

DLC70 Series

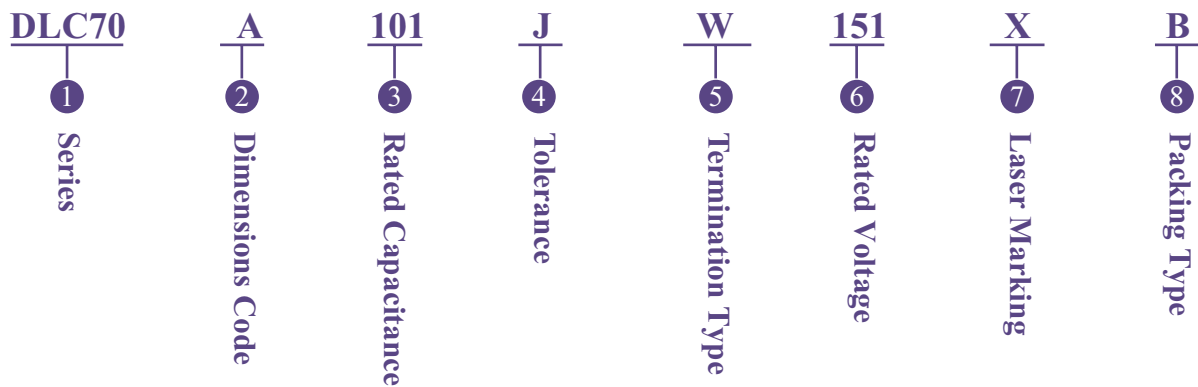
◆Product Features

High Q, High Power, Low ESR/ESL, low Noise, High Self-Resonance,
Ultra-Stable Performance.

◆Typical applications field

Wireless Broadcasting Equipment, Mobile Base Stations, GPS Portables,
Medical (MRI coils), Radar.

◆Part Numbering



① **DLC70 Series – High Q,High Power Type** (Temperature coefficient: $0 \pm 30\text{ppm}/^\circ\text{C}$)

② Dimensions Code

unit:inch(millimeter)

| | 70A | 70B | 70C | 70D | 70E |
|-----------|--|--|--|---|--|
| Length | 0.055 +.015~- .010 (1.4 +0.38~ -0.25) | 0.110 +.020~- .010 (2.79 +0.51~-0.25) | 0.230 +.020~- .010 (5.84 +0.51~-0.25) | 0.08 ± 0.010 (2.0 +0.25~-0.25) | 0.380 +.015~- .010 (9.65 +0.38~-0.25) |
| width | .055 \pm .010 (1.4 \pm 0.25) | .110 \pm .010 (2.79 \pm 0.25) | .250 \pm .015 (6.35 \pm 0.38) | .05 \pm .010 (1.2 \pm 0.25) | .380 \pm .010 (9.65 \pm 0.25) |
| Thickness | .057(1.45)max | .10(2.6)max | .165(4.19)max | .057(1.45)max | 0.177(4.5)max |

③ Rated Capacitance

Capacitance is less than 10F; for example: 1R0=1.0pF, R denote point.

Capacitance is not less than 10F; for example: 101=100pF, The third number is the power of 10.

④ Tolerance

| Code | A | B | C | D | F | G | J | K | M |
|-----------|---------|--------|---------|--------|-----|-----|-----|------|------|
| Tolerance | ±0.05pF | ±0.1pF | ±0.25pF | ±0.5pF | ±1% | ±2% | ±5% | ±10% | ±20% |

⑤ Termination Type

| Code | W | P | C | MS | AR | RR | AW | RW |
|------|---------------------------------|---|---------------------|------------|-----------------|------------------|---------------|----------------|
| Type | Nickel, Plated 100% Sn(RoHS) | Non-magnetic Copper Plated 100% Sn(RoHS) | Palladium Silver | Microstrip | Axial Ribbon | Radial Ribbon | Axial Wire | Radial wire |

| Code | MN | AN | FN | BN | RN |
|------|-----------------------|-------------------------|--------------------------|-----------------------|------------------------|
| Type | Non-mag Microstrip | Non-mag Axial Ribbon | Non-mag Radial Ribbon | Non-mag Axial Wire | Non-mag Radial Wire |

⑥ Rated voltage

| Code | Rated Voltage | Code | Rated Voltage |
|------|---------------|------|---------------|
| 500 | 50V | 102 | 1000V |
| 101 | 100V | 152 | 1500V |
| 151 | 150V | 202 | 2000V |
| 201 | 200V | 252 | 2500V |
| 301 | 300V | 362 | 3600V |
| 501 | 500V | | |

⑦ Laser Marking

X denote Marking; N denote No-Marking.

Capacitance is less than 10pF; for example: The marking of 1.0pF is 1R0.

Capacitance is not less than 10pF; for example: The marking of 100pF is 101.

⑧ Packaging Type

| | 70A | 70B | 70C | 70D | 70E |
|---------------------------|----------------------|-----|-----|-----|-----|
| T:Tape carrier packaging | √ | √ | √ | √ | |
| B:Bulk packaging in a bag | √ | √ | √ | √ | √ |
| C:Gridiron packaging | | | √ | √ | √ |
| I:Special packaging | Consult with DALICAP | | | | |

Quantity per Reel: 70A: 500,1000,2000,3000pcs/reel; 70B: 500,1000,2000pcs/reel;

◆ Performance Requirements

DLC70 Series Capacitors are designed and manufactured to meet the requirements of MIL-C-55681 and MIL-C-123.

◆ All of Dalicap DLC70 Series products are in compliance with RoHS instruction.

DLC70A Series

◆ Product Features

High Q, High Power, Low ESR/ESL, low Noise, High Self-Resonance,
Ultra- Stable Performance.



◆ DLC70A Series Rated Capacitance Table

| Cap.pF | Code | Tol. | Rated WVDC | Cap.pF | Code | Tol. | Rated WVDC | Cap.pF | Code | Tol. | Rated WVDC |
|--------|------|---------|---------------------|--------|------|---------|---------------------|--------|------|-------------------|---------------------|
| 0.5 | 0R5 | A,B,C,D | 150V Code 151 | 3.3 | 3R3 | A,B,C,D | 150V Code 151 | 24 | 240 | F,G, J,K, M | 150V Code 151 |
| 0.6 | 0R6 | | | 3.6 | 3R6 | | | 27 | 270 | | |
| 0.7 | 0R7 | | | 3.9 | 3R9 | | | 30 | 300 | | |
| 0.8 | 0R8 | | | 4.3 | 4R3 | | | 33 | 330 | | |
| 0.9 | 0R9 | | | 4.7 | 4R7 | | | 36 | 360 | | |
| 1.0 | 1R0 | | | 5.1 | 5R1 | | | 39 | 390 | | |
| 1.1 | 1R1 | | | 5.6 | 5R6 | | | 43 | 430 | | |
| 1.2 | 1R2 | | | 6.2 | 6R2 | | | 47 | 470 | | |
| 1.3 | 1R3 | | | 6.8 | 6R8 | | | 51 | 510 | | |
| 1.4 | 1R4 | | | 7.5 | 7R5 | 56 | | 560 | | | |
| 1.5 | 1R5 | | | 8.2 | 8R2 | 62 | | 620 | | | |
| 1.6 | 1R6 | | | 9.1 | 9R1 | 68 | | 680 | | | |
| 1.7 | 1R7 | | | 10 | 100 | 75 | | 750 | | | |
| 1.8 | 1R8 | | | 11 | 110 | 82 | | 820 | | | |
| 1.9 | 1R9 | | | 12 | 120 | 91 | | 910 | | | |
| 2.0 | 2R0 | | | 13 | 130 | 100 | | 101 | | | |
| 2.1 | 2R1 | | | 15 | 150 | 110 | | 111 | | | |
| 2.2 | 2R2 | | | 16 | 160 | 120 | | 121 | | | |
| 2.4 | 2R4 | | | 18 | 180 | 130 | | 131 | | | |
| 2.7 | 2R7 | 20 | 200 | 150 | 151 | | | | | | |
| 3.0 | 3R0 | 22 | 220 | | | | | | | | |

Remark: special capacitance, tolerances and WVDC are available, consult with DALICAP.

