

LSQ シリーズ
SERIES

85°C 3000時間品
Load Life : 85°C 3000 hours

RoHS
compliance



◆規格表 / SPECIFICATIONS

| 項目 Items | 特 性 Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|------------|-------------------------------|---|------------------------------|--|-------------------------|---|----------|------|------|---------------|----|----|---------------|----|------|-----|-----|-----|-----|----|-----|------|-----|-----|-----|--|----|-----|-----|-----|-----|-----|----|-----|-----|------|-----|-----|--|----|-----|-----|-----|-----|-----|-----|------|-----|------|------|------|--|----|-----|-----|-----|-----|-----|---------|------|------|-----|-----|-----|--|----|------|-----|-----|-----|-----|---------|-----|-----|------|------|------|--|
| カテゴリ温度範囲 Category Temperature Range | -40~+85°C | -25~+85°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 定格電圧範囲 Rated Voltage Range | 10~100Vdc | 160~450Vdc | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 静電容量許容差 Capacitance Tolerance | ±20% (20°C, 120Hz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 漏れ電流 Leakage Current (MAX) | I=0.02CV又は5mAいずれか小なる値以下 (定格電圧印加5分後) I=0.02CV or 5mA whichever is smaller. (After 5 minutes application of rated voltage) I=漏れ電流(μA) Leakage Current C=静電容量(μF) Capacitance V=定格電圧(Vdc) Rated Voltage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 損失角の正接 (tanδ) Dissipation Factor (MAX) | <table border="1"> <thead> <tr> <th>Vdc \ φD</th> <th>36</th> <th>51</th> <th>64</th> <th>77</th> <th>90</th> <th>Vdc \ φD</th> <th>36</th> <th>51</th> <th>64</th> <th>77</th> <th>90</th> <th>(20°C, 120Hz)</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>0.75</td> <td>1.0</td> <td>1.3</td> <td>1.5</td> <td>1.5</td> <td>63</td> <td>0.2</td> <td>0.25</td> <td>0.3</td> <td>0.4</td> <td>0.4</td> <td></td> </tr> <tr> <td>16</td> <td>0.6</td> <td>0.7</td> <td>0.8</td> <td>1.0</td> <td>1.0</td> <td>80</td> <td>0.2</td> <td>0.2</td> <td>0.25</td> <td>0.3</td> <td>0.3</td> <td></td> </tr> <tr> <td>25</td> <td>0.4</td> <td>0.5</td> <td>0.7</td> <td>0.8</td> <td>0.8</td> <td>100</td> <td>0.15</td> <td>0.2</td> <td>0.25</td> <td>0.25</td> <td>0.25</td> <td></td> </tr> <tr> <td>35</td> <td>0.3</td> <td>0.5</td> <td>0.6</td> <td>0.7</td> <td>0.7</td> <td>160~250</td> <td>0.15</td> <td>0.15</td> <td>0.2</td> <td>0.2</td> <td>0.2</td> <td></td> </tr> <tr> <td>50</td> <td>0.25</td> <td>0.3</td> <td>0.5</td> <td>0.6</td> <td>0.6</td> <td>350~450</td> <td>0.2</td> <td>0.2</td> <td>0.25</td> <td>0.25</td> <td>0.25</td> <td></td> </tr> </tbody> </table> | | Vdc \ φD | 36 | 51 | 64 | 77 | 90 | Vdc \ φD | 36 | 51 | 64 | 77 | 90 | (20°C, 120Hz) | 10 | 0.75 | 1.0 | 1.3 | 1.5 | 1.5 | 63 | 0.2 | 0.25 | 0.3 | 0.4 | 0.4 | | 16 | 0.6 | 0.7 | 0.8 | 1.0 | 1.0 | 80 | 0.2 | 0.2 | 0.25 | 0.3 | 0.3 | | 25 | 0.4 | 0.5 | 0.7 | 0.8 | 0.8 | 100 | 0.15 | 0.2 | 0.25 | 0.25 | 0.25 | | 35 | 0.3 | 0.5 | 0.6 | 0.7 | 0.7 | 160~250 | 0.15 | 0.15 | 0.2 | 0.2 | 0.2 | | 50 | 0.25 | 0.3 | 0.5 | 0.6 | 0.6 | 350~450 | 0.2 | 0.2 | 0.25 | 0.25 | 0.25 | |
