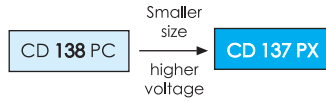


5000h at 85°C

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

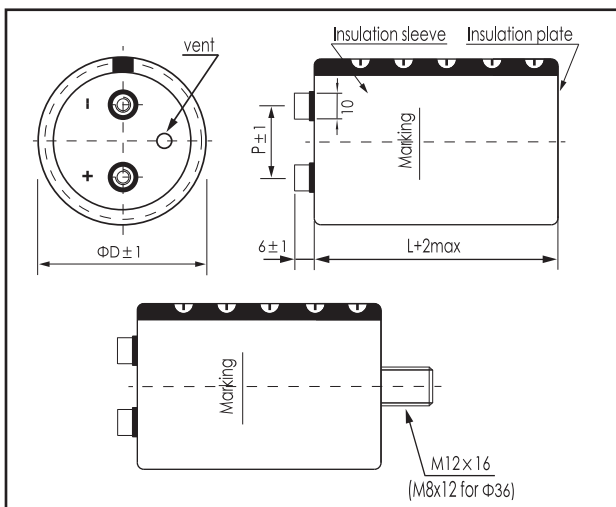


| Items                               | Characteristics   |      |     |      |     |
|-------------------------------------|---|------|-----|------|-----|
| Operating Temperature Range (°C)    | -40 ~ +85   |      |     |      |     |
| Voltage Range (V)                   | 400 ~ 550   |      |     |      |     |
| 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 0.01CV or 5mA, 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 |     |

|   | Useful Life                           |                                   | Load Life                             | Endurance Test                        | Shelf Life  |
|---|---------------------------------------|-----------------------------------|---------------------------------------|---------------------------------------|---|
| Lifetime  | >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  |
|   |                                       |                                   |                                       |                                       | After test:<br>$U_r$ to be applied for 60min<br>>24h before measurement |

## Dimensions

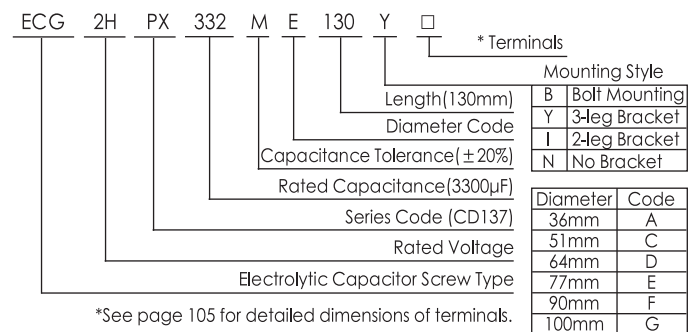
mm



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

\*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" (page 104.105) for shape and dimensions.

## 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 |

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.

SCREW

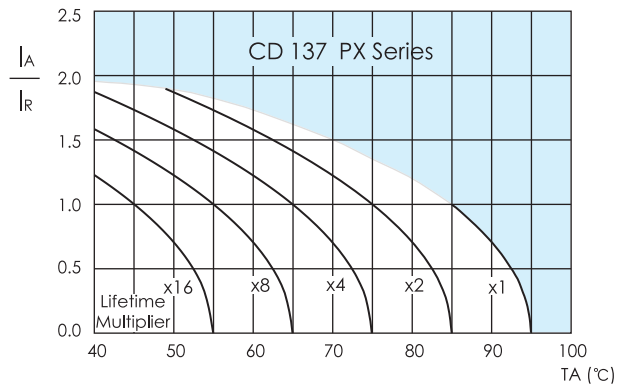
## Ratings for CD 137 PX Series

| U <sub>r</sub><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>ΦD x L    | P/N               |
|---|-------------------|---------------------------|---------------------------|--|-------------------|-------------------|
| (V)                                       | (μF)              | (mΩ)                      | (mΩ)                      | (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          | ECG2WPX182MC115□□ |
|   | 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.

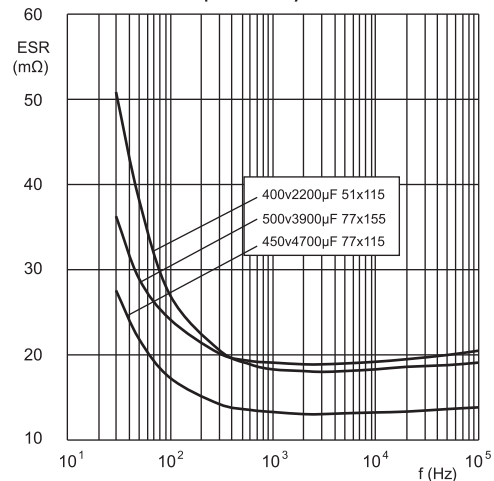
## Lifetime Diagram



I<sub>A</sub> = actual ripple current at 120Hz, I<sub>R</sub> = rated ripple current at 120Hz, 85°C  
Multiplier of Useful Life as a function of ambient temperature and ripple current load

## Typical Curves

### ESR ~ Frequency f at 20°C



### Impedance Z ~ Frequency f at 20°C