◆ DLC70A Chip Dimensions

unit:inch(millimeter)

| | Length | width | Thickness |
|---------------------------|---------------------------------------|-----------------------------|---------------|
| DLC70A Chip Dimensions | 0.055+.015~-0.010 (1.4+0.38~-0.25) | .055 ± .010 (1.4 ± 0.25) | .057(1.45)max |

◆ Performance

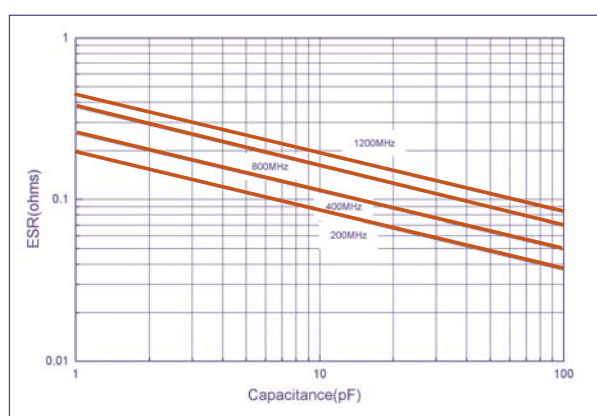
| Item | Specifications |
|--------------------------------------|--|
| Quality Factor (Q) | greater than 10,000 at 1 MHz |
| Insulation Resistance (IR) | 0.1 pF to 100 pF: 10 ⁶ Megohms min. @ +25°C at rated WVDC. 10 ⁵ Megohms min. @ +125°C at rated WVDC. |
| Rated Voltage | See Rated Voltage Table |
| Dielectric Withstanding Voltage(DWV) | 250% of rated Voltage for 5 seconds. |
| Operating Temperature Range | -55°C to +125°C |
| Temperature Coefficient (TC) | 0 ± 30ppm/°C |
| Capacitance Drift | ± 0.02% or ± 0.02pF, whichever is greater. |
| Piezoelectric Effects | None |
| Termination Type | See Termination Type Table |

◆ Environmental Tests

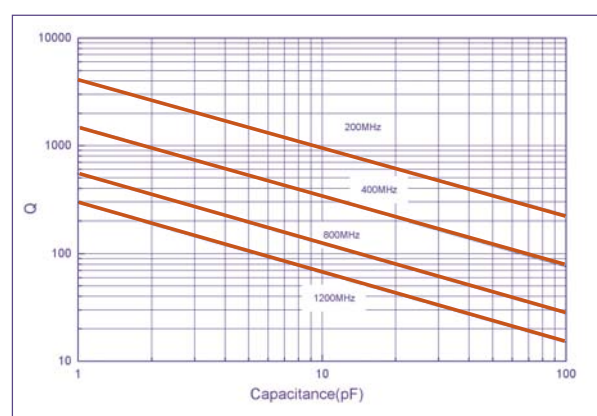
| Item | Specifications | Method |
|-------------------------|---|---|
| Thermal shock | DWV: the initial value IR: Shall be not less than 30% the initial value Capacitance change: | MIL-STD-202, Method 107, Condition A. At the maximum rated temperature(-55°C and 125°C) stay 30 minutes,The time of removing shall be not more than 3 minutes. Perform the five cycles. |
| Moisture resistance | no more than 0.5% or 0.5pF. | MIL-STD-202, Method 106. |
| Humidity (steady state) | DWV: the initial value IR: the initial value Capacitance change: no more than 0.3% or 0.3pF. | MIL-STD-202, Method 103, Condition A, with 1.5 Volts D.C. applied while subjected to an environment of 85°Cwith 85% relative humidity for 240 hours min. |
| Life | IR: Shall be not less than 30% the initial value Capacitance change: no more than 0.2% | MIL-STD-202, Method 108, for 2000 hours, at 125°C. 200% Rated voltage D.C. applie |

◆DLC70A Performance Curve

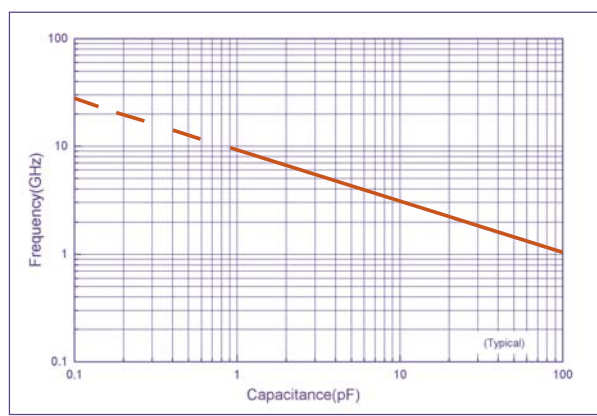
ESR VS Capacitance



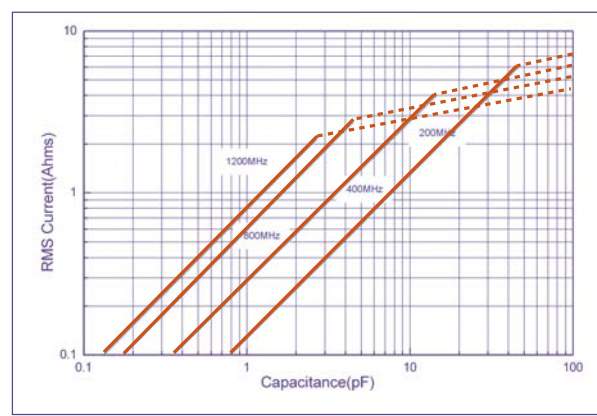
Q VS Capacitance



Series resonance VS Capacitance



Current rating VS Capacitance



DLC70B Series

◆Product Features

High Q, High Power, Low ESR/ESL, low Noise, High Self-Resonance,
 Ultra- Stable Performance.



◆DLC70B Series Rated Capacitance Table

| Cap.pF | Code | Tol. | WVDC V | Cap.pF | Code | Tol. | WVDC V | Cap.pF | Code | Tol. | WVDC V | Cap.pF | Code | Tol. | WVDC V |
|--------|------|---------------------|---|--------|------|---------------------|---|--------|------|---------------------------|---|--------|------|---------------------------|--------------------|
| 0.5 | 0R5 | A, B, C, D | 500 Code 501 or 1500 Code 152 | 3.6 | 3R6 | A, B, C, D | 500 Code 501 or 1500 Code 152 | 30 | 300 | F, G, J, K, M | 500 Code 501 or 1500 Code 152 | 220 | 221 | F, G, J, K, M | 200 Code 201 |
| 0.6 | 0R6 | | | 3.9 | 3R9 | | | 33 | 330 | | | 240 | 241 | | |
| 0.7 | 0R7 | | | 4.3 | 4R3 | | | 36 | 360 | | | 270 | 271 | | |
| 0.8 | 0R8 | | | 4.7 | 4R7 | | | 39 | 390 | | | 300 | 301 | | |
| 0.9 | 0R9 | | | 5.1 | 5R1 | | | 43 | 430 | | | 330 | 331 | | |
| 1.0 | 1R0 | | | 5.6 | 5R6 | | | 47 | 470 | | | 360 | 361 | | |
| 1.1 | 1R1 | | | 6.2 | 6R2 | | | 51 | 510 | | | 390 | 391 | | |
| 1.2 | 1R2 | | | 6.8 | 6R8 | | | 56 | 560 | | | 430 | 431 | | |
| 1.3 | 1R3 | | | 7.5 | 7R5 | | | 62 | 620 | | | 470 | 471 | | |
| 1.4 | 1R4 | | | 8.2 | 8R2 | | | 68 | 680 | | | 510 | 511 | | |
| 1.5 | 1R5 | | | 9.1 | 9R1 | 75 | | 750 | 560 | | 561 | | | | |
| 1.6 | 1R6 | | | 10 | 100 | 82 | | 820 | 620 | | 621 | | | | |
| 1.7 | 1R7 | | | 11 | 110 | 91 | | 910 | 680 | | 681 | | | | |
| 1.8 | 1R8 | | | 12 | 120 | 100 | | 101 | 750 | | 751 | | | | |
| 1.9 | 1R9 | | | 13 | 130 | 110 | | 111 | 820 | | 821 | | | | |
| 2.0 | 2R0 | | | 15 | 150 | 120 | | 121 | 910 | | 911 | | | | |
| 2.1 | 2R1 | | | 16 | 160 | 130 | | 131 | 1000 | | 102 | | | | |
| 2.2 | 2R2 | | | 18 | 180 | 150 | | 151 | 1100 | | 112 | | | | |
| 2.4 | 2R4 | | | 20 | 200 | 160 | | 161 | 1200 | | 122 | | | | |
| 2.7 | 2R7 | | | 22 | 220 | 180 | | 181 | 1500 | | 152 | | | | |
| 3.0 | 3R0 | 24 | 240 | 200 | 201 | 1800 | 182 | | | | | | | | |
| 3.3 | 3R3 | 27 | 270 | | | 2200 | 222 | | | | | | | | |
| | | | | | | | | | | | | | | | 50 Code 500 |

Remark: special capacitance, tolerances and WVDC are available, consult with DALICAP.