| Vdc \ φD | 36 | 51 | 64 | 77 | 90 | Vdc \ φD | 36 | 51 | 64 | 77 | 90 | (20°C, 120Hz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 0.75 | 1.0 | 1.3 | 1.5 | 1.5 | 63 | 0.2 | 0.25 | 0.3 | 0.4 | 0.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | 0.6 | 0.7 | 0.8 | 1.0 | 1.0 | 80 | 0.2 | 0.2 | 0.25 | 0.3 | 0.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 0.4 | 0.5 | 0.7 | 0.8 | 0.8 | 100 | 0.15 | 0.2 | 0.25 | 0.25 | 0.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | 0.3 | 0.5 | 0.6 | 0.7 | 0.7 | 160~250 | 0.15 | 0.15 | 0.2 | 0.2 | 0.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | 0.25 | 0.3 | 0.5 | 0.6 | 0.6 | 350~450 | 0.2 | 0.2 | 0.25 | 0.25 | 0.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 耐 久 性 Endurance | <p>85°C中で3000時間定格電圧(リップル重畳)印加後、下記項目を満足すること。 After applying rated voltage with rated ripple current for 3000 hours at 85°C, the capacitors shall meet the following requirements.</p> <table border="1"> <tr> <td>静電容量変化率 Capacitance Change</td> <td>初期値の±15%以内 Within ±15% of the initial value.</td> </tr> <tr> <td>損失角の正接 Dissipation Factor</td> <td>規格値の175%以下 Not more than 175% of the specified value.</td> </tr> <tr> <td>漏れ電流 Leakage Current</td> <td>規格値以下 Not more than the specified value.</td> </tr> </table> | | 静電容量変化率 Capacitance Change | 初期値の±15%以内 Within ±15% of the initial value. | 損失角の正接 Dissipation Factor | 規格値の175%以下 Not more than 175% of the specified value. | 漏れ電流 Leakage Current | 規格値以下 Not more than the specified value. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 静電容量変化率 Capacitance Change | 初期値の±15%以内 Within ±15% of the initial value. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 損失角の正接 Dissipation Factor | 規格値の175%以下 Not more than 175% of the specified value. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 漏れ電流 Leakage Current | 規格値以下 Not more than the specified value. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 高温無負荷特性 Shelf Life | <p>85°C中で500時間無負荷放置した後、JIS C 5101-4 4.1項の電圧処理を行い下記を満足すること。 After storage for 500 hours with no voltage applied at 85°C, the capacitors shall be subjected to the voltage treatment in JIS C 5101-4 item 4.1 and shall be meet the following requirements.</p> <table border="1"> <tr> <td>静電容量変化率 Capacitance Change</td> <td>初期値の±15%以内 Within ±15% of the initial value.</td> </tr> <tr> <td>損失角の正接 Dissipation Factor</td> <td>規格値の150%以下 Not more than 150% of the specified value.</td> </tr> <tr> <td>漏れ電流 Leakage Current</td> <td>規格値以下 Not more than the specified value.</td> </tr> </table> | | 静電容量変化率 Capacitance Change | 初期値の±15%以内 Within ±15% of the initial value. | 損失角の正接 Dissipation Factor | 規格値の150%以下 Not more than 150% of the specified value. | 漏れ電流 Leakage Current | 規格値以下 Not more than the specified value. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 静電容量変化率 Capacitance Change | 初期値の±15%以内 Within ±15% of the initial value. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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◆リップル電流補正係数 / MULTIPLIER FOR RIPPLE CURRENT

