WPX472ME115□□ |
| 5600                             |                    | 38                        | 13                        | 16.2                                   | 77 × 130                  | ECG2WPX562ME130□□ |
| 6800                             |                    | 32                        | 11                        | 19.1                                   | 77 × 155                  | ECG2WPX682ME155□□ |
| 8200                             |                    | 26                        | 10                        | 23.0                                   | 77 × 195                  | ECG2WPX822ME195□□ |
| 8200                             |                    | 26                        | 10                        | 21.0                                   | 90 × 131                  | ECG2WPX822MF131□□ |
| 10000                            |                    | 22                        | 9                         | 25.7                                   | 90 × 171                  | ECG2WPX103MF171□□ |
| 12000                            |                    | 18                        | 8                         | 29.7                                   | 90 × 196                  | ECG2WPX123MF196□□ |
| 12000                            |                    | 18                        | 8                         | 29.3                                   | 101 × 175                 | ECG2WPX123MG175□□ |
| 15000                            |                    | 14                        | 7                         | 35.9                                   | 90 × 236                  | ECG2WPX153MF236□□ |
| 15000                            |                    | 14                        | 7                         | 34.2                                   | 101 × 195                 | ECG2WPX153MG195□□ |
| 18000                            | 12                 | 6                         | 40.5                      | 101 × 237                              | ECG2WPX183MG237□□         |                   |
| 500<br>(550)<br>2H               | 1200               | 215                       | 94                        | 6.2                                    | 51 × 115                  | ECG2HPX122MC115□□ |
|                                  | 1200               | 215                       | 94                        | 6.3                                    | 64 × 96                   | ECG2HPX122MD096□□ |
|                                  | 1500               | 172                       | 72                        | 7.3                                    | 51 × 130                  | ECG2HPX152MC130□□ |
|                                  | 1500               | 172                       | 72                        | 7.1                                    | 64 × 96                   | ECG2HPX152MD096□□ |
|                                  | 1800               | 143                       | 51                        | 8.3                                    | 64 × 115                  | ECG2HPX182MD115□□ |
|                                  | 2200               | 117                       | 40                        | 9.6                                    | 64 × 130                  | ECG2HPX222MD130□□ |
|                                  | 2700               | 96                        | 35                        | 10.7                                   | 77 × 115                  | ECG2HPX272ME115□□ |
|                                  | 3300               | 78                        | 30                        | 12.4                                   | 77 × 130                  | ECG2HPX332ME130□□ |
|                                  | 3900               | 66                        | 25                        | 14.4                                   | 77 × 155                  | ECG2HPX392ME155□□ |
|                                  | 4700               | 55                        | 24                        | 16.5                                   | 77 × 171                  | ECG2HPX472ME171□□ |
|                                  | 4700               | 55                        | 24                        | 15.8                                   | 90 × 131                  | ECG2HPX472MF131□□ |
|                                  | 5600               | 46                        | 22                        | 19.0                                   | 77 × 195                  | ECG2HPX562ME195□□ |
|                                  | 5600               | 46                        | 22                        | 18.6                                   | 90 × 157                  | ECG2HPX562MF157□□ |
|                                  | 6800               | 38                        | 19                        | 21.2                                   | 90 × 171                  | ECG2HPX682MF171□□ |
|                                  | 8200               | 31                        | 14                        | 24.5                                   | 90 × 196                  | ECG2HPX822MF196□□ |
| 8200                             | 31                 | 14                        | 24.2                      | 101 × 175                              | ECG2HPX822MG175□□         |                   |
| 10000                            | 26                 | 12                        | 29.3                      | 90 × 236                               | ECG2HPX103MF236□□         |                   |
| 10000                            | 26                 | 12                        | 27.9                      | 101 × 195                              | ECG2HPX103MG195□□         |                   |
| 12000                            | 22                 | 11                        | 33.1                      | 101 × 237                              | ECG2HPX123MG237□□         |                   |
| 550<br>(600)<br>2Y               | 1000               | 258                       | 110                       | 5.9                                    | 51 × 130                  | ECG2YPX102MC130□□ |
|                                  | 1200               | 215                       | 95                        | 6.8                                    | 64 × 115                  | ECG2YPX122MD115□□ |
|                                  | 1500               | 172                       | 74                        | 8.0                                    | 64 × 130                  | ECG2YPX152MD130□□ |
|                                  | 1800               | 143                       | 72                        | 8.7                                    | 77 × 115                  | ECG2YPX182ME115□□ |
|                                  | 2200               | 117                       | 50                        | 10.1                                   | 77 × 130                  | ECG2YPX222ME130□□ |
|                                  | 2700               | 96                        | 40                        | 12.0                                   | 77 × 155                  | ECG2YPX272ME155□□ |
|                                  | 3300               | 78                        | 36                        | 13.3                                   | 77 × 155                  | ECG2YPX332ME155□□ |
|                                  | 3900               | 66                        | 30                        | 15.5                                   | 90 × 157                  | ECG2YPX392MF157□□ |
|                                  | 4700               | 55                        | 24                        | 17.6                                   | 90 × 171                  | ECG2YPX472MF171□□ |
|                                  | 5600               | 46                        | 20                        | 20.3                                   | 90 × 196                  | ECG2YPX562MF196□□ |
|                                  | 6800               | 38                        | 16                        | 24.1                                   | 90 × 236                  | ECG2YPX682MF236□□ |
|                                  | 8200               | 31                        | 14                        | 27.3                                   | 101 × 237                 | ECG2YPX822MG237□□ |

Mounting code ("B" for bolt mounting, "Y/I/N" for bracket mounting) —  
Terminal options(A,B,C see "Dimensions" for details.) —

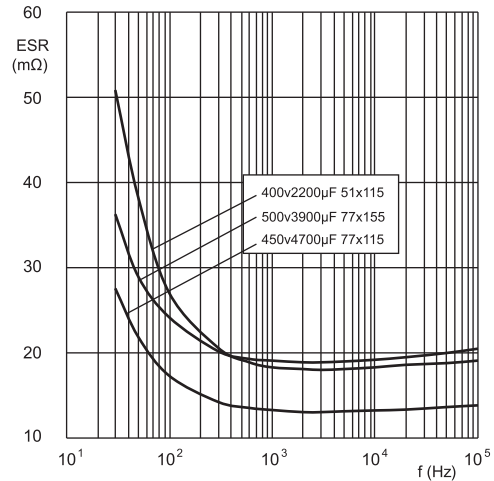
Customer products are available on request.

## Lifetime Diagram



## Typical Curves

### ESR ~ Frequency f at 20°C



### Impedance Z ~ Frequency f at 20°C