◆DLC70B Chip Dimensions

unit:inch(millimeter)

| | Length | width | Thickness |
|---------------------------|--|------------------------------|-------------|
| DLC70B Chip Dimensions | 0.110+0.025~-0.010 (2.79+0.51~ -0.25) | .110 ± .010 (2.79 ± 0.25) | .10(2.6)max |

◆ Performance


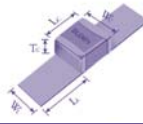
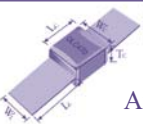
| Item | Specifications |
|--------------------------------------|---|
| Quality Factor (Q) | greater than 10,000 at 1 MHz |
| Insulation Resistance (IR) | 0.5 pF to 470 pF: 10 ⁶ Megohms min. @ +25°C at rated WVDC. 10 ⁵ Megohms min. @ +125°C at rated WVDC. 510 pF to 1000 pF: 10 ⁵ Megohms min. @ +25°C at rated WVDC. 10 ⁴ Megohms min. @ +125°C at rated WVDC. |
| Rated Voltage | See Rated Voltage Table |
| Dielectric Withstanding Voltage(DWV) | 250% of rated Voltage for 5 seconds, rated Voltage ≤ 500V 150% of rated Voltage for 5 seconds, 500V ≤ rated Voltage ≤ 1250V 120% of rated Voltage for 5 seconds, rated Voltage > 1250V |
| Operating Temperature Range | 0.5pF to 330pF ≤ 500V: -55°C to +175°C. Other: -55°C to +125°C. |
| Temperature Coefficient (TC) | 0 ± 30ppm/°C |
| Capacitance Drift | ± 0.02% or ± 0.02pF, whichever is greater. |
| Piezoelectric Effects | None |
| Termination Type | See Termination Type Table |


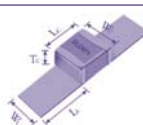
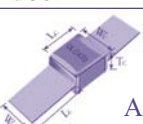
◆ Environmental Tests

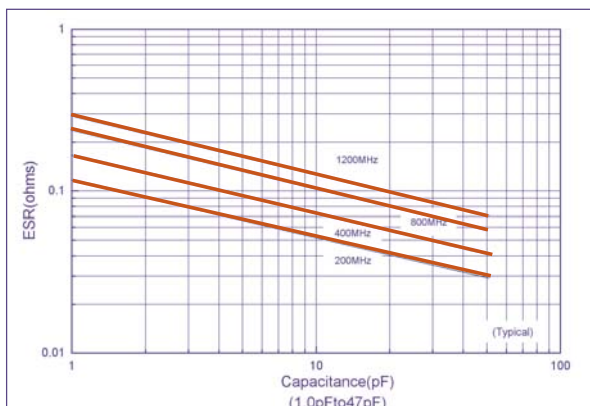
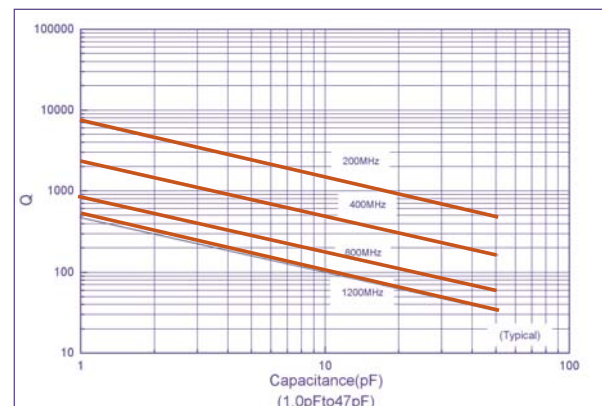
| Item | Specifications | Method |
|-------------------------|---|---|
| Thermal shock | DWV: the initial value IR: Shall be not less than 30% the initial value Capacitance change: no more than 0.5% or 0.5pF. | MIL-STD-202, Method 107, Condition A. At the maximum rated temperature(-55°C and 125°C) stay 30 minutes, The time of removing shall be not more than 3 minutes. Perform the five cycles. |
| Moisture resistance | | MIL-STD-202, Method 106. |
| Humidity (steady state) | DWV: the initial value IR: the initial value Capacitance change: no more than 0.3% or 0.3pF. | MIL-STD-202, Method 103, Condition A, with 1.5 Volts D.C. applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours min. |
| Life | IR: Shall be not less than 30% the initial value Capacitance change: no more than 0.2% | MIL-STD-202, Method 108, for 2000 hours, at 125°C. Rated voltage ≤ 500V: 200% Rated voltage D.C. applied. 500V ≤ Rated voltage ≤ 1250V: 120% Rated voltage D.C. applied. Rated voltage > 1250V: 100% Rated voltage D.C. applied. |

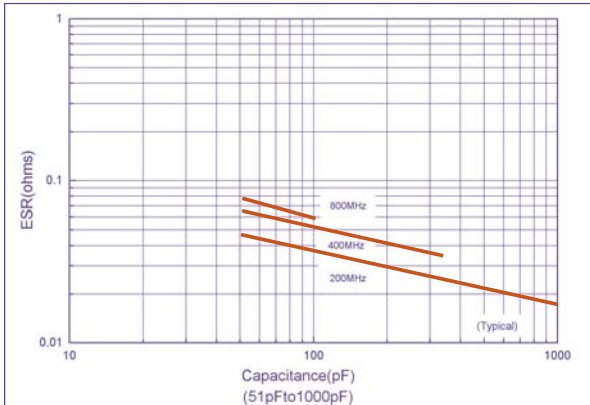
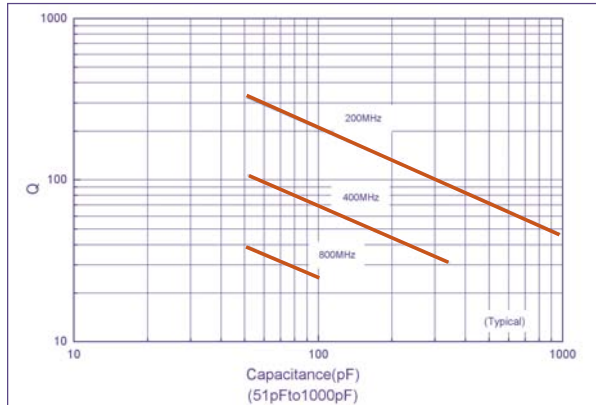
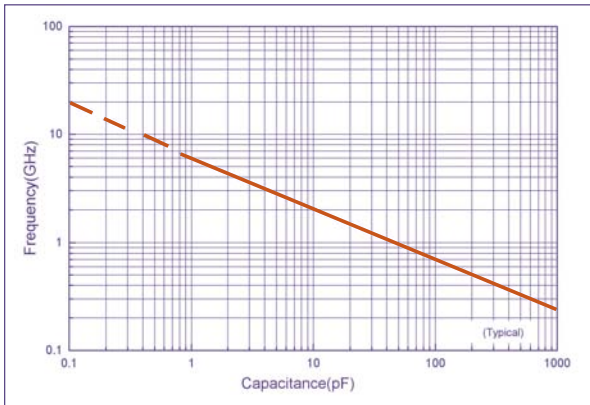
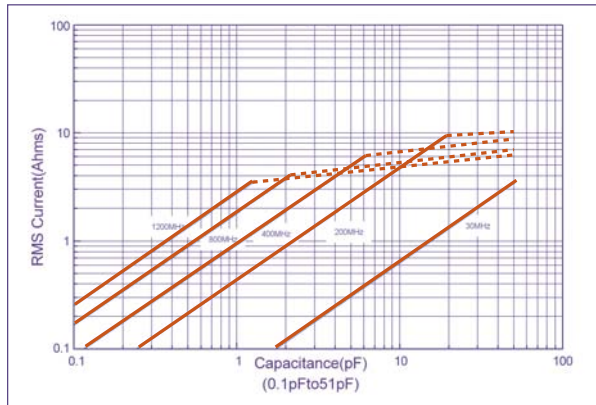
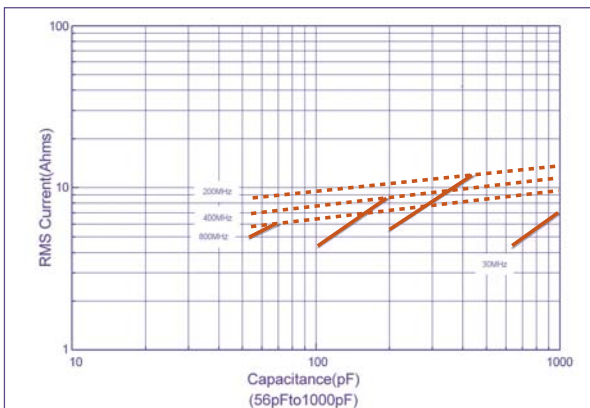
◆DLC70B Lead Type and Dimensions

unit:inch(millimeter)