| 周波数(Hz) Frequency | 60(50) | 120(100) | 300 | 500 | 1k | 10k≤ |
|-------------------|--------|----------|------|------|------|------|
| 10~50Vdc | 0.80 | 1.00 | 1.03 | 1.04 | 1.05 | 1.08 |
| 63~100Vdc | 0.80 | 1.00 | 1.04 | 1.05 | 1.07 | 1.10 |
| 160~450Vdc | 0.80 | 1.00 | 1.06 | 1.10 | 1.13 | 1.18 |

◆呼称方法 / PART NUMBER

LSQ M D×L
 定格電圧 シリーズ名 静電容量 静電容量許容差 副記号 バンド記号 ケースサイズ
 Rated Voltage Series Capacitance Capacitance Tolerance Option Clamp Code Case Size

◆寸法図 / DIMENSIONS

| | φD | W1 | W2 | W3 | W4 | W5 | F |
|--------|------|------|------|-----|-----|------|------|
| I type | 36 | 24.0 | 30.0 | 3.5 | 7.0 | 10 | 12.7 |
| | 51 | 34.0 | 40.0 | 3.5 | 6.0 | 12 | 21.8 |
| | 64 | 40.0 | 45.0 | 4.5 | 7.0 | 12 | 28.2 |
| | 77 | 47.0 | 53.0 | 4.5 | 6.0 | 12 | 31.4 |
| Y type | 90 | 54.0 | 60.0 | 4.5 | 6.0 | 14 | 31.4 |
| | 51 | 32.5 | 37.5 | 4.5 | 6.0 | 12 | 21.8 |
| | 64 | 38.0 | 43.0 | 4.5 | 8.0 | 14 | 28.2 |
| | 77 | 44.5 | 49.0 | 4.5 | 7.0 | 14 | 31.4 |
| 90 | 50.8 | 56.0 | 4.5 | 8.0 | 16 | 31.4 | |

◆標準品一覧表 / STANDARD SIZE

| Cap(μF) \ Vdc | 10 | | 16 | | 25 | | 35 | | 50 | | 63 | | 80 | | |
|---------------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|-------|--------|-------|-----|
| 3300 | | | | | | | | | | | | | 36×50 | 2.5 | |
| 3900 | | | | | | | | | | | | | 36×50 | 2.6 | |
| 4700 | | | | | | | | | | | | | 36×50 | 2.8 | |
| 5600 | | | | | | | | | | | | 36×50 | 3.0 | 36×63 | 2.9 |
| 6800 | | | | | | | | | 36×50 | 3.3 | 36×50 | 3.2 | 36×83 | 3.7 | |
| 8200 | | | | | | | | | 36×50 | 3.7 | 36×63 | 3.8 | 36×83 | 4.2 | |
| 10000 | | | | | | | 36×50 | 3.6 | 36×50 | 4.3 | 36×83 | 4.1 | 36×98 | 5.0 | |
| 12000 | | | | | | | 36×50 | 3.7 | 36×63 | 5.3 | 36×83 | 4.4 | 36×118 | 5.4 | |
| 15000 | | | | | | | 36×50 | 4.0 | 36×83 | 5.5 | 36×98 | 5.5 | 51×83 | 7.7 | |
| 18000 | | | | | 36×50 | 5.0 | 36×63 | 4.7 | 36×83 | 5.7 | 36×118 | 6.2 | 51×83 | 7.8 | |