| Series | Term. Code | Type / Outlines | Capacitor Dimensions | | | Overlap and Lead Dimensions | | | | Overlap and Lead Material |
|--------|------------|--|---|--------------------------------------|-----------------------------|-----------------------------|--------------------------|-------------------------|-----------------------------|---|
| | | | Length (L _c) | Width (W _c) | Thickness (T _c) | Overlap (B) | Length (L _L) | Width (W _L) | Thickness (T _L) | |
| 70B | W |  Chip | .110+.020 ~.010 (2.79+0.51 ~-0.25) | .110 ± .010 (2.79 ±0.25) | .10 (2.54) max | .024 (0.6) max | — | — | — | Nickel, Plated 100% Sn, RoHS Compliant |
| 70B | MS |  Microstrip | .135 ± | .110 ± | .10 (2.54) | — | .250 ± | .093 ± | .008 ± | Silver or Silver-plated |
| 70B | AR |  Axial Ribbon | (3.43 ±0.38) | (2.79 ±0.25) | max | — | 6.35 min | (2.36 ±0.13) | (0.2 ±0.025) | Copper |

| Series | Term. Code | Type / Outlines | Capacitor Dimensions | | | Overlap and Lead Dimensions | | | | Overlap and Lead Material |
|--------|-----------------|--|---|--------------------------------------|-----------------------------|-----------------------------|--------------------------|-------------------------|-----------------------------|---|
| | | | Length (L _c) | Width (W _c) | Thickness (T _c) | Overlap (B) | Length (L _L) | Width (W _L) | Thickness (T _L) | |
| 70B | P (non-mag) |  Chip | .110+.020 ~.010 (2.79+0.51 ~-0.25) | .110 ± .010 (2.79 ±0.25) | .10 (2.54) max | .024 (0.6) max | — | — | — | Copper Plated 100% Sn, Non-Mag, RoHS Compliant |
| 70B | MN (non-mag) |  Microstrip | .135 ± | .110 ± | .10 (2.54) | — | .250 ± | .093 ± | .008 ± | Silver or Silver-plated |
| 70B | AN (non-mag) |  Axial Ribbon | (3.43 ±0.38) | (2.79 ±0.25) | max | — | 6.35 min | (2.36 ±0.13) | (0.2 ±0.025) | Copper |

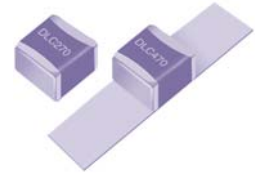
◆DLC70B Performance Curve
ESR VS Capacitance

Q VS Capacitance


◆DLC70B Performance Curve
ESR VS Capacitance

Q VS Capacitance

Series resonance VS Capacitance

Current rating VS Capacitance

Current rating VS Capacitance


DLC70C Series

◆Product Features

High Q, High RF Current/Voltage, High RF Power, Low ESR/ESL, low Noise,
Ultra- Stable Performance.



◆DLC70C Series Rated Capacitance Table

| Cap.pF | Code | Tol. | WVDC V | Cap.pF | Code | Tol. | WVDC V | Cap.pF | Code | Tol. | WVDC V |
|--------|------|-------------------|---------------------|--------|------|-------------------|---------------------|--------|------|-------------------|---------------------|
| 1.0 | 1R0 | B,C,D | 2500 Code 252 | 18 | 180 | F,G, J,K, M | 2500 Code 252 | 330 | 331 | F,G, J,K, M | 1500 Code 152 |
| 1.2 | 1R2 | | | 22 | 220 | | | 390 | 391 | | |
| 1.5 | 1R5 | | | 27 | 270 | | | 470 | 471 | | |
| 1.8 | 1R8 | | | 33 | 330 | | | 560 | 561 | | 1000 Code 102 |
| 2.2 | 2R2 | | | 39 | 390 | | | 680 | 681 | | |
| 2.7 | 2R7 | | | 47 | 470 | | | 820 | 821 | | |
| 3.3 | 3R3 | | | 56 | 560 | | | 1000 | 102 | | |
| 3.9 | 3R9 | | | 68 | 680 | | | 1200 | 122 | | 500 Code 501 |
| 4.7 | 4R7 | | | 82 | 820 | | | 1500 | 152 | | |
| 5.6 | 5R6 | | | 100 | 101 | | | 1800 | 182 | | 300 Code 301 |
| 6.8 | 6R8 | | | 120 | 121 | | | 2200 | 222 | | |
| 8.2 | 8R2 | 150 | 151 | 2700 | 272 | | | | | | |
| 10 | 100 | F,G, J,K, M | | 180 | 181 | | | | | | |
| 12 | 120 | | 220 | 221 | | | | | | | |
| 15 | 150 | | 270 | 271 | | | | | | | |

Remark: special capacitance, tolerances and WVDC are available, consult with DALICAP.

◆DLC70C Chip Dimensions

unit:inch(millimeter)

| | Length | width | Thickness |
|---------------------------|---------------------------------------|--------------------------|---------------|
| DLC70C Chip Dimensions | 0.230+.020~-0.010 5.84+0.51~-0.25) | .250±.015 (6.35±0.38) | .165(4.19)max |

◆ Performance


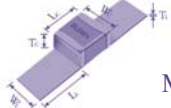
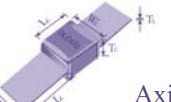
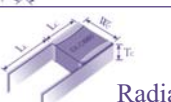
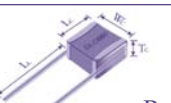
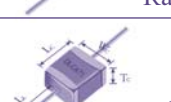
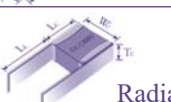
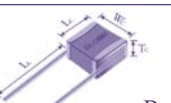
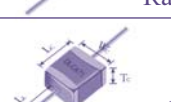
| Item | Specifications |
|---------------------------------------|---|
| Quality Factor (Q) | 1 pF to 1000 pF: greater than 10,000 at 1 MHz. 1100 pF to 2700 pF: greater than 10,000 at 1 KHz. |
| Insulation Resistance (IR) | Test Voltage: 500V 10 ⁵ Megohms min. @ +25°C at rated WVDC. 10 ⁴ Megohms min. @ +125°C at rated WVDC. |
| Rated Voltage | See Rated Voltage Table |
| Dielectric Withstanding Voltage (DWV) | 1 pF to 470 pF: 120% of rated WVDC for 5 secs. 560 pF to 1200 pF: 150% of rated WVDC for 5 secs. 1500 pF to 2700 pF: 250% of rated WVDC for 5 secs. |
| Operating Temperature Range | -55°C to +125°C |
| Temperature Coefficient (TC) | 0 ± 30ppm/°C |
| Capacitance Drift | ± 0.02% or ± 0.02pF, whichever is greater. |
| Piezoelectric Effects | None |
| Termination Type | See Termination Type Table |


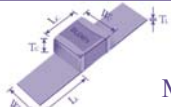
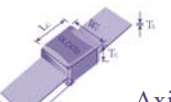

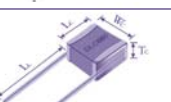
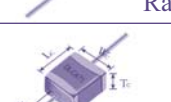
◆ Environmental Tests

| Item | Specifications | Method |
|-------------------------|---|---|
| Thermal shock | DWV: the initial value IR: Shall be not less than 30% the initial value Capacitance change: no more than 0.5% or 0.5pF. | MIL-STD-202, Method 107, Condition A. At the maximum rated temperature(-55°C and 125°C) stay 30 minutes, The time of removing shall be not more than 3 minutes. Perform the five cycles. |
| Moisture resistance | | MIL-STD-202, Method 106. |
| Humidity (steady state) | DWV: the initial value IR: the initial value Capacitance change: no more than 0.3% or 0.3pF. | MIL-STD-202, Method 103, Condition A, with 1.5 Volts D.C. applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours min. |
| Life | IR: Shall be not less than 30% the initial value Capacitance change: no more than 0.2% | MIL-STD-202, Method 108, for 2000 hours, at 125°C. no less than 1500V, 120%Rated voltage D.C.applied; less than 1500V, 150%rated voltage D.C. applied. |

◆DLC70C Lead Type and Dimensions

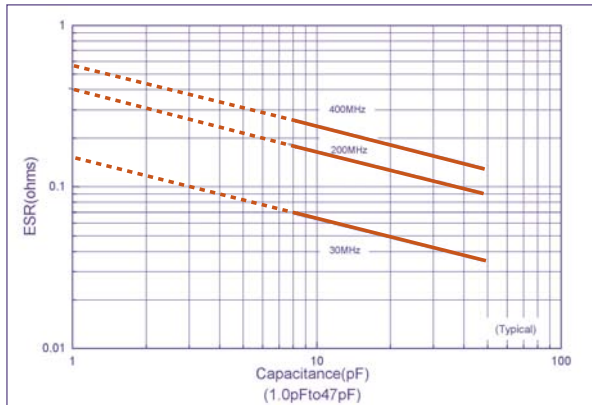
unit:inch(millimeter)

| Series | Term. Code | Type/Outlines | Capacitor Dimensions | | | Overlap and Lead Dimensions | | | | Overlap and Lead Material |
|--------|------------|---|---|-----------------------------------|-----------------------------|-----------------------------|--------------------------|--------------------------------------|--------------------------------------|--|
| | | | Length (L _c) | Width (W _c) | Thickness (T _c) | Overlap (B) | Length (L _l) | Width (W _l) | Thickness (T _l) | |
| 70C | W |  Chip | .230+0.020 ~.010 (5.84+0.51 ~0.25) | .250 ± .015 (6.35 ±0.38) | .165 (4.19) max | .047 (1.20) max | — | — | — | Nickel, Plated 100% Sn, RoHS Compliant |
| 70C | MS |  Microstrip | .245 ± (6.22 ±0.64) | .250 ± (6.35 ±0.38) | .165 (4.19) max | — | .500 (12.7) min | .240 ± .005 (6.10 ±0.13) | .004 ± .001 (0.1 ±0.025) | Silver or Silver- plated Copper |
| 70C | AR |  Axial Ribbon | | | | | | | | |
| 70C | RR |  Radial Ribbon | | | | | | | | |
| 70C | RW |  Radial Wire | | | | | | | | |
| 70C | AW |  Axial Wire | | | | | | | | |
| 70C | RR |  Radial Ribbon | .025 (6.22 ±0.64) | .015 (6.35 ±0.38) | max | — | .394 ±.039 (10±1) | .114 ±.005 (2.9 ±0.13) | .012 ±.001 (0.3 ±0.025) | Silver or Silver- plated Copper |
| 70C | RW |  Radial Wire | 1.0 (25.4) min | Dia.=.031±.004 (0.8±0.1) | | | | | | |
| 70C | AW |  Axial Wire | | | | | | | | |

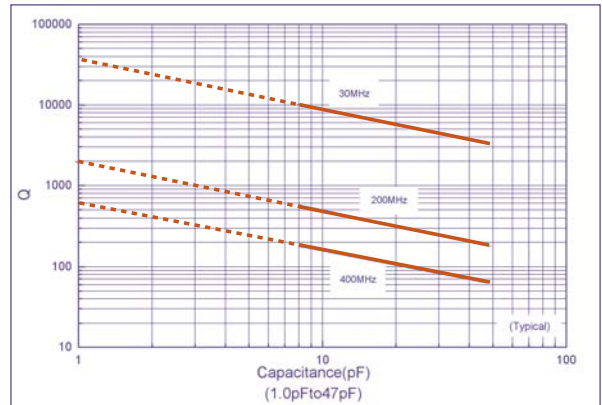
| Series | Term. Code | Type/Outlines | Capacitor Dimensions | | | Overlap and Lead Dimensions | | | | Overlap and Lead Material |
|--------|-----------------|---|---|-----------------------------------|-----------------------------|-----------------------------|--------------------------|--------------------------------------|--------------------------------------|---|
| | | | Length (L _c) | Width (W _c) | Thickness (T _c) | Overlap (B) | Length (L _l) | Width (W _l) | Thickness (T _l) | |
| 70C | P (non-mag) |  Chip | .230+0.020 ~.010 (5.84+0.51 ~0.25) | .250 ± .015 (6.35 ±0.38) | .165 (4.19) max | .047 (1.20) max | — | — | — | Copper Plated 100% Sn, Non-Mag, RoHS Compliant |
| 70C | MN (non-mag) |  Microstrip | .245 ± (6.22 ±0.64) | .250 ± (6.35 ±0.38) | .165 (4.19) max | — | .500 (12.7) min | .240 ± .005 (6.10 ±0.13) | .004 ± .001 (0.1 ±0.025) | Silver or Silver- plated Copper |
| 70C | AN (non-mag) |  Axial Ribbon | | | | | | | | |
| 70C | FN (non-mag) |  Radial Ribbon | | | | | | | | |
| 70C | RN (non-mag) |  Radial Wire | | | | | | | | |
| 70C | BN (non-mag) |  Axial Wire | | | | | | | | |

◆ **DLC70C Performance Curve**

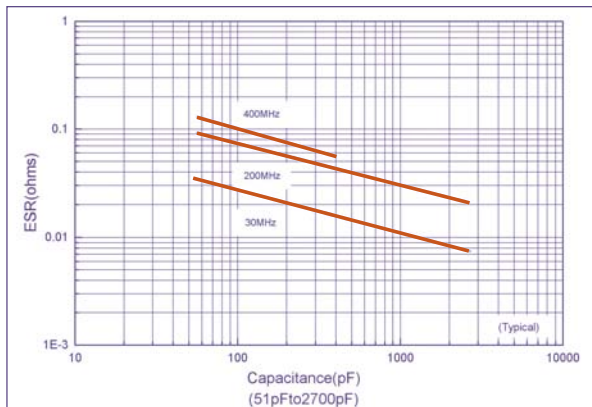
ESR VS Capacitance



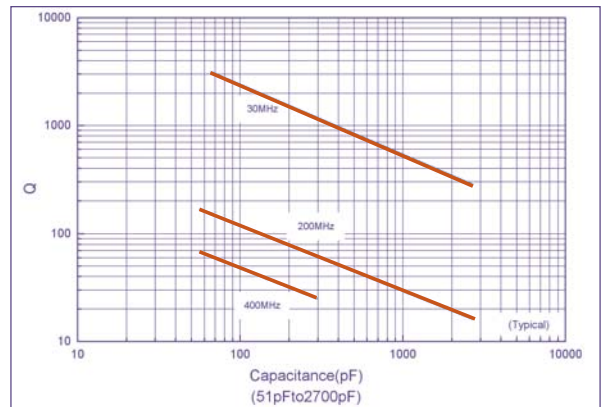
Q VS Capacitance



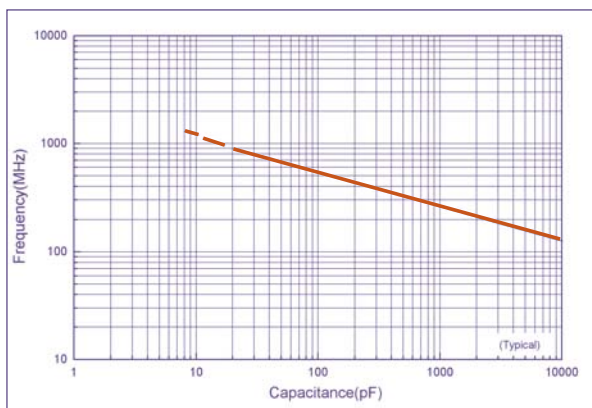
ESR VS Capacitance



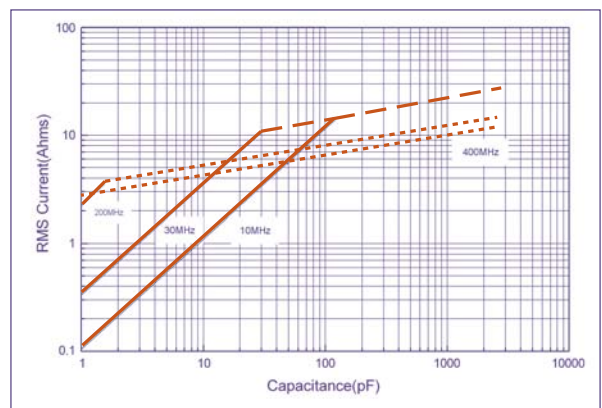
Q VS Capacitance



Series resonance VS Capacitance



Current rating VS Capacitance



DLC70D Series

◆Product Features

High Q, High Power, Low ESR/ESL, low Noise, High Self-Resonance,
 Ultra-Stable Performance.