| 22000 | | | | | 36×63 | 5.4 | 36×83 | 5.6 | 36×98 | 6.1 | 51×83 | 7.1 | 51×83 | 8.0 | |
| 27000 | | | 36×50 | 5.1 | 36×83 | 5.8 | 36×83 | 6.2 | 36×118 | 6.7 | 51×83 | 7.4 | 51×98 | 8.7 | |
| 33000 | | | 36×63 | 5.5 | 36×83 | 6.0 | 36×83 | 6.3 | 51×83 | 7.1 | 51×98 | 8.8 | 51×118 | 10.5 | |
| 39000 | 36×50 | 5.3 | 36×83 | 7.0 | 36×83 | 6.7 | 36×98 | 7.6 | 51×83 | 7.4 | 51×118 | 10.0 | 64×99 | 12.1 | |
| 47000 | 36×63 | 6.0 | 36×83 | 7.3 | 36×98 | 8.0 | 36×118 | 8.7 | 51×98 | 8.7 | 64×99 | 11.9 | 64×99 | 14.4 | |
| 56000 | 36×83 | 6.3 | 36×98 | 7.6 | 36×118 | 8.4 | 51×83 | 10.0 | 51×98 | 9.8 | 64×99 | 12.6 | 64×119 | 15.0 | |
| 68000 | 36×83 | 7.9 | 36×98 | 10.3 | 51×83 | 9.3 | 51×83 | 10.8 | 51×118 | 12.0 | 64×119 | 15.0 | 64×139 | 16.8 | |
| 82000 | 36×83 | 8.4 | 36×118 | 10.5 | 51×83 | 10.0 | 51×98 | 12.0 | 64×99 | 12.3 | 77×101 | 16.4 | 77×121 | 19.4 | |
| 100000 | 36×118 | 9.3 | 51×83 | 10.9 | 51×98 | 12.0 | 51×118 | 13.6 | 64×119 | 14.2 | 77×121 | 18.9 | 77×141 | 21.5 | |
| 120000 | 51×83 | 10.0 | 51×98 | 11.1 | 51×118 | 12.9 | 64×99 | 13.8 | 64×119 | 16.0 | 77×141 | 21.6 | 90×141 | 22.3 | |
| 150000 | 51×83 | 11.0 | 51×98 | 12.6 | 64×99 | 15.3 | 64×99 | 14.6 | 77×121 | 18.6 | 90×141 | 26.0 | | | |
| 180000 | 51×98 | 12.1 | 51×118 | 13.2 | 64×99 | 15.5 | 64×119 | 16.7 | 77×141 | 19.5 | | | | | |
| 220000 | 51×98 | 14.0 | 64×99 | 14.7 | 64×119 | 18.0 | 77×101 | 17.4 | 90×141 | 23.3 | | | | | |
| 270000 | 51×118 | 14.2 | 64×119 | 15.4 | 77×101 | 18.8 | 77×141 | 23.1 | 90×141 | 24.8 | | | | | |
| 330000 | 64×99 | 17.3 | 64×139 | 18.3 | 77×121 | 23.2 | 77×151 | 25.9 | | | | | | | |
| 390000 | 64×119 | 18.0 | 77×121 | 19.0 | 77×141 | 23.5 | 90×141 | 26.5 | | | | | | | |
| 470000 | 64×139 | 19.3 | 77×141 | 22.0 | 90×141 | 24.7 | 90×151 | 28.3 | | | | | | | |
| 560000 | 77×121 | 20.1 | 77×151 | 23.0 | 90×141 | 26.2 | | | | | | | | | |
| 680000 | 77×141 | 24.0 | | | | | | | | | | | | | |