◆DLC70D Series Rated Capacitance Table

| Cap.pF | Code | Tol. | Rated WVDC | Cap.pF | Code | Tol. | Rated WVDC | Cap.pF | Code | Tol. | Rated WVDC |
|--------|------|-------|---------------------|--------|------|-------|---------------------|--------|------|-------------------|---------------------|
| 0.5 | 0R5 | B,C,D | 200V Code 201 | 3.0 | 3R0 | B,C,D | 200V Code 201 | 20 | 200 | F,G, J,K, M | 200V Code 201 |
| 0.6 | 0R6 | | | 3.3 | 3R3 | | | 22 | 220 | | |
| 0.7 | 0R7 | | | 3.6 | 3R6 | | | 24 | 240 | | |
| 0.8 | 0R8 | | | 3.9 | 3R9 | | | 27 | 270 | | |
| 0.9 | 0R9 | | | 4.3 | 4R3 | | | 30 | 300 | | |
| 1.0 | 1R0 | | | 4.7 | 4R7 | | | 33 | 330 | | |
| 1.1 | 1R1 | | | 5.1 | 5R1 | | | 36 | 360 | | |
| 1.2 | 1R2 | | | 5.6 | 5R6 | | | 39 | 390 | | |
| 1.3 | 1R3 | | | 6.2 | 6R2 | | | 43 | 430 | | |
| 1.4 | 1R4 | | | 6.8 | 6R8 | | | 47 | 470 | | |
| 1.5 | 1R5 | | | 7.5 | 7R5 | 51 | | 510 | | | |
| 1.6 | 1R6 | | | 8.2 | 8R2 | 56 | | 560 | | | |
| 1.7 | 1R7 | | | 9.1 | 9R1 | 62 | | 620 | | | |
| 1.8 | 1R8 | | | 10 | 100 | 68 | | 680 | | | |
| 1.9 | 1R9 | | | 11 | 110 | 75 | | 750 | | | |
| 2.0 | 2R0 | | | 12 | 120 | 82 | | 820 | | | |
| 2.1 | 2R1 | | | 13 | 130 | 91 | | 910 | | | |
| 2.2 | 2R2 | | | 15 | 150 | 100 | | 101 | | | |
| 2.4 | 2R4 | | | 16 | 160 | 120 | | 121 | | | |
| 2.7 | 2R7 | | | 18 | 180 | 150 | | 151 | | | |
| | | | | | | | | | | | 100V Code 101 |

Remark: special capacitance, tolerances and WVDC are available, consult with DALICAP.

◆DLC70D Chip Dimensions

unit:inch(millimeter)

| | Length | width | Thickness |
|---------------------------|-----------------------------|-----------------------------|---------------|
| DLC70D Chip Dimensions | 0.08 ± .010 (2.0 ± 0.25) | .050 ± .010 (1.2 ± 0.25) | .057(1.45)max |

◆ Performance

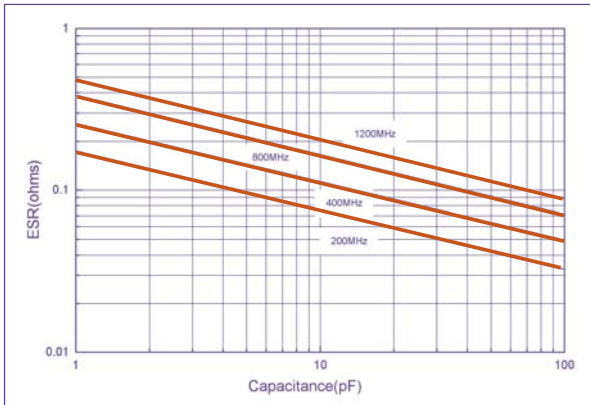
| Item | Specifications |
|--------------------------------------|---|
| Quality Factor (Q) | greater than 10,000 at 1 MHz |
| Insulation Resistance (IR) | 10 ⁶ Megohms min. @ +25°C at rated WVDC. 10 ⁵ Megohms min. @ +125°C at rated WVDC. |
| Rated Voltage | See Rated Voltage Table |
| Dielectric Withstanding Voltage(DWV) | 250% of rated Voltage for 5 seconds. |
| Operating Temperature Range | -55°C to +125C |
| Temperature Coefficient (TC) | +20~+70ppm/°C |
| Capacitance Drift | ± 0.02% or ± 0.02pF, whichever is greater. |
| Piezoelectric Effects | None |
| Termination Type | See Termination Type Table |

◆ Environmental Tests

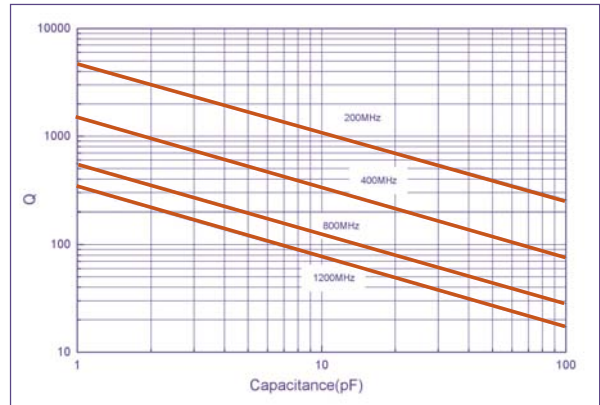
| Item | Specifications | Method |
|-------------------------|---|---|
| Thermal shock | DWV: the initial value IR: Shall be not less than 30% the initial value Capacitance change: no more than 0.5% or 0.5pF. | MIL-STD-202, Method 107, Condition A. At the maximum rated temperature(-55°C and 125°C) stay 30 minutes, The time of removing shall be not more than 3 minutes. Perform the five cycles. |
| Moisture resistance | | MIL-STD-202, Method 106. |
| Humidity (steady state) | DWV: the initial value IR: the initial value Capacitance change: no more than 0.3% or 0.3pF. | MIL-STD-202, Method 103, Condition A, with 1.5 Volts D.C. applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours min. |
| Life | IR: Shall be not less than 30% the initial value Capacitance change: no more than 0.2% | MIL-STD-202, Method 108, for 2000 hours, at 125°C. 200% Rated voltage D.C. applied. |

◆ **DLC70D Performance Curve**

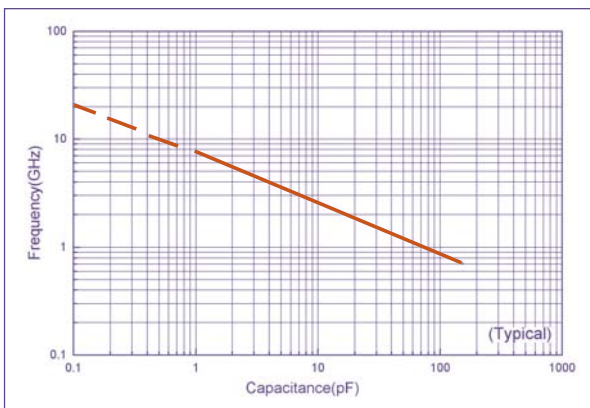
ESR VS Capacitance



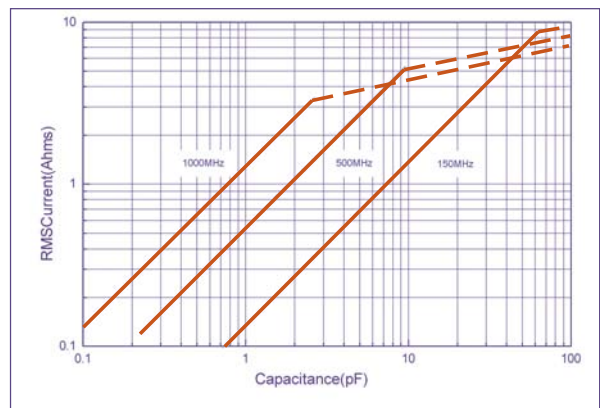
Q VS Capacitance



Series resonance VS Capacitance



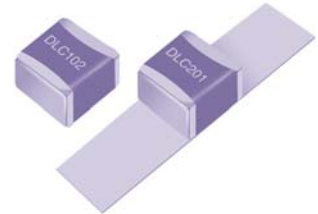
Current rating VS Capacitance



DLC70E Series

◆Product Features

High Q, High RF Current/Voltage, High RF Power, Low ESR/ESL, low Noise,
Ultra-Stable Performance.



◆DLC70E Series Rated Capacitance Table

| Cap.pF | Code | Tol. | Rated WVDC | Cap.pF | Code | Tol. | Rated WVDC | Cap.pF | Code | Tol. | Rated WVDC |
|--------|------|-------------------|--|--------|------|-------------------|--|--------|------|-------------------|---------------------|
| 1.0 | 1R0 | B,C,D | 3600 Code 362 or 7200 Code 722 | 22 | 220 | F,G, J,K, M | 3600 Code 362 or 7200 Code 722 | 470 | 471 | F,G, J,K, M | 2500 Code 252 |
| 1.2 | 1R2 | | | 27 | 270 | | | 560 | 561 | | |
| 1.5 | 1R5 | | | 33 | 330 | | | 680 | 681 | | |
| 1.8 | 1R8 | | | 39 | 390 | | | 820 | 821 | | |
| 2.2 | 2R2 | | | 47 | 470 | | | 1000 | 102 | | |
| 2.7 | 2R7 | | | 56 | 560 | | | 1200 | 122 | | |
| 3.3 | 3R3 | | | 68 | 680 | | | 1500 | 152 | | |
| 3.9 | 3R9 | | | 82 | 820 | | | 1800 | 182 | | |
| 4.7 | 4R7 | | | 100 | 101 | | | 2200 | 222 | | |
| 5.6 | 5R6 | | | 120 | 121 | | | 2700 | 272 | | |
| 6.8 | 6R8 | 150 | 151 | 3300 | 332 | G,J, K,M | 500 Code 501 | | | | |
| 8.2 | 8R2 | 180 | 181 | 4700 | 472 | | | | | | |
| 10 | 100 | 220 | 221 | 5100 | 512 | | | | | | |
| 12 | 120 | F,G, J,K, M | 3600 Code 362 | 270 | 271 | | | | | | |
| 15 | 150 | | | 330 | 331 | | | | | | |
| 18 | 180 | | | 390 | 391 | | | | | | |

Remark: special capacitance, tolerances and WVDC are available, consult with DALICAP.

◆DLC70E Chip Dimensions

unit:inch(millimeter)

| | Length | width | Thickness |
|---------------------------|--|------------------------------|---------------|
| DLC70E Chip Dimensions | 0.380+.015~-0.010 (9.65+0.38~-0.25) | .380 ± .010 (9.65 ± 0.25) | 0.117(4.5)max |

◆Performance


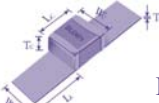
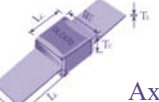

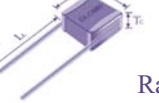

| Item | Specifications |
|---------------------------------------|---|
| Quality Factor (Q) | 1 pF to 1000 pF: greater than 10,000 at 1 MHz. 1100 pF to 5100 pF: greater than 10,000 at 1 KHz. |
| Insulation Resistance (IR) | Test Voltage: 500V 10 ⁵ Megohms min. @ +25°C at rated WVDC. 10 ⁴ Megohms min. @ +125°C at rated WVDC. |
| Rated Voltage | See Rated Voltage Table |
| Dielectric Withstanding Voltage (DWV) | Rated WVDC: 3600V 1 pF to 680 pF: 120% of rated WVDC for 5 secs. 820 pF to 2200 pF: 150% of rated WVDC for 5 secs. 2700 pF to 5100 pF: 250% of rated WVDC for 5 secs. Rated WVDC: 7200V 1 pF to 82 pF: 8000V applied for 5 secs. |
| Operating Temperature Range | -55°C to +125°C |
| Temperature Coefficient (TC) | 0 ± 30ppm/°C |
| Capacitance Drift | ± 0.02% or ± 0.02pF, whichever is greater. |
| Piezoelectric Effects | None |
| Termination Type | See Termination Type Table |


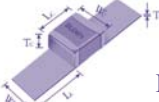
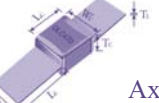

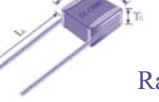

◆Environmental Tests

| Item | Specifications | Method |
|-------------------------|--|---|
| Thermal shock | DWV: the initial value IR: Shall be not less than 30% the initial value Capacitance change: no more than 0.5% or 0.5pF. | MIL-STD-202, Method 107, Condition A. At the maximum rated temperature(-55°C and 125°C) stay 30 minutes, The time of removing shall be not more than 3 minutes. Perform the five cycles. |
| Moisture resistance | | MIL-STD-202, Method 106. |
| Humidity (steady state) | DWV: the initial value IR: the initial value Capacitance change: no more than 0.3% or 0.3pF. | MIL-STD-202, Method 103, Condition A, with 1.5 Volts D.C. applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours min. |
| Life | IR: Shall be not less than 30% the initial value Capacitance change: no more than 0.2% | MIL-STD-202, Method 108, for 2000 hours, at 125°C. Rated voltage ≥ 7200V: 100% Rated voltage D.C. applied. 1500V ≤ Rated voltage < 7200V: 120% Rated voltage D.C. applied. Rated voltage < 1500V: 150% Rated voltage D.C. applied. |

◆DLC70E Lead Type and Dimensions

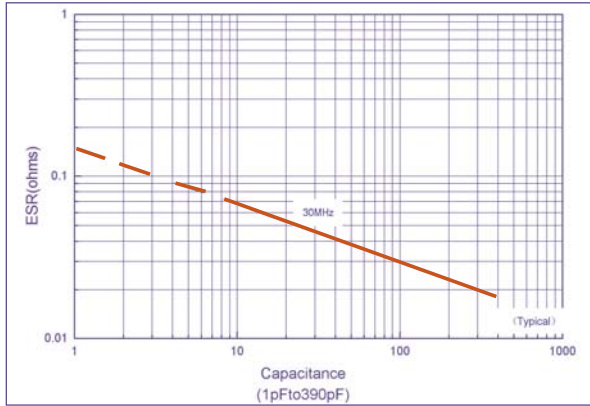
unit:inch(millimeter)

| Series | Term. Code | Type/Outlines | Capacitor Dimensions | | | Overlap and Lead Dimensions | | | | Overlap and Lead Material |
|--------|------------|---|--|----------------------------------|-----------------------------|-----------------------------|--------------------------|----------------------------------|----------------------------------|--|
| | | | Length (L _c) | Width (W _c) | Thickness (T _c) | Overlap (B) | Length (L _L) | Width (W _L) | Thickness (T _L) | |
| 70E | W |  Chip | .380+0.015 ~.010 (9.65+0.38 ~-0.25) | .380 ±.010 (9.65 ±0.25) | .177 (4.50) max | .063 (1.60) max | — | — | — | Nickel, Plated 100% Sn, RoHS Compliant |
| 70E | MS |  Microstrip | .380 +0.015~ -.010 (9.65 ±0.25) | .380 ±.010 (9.65± 0.25) | .177 (4.5) max | — | .750 (19.05) min | .350 ±.010 (8.89± 0.25) | .010 ±.005 (0.25± 0.13) | Silver or Silver- plated Copper |
| 70E | AR |  Axial Ribbon | | | | | | | | |
| 70E | RR |  Radial Ribbon | | | | | | | | |
| 70E | RW |  Radial Wire | | | | | | | | |
| 70E | AW |  Axial Wire | | | | | | | | |

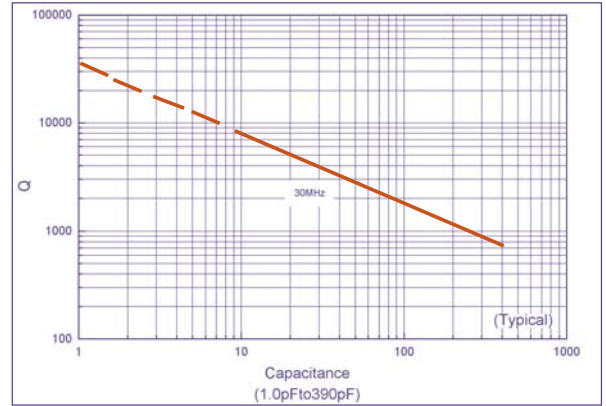
| Series | Term. Code | Type/Outlines | Capacitor Dimensions | | | Overlap and Lead Dimensions | | | | Overlap and Lead Material |
|--------|-----------------|---|--|----------------------------------|-----------------------------|-----------------------------|--------------------------|----------------------------------|----------------------------------|---|
| | | | Length (L _c) | Width (W _c) | Thickness (T _c) | Overlap (B) | Length (L _L) | Width (W _L) | Thickness (T _L) | |
| 70E | P (non-mag) |  Chip | .380+0.015 ~.010 (9.65+0.38 ~-0.25) | .380 ±.010 (9.65 ±0.25) | .177 (4.50) max | .063 (1.60) max | — | — | — | Copper Plated 100% Sn, Non-Mag, RoHS Compliant |
| 70E | MN (non-mag) |  Microstrip | .380 +0.015~ -.010 (9.65 ±0.25) | .380 ±.010 (9.65± 0.25) | .177 (4.5) max | — | .750 (19.05) min | .350 ±.010 (8.89± 0.25) | .010 ±.005 (0.25± 0.13) | Silver or Silver- plated Copper |
| 70E | AN (non-mag) |  Axial Ribbon | | | | | | | | |
| 70E | FN (non-mag) |  Radial Ribbon | | | | | | | | |
| 70E | RN (non-mag) |  Radial Wire | | | | | | | | |
| 70E | BN (non-mag) |  Axial Wire | | | | | | | | |