| Cap(μF) \ Vdc | 100 | | 160 | | 200 | | 250 | | 350 | | 400 | | 450 | |
|---------------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|
| 270 | | | | | | | | | | | 36×50 | 1.3 | 36×50 | 1.6 |
| 330 | | | | | | | | | | | 36×50 | 1.7 | 36×63 | 1.8 |
| 390 | | | | | | | | | 36×50 | 1.9 | 36×63 | 1.8 | 36×83 | 2.2 |
| 470 | | | | | | | 36×50 | 1.6 | 36×63 | 2.1 | 36×83 | 2.3 | 36×83 | 2.4 |
| 560 | | | | | | | 36×50 | 1.6 | 36×83 | 2.4 | 36×83 | 2.7 | 36×98 | 2.8 |
| 680 | | | | | 36×50 | 1.6 | 36×50 | 1.7 | 36×83 | 2.9 | 36×98 | 2.9 | 36×118 | 3.1 |
| 820 | | | | | 36×50 | 1.7 | 36×63 | 1.8 | 36×98 | 3.4 | 36×98 | 3.4 | 51×83 | 3.6 |
| 1000 | | | | | 36×63 | 2.2 | 36×83 | 2.4 | 36×98 | 3.8 | 36×118 | 3.9 | 51×83 | 4.0 |
| 1200 | | | 36×50 | 2.3 | 36×63 | 2.3 | 36×83 | 2.4 | 36×118 | 4.2 | 51×83 | 4.2 | 51×98 | 4.8 |
| 1500 | | | 36×63 | 3.2 | 36×83 | 2.9 | 36×98 | 3.1 | 51×83 | 4.7 | 51×98 | 4.8 | 51×118 | 5.7 |
| 1800 | | | 36×83 | 3.4 | 36×83 | 2.9 | 36×118 | 3.4 | 51×98 | 6.3 | 51×98 | 5.7 | 64×99 | 6.5 |
| 2200 | 36×50 | 2.5 | 36×83 | 3.6 | 36×98 | 3.6 | 51×83 | 3.9 | 51×98 | 6.4 | 51×118 | 7.0 | 64×99 | 7.2 |
| 2700 | 36×50 | 2.7 | 36×98 | 3.8 | 36×118 | 4.0 | 51×83 | 4.0 | 64×99 | 8.8 | 64×99 | 7.9 | 64×119 | 8.7 |
| 3300 | 36×50 | 3.2 | 36×118 | 4.7 | 51×83 | 4.6 | 51×98 | 5.4 | 64×99 | 8.8 | 64×119 | 9.5 | 77×121 | 10.5 |
| 3900 | 36×63 | 3.3 | 51×83 | 5.3 | 51×83 | 4.7 | 51×118 | 6.0 | 64×119 | 10.3 | 77×101 | 10.7 | 77×121 | 12.0 |
| 4700 | 36×83 | 3.5 | 51×83 | 5.6 | 51×98 | 7.1 | 64×99 | 7.3 | 77×101 | 12.0 | 77×121 | 12.8 | 77×141 | 13.3 |
| 5600 | 36×83 | 3.8 | 51×98 | 6.4 | 51×118 | 8.3 | 64×99 | 7.3 | 77×121 | 12.7 | 77×141 | 14.5 | 90×141 | 15.8 |
| 6800 | 36×98 | 4.5 | 51×98 | 7.5 | 64×99 | 9.5 | 64×119 | 8.9 | 77×141 | 16.0 | 77×151 | 17.5 | 90×151 | 18.7 |
| 8200 | 36×118 | 6.0 | 51×118 | 8.1 | 64×99 | 10.0 | 77×101 | 8.9 | 90×141 | 19.0 | 90×141 | 18.0 | | |
| 10000 | 36×118 | 6.3 | 64×99 | 9.9 | 64×119 | 11.1 | 77×121 | 11.8 | 90×141 | 20.0 | 90×151 | 20.5 | | |
| 12000 | 51×83 | 6.6 | 64×119 | 10.8 | 77×101 | 11.6 | 77×141 | 13.1 | | | | | | |
| 15000 | 51×83 | 8.5 | 77×101 | 12.7 | 77×121 | 12.9 | 90×141 | 16.5 | | | | | | |
| 18000 | 51×98 | 8.9 | 77×121 | 14.1 | 77×141 | 15.2 | | | | | | | | |
| 22000 | 51×118 | 10.2 | 77×141 | 16.6 | 90×141 | 15.6 | | | | | | | | |
| 27000 | 64×99 | 11.0 | 90×141 | 17.7 | | | | | | | | | | |
| 33000 | 64×119 | 11.7 | 90×141 | 18.9 | | | | | | | | | | |
| 39000 | 77×101 | 12.5 | | | | | | | | | | | | |
| 47000 | 77×121 | 14.5 | | | | | | | | | | | | |
| 56000 | 77×141 | 16.2 | | | | | | | | | | | | |
| 68000 | 77×151 | 18.3 | | | | | | | | | | | | |
| 82000 | 90×141 | 20.1 | | | | | | | | | | | | |
| 100000 | 90×141 | 21.0 | | | | | | | | | | | | |

↑ リプル電流 Ripple Current (A r.m.s./120Hz, 85°C)
↑ ケースサイズ Case Size φD×L(mm)

◆ネジの締め付けトルクと許容電流値 / Tightening torque of bolt and Permissible current of terminal

| 取り付けバンドネジ Clamp Bolt | 推奨締め付けトルク Recommended Tightening torque |
|-------------------------|--|
| M3 | 0.6 [N·m] |
| M4 | 1.3 [N·m] |

| 端子 Terminal | 推奨締め付けトルク(許容値) Recommended Tightening torque (Permissible Range) | 端子許容電流 Permissible Current of Terminal |
|----------------|--|--|
| M5 | 2.2(1.5~3.2) [N·m] | 60 [A r.m.s.] |