◆ **DLC70E Performance Curve**

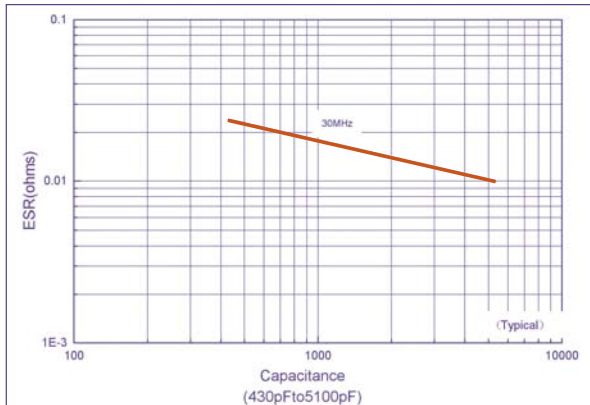
ESR VS Capacitance



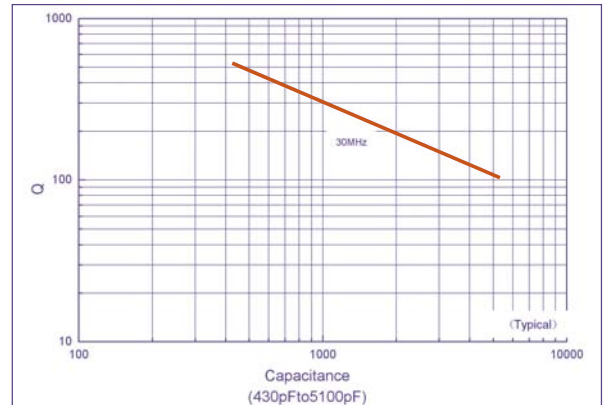
Q VS Capacitance



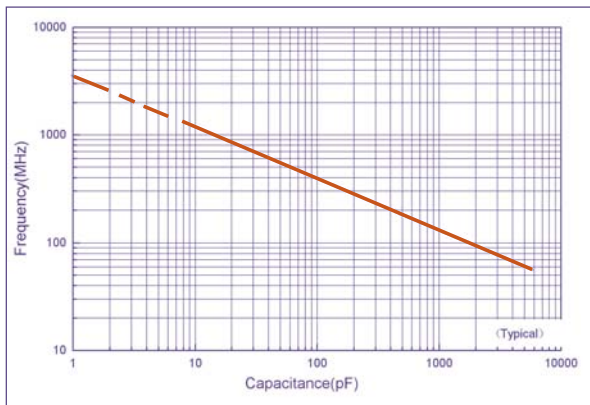
ESR VS Capacitance



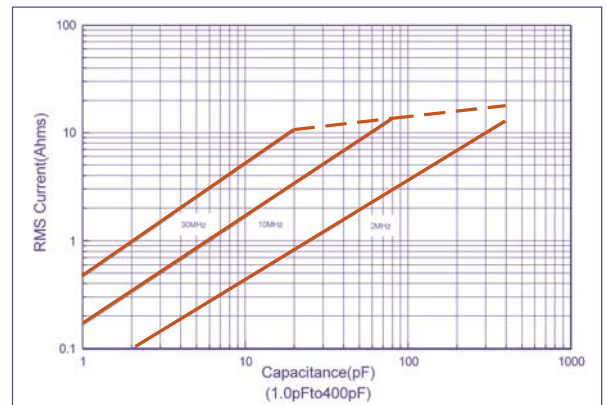
Q VS Capacitance



Series resonance VS Capacitance



Current rating VS Capacitance



Power Capacitor Assemblies

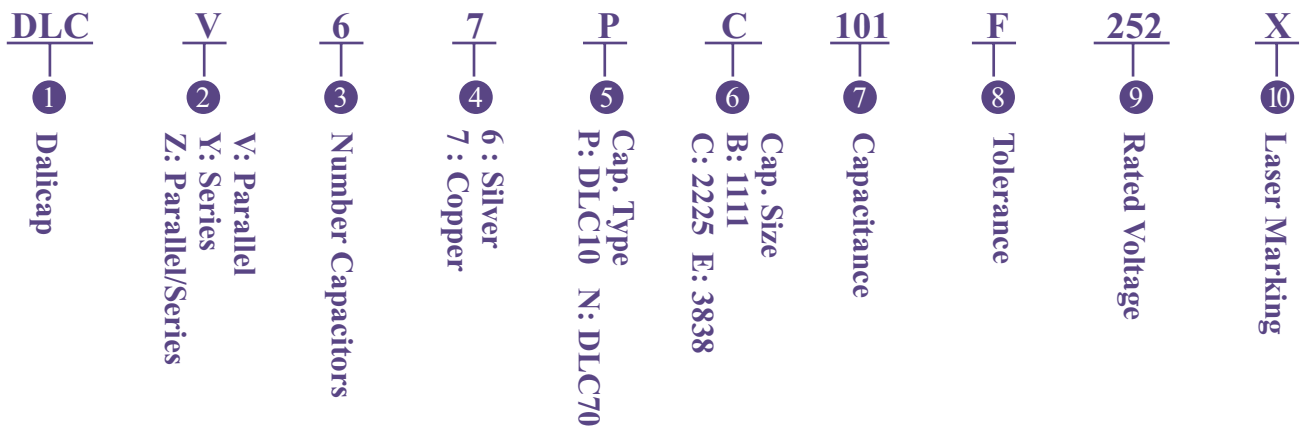
◆Product Features

High Operating Voltage, High Operating Current, Extended Capacitance, Tighter Tolerances,
High Reliability, High Q, Ultra-low ESR, Non-Magnetic.

◆Typical applications field

High Power RF, Medical Electronics, Broadcast, Semiconductor Manufacturing,
High Magnetic Environments, Inductive Heating.

◆Part numbering



Capacitance: For capacitor values requiring 3 significant digits,

e.g. 1222.5pF =1222R5

e.g. DLCV66PC101F252X

Silver bracket assembly with six 10C pieces in parallel, Capacitance is 100pF,
Capacitance tolerance is $\pm 1\%$, WVDC is 2500 V and no marking.

e.g. DLCV36PC1222R5F252X

Silver bracket assembly with three 10C pieces in parallel, Capacitance is 1222.5pF,
Capacitance tolerance is $\pm 1\%$, WVDC is 2500 V and Laser marking.

◆Capacitance and Voltage

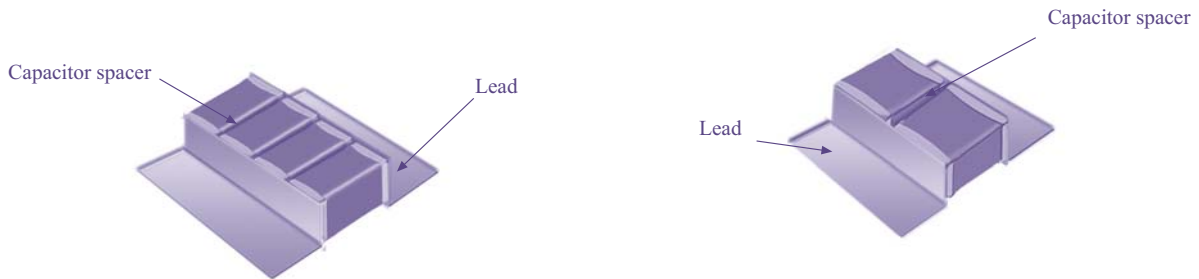
By Buyer's requirement

◆ Typical Assembly Configurations

① Parallel Assemblies

unit:inch(millimeter)

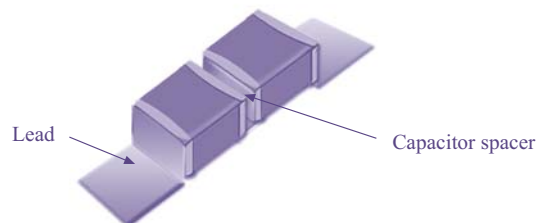
| | 10B/70B | 10C/70C | 10E/70E |
|-------------------------|----------------------------|---------------------------|-----------------------------|
| Lead Material | Silver-plated Copper | Silver-plated Copper | Silver-plated Copper |
| Lead Thickness | .004 or .010 (0.1 or 0.25) | .004 or .010(0.1 or 0.25) | .010 or .020 (0.25 or 0.51) |
| Lead Length (max.) | 0.5 (12.7) | 0.75 (19.1) | 2.0 (50.8) |
| Capacitor Spacer (typ.) | 0.050 or 0.078 (1.3 or 2) | 0.050 or 0.078(1.3 or 2) | 0.090 (2.3) |
| Mtg Configuration | Horizontal/Vertical | Horizontal/Vertical | Horizontal/Vertical |



② Series Assemblies

unit:inch(millimeter)

| | 10C/70C | 10E/70E |
|-------------------------|----------------------|----------------------|
| Lead Type | L Bracket | L Bracket |
| Lead Material | Silver-plated Copper | Silver-plated Copper |
| Lead Thickness | 0.010 (0.25) | 0.010 (0.25) |
| Lead Length (max.) | 0.75 (19.1) | 1.0 (25.4) |
| Capacitor Spacer (typ.) | 0.050 (1.3) | 0.050 (1.3) |
| Mtg Configuration | Horizontal | Horizontal |



③ Other Assemblies

By Buyer's requirement