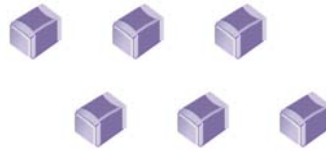


DLC75 Series



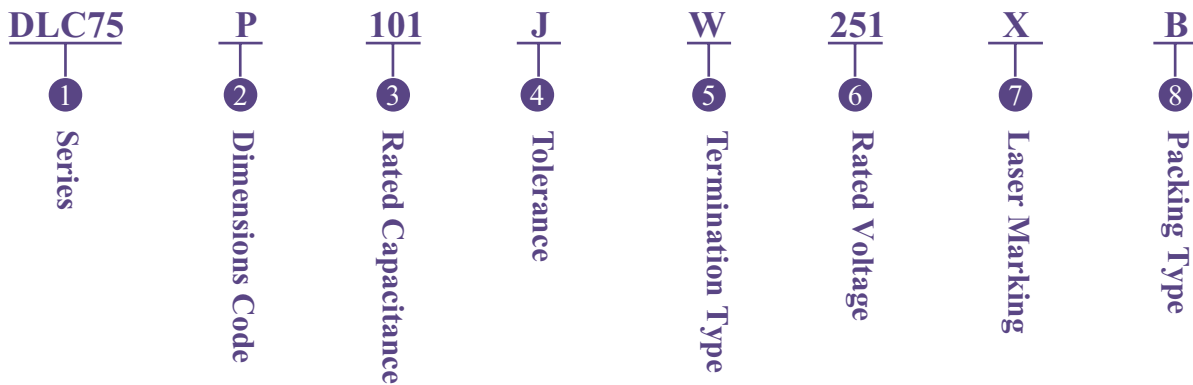
◆Product Features

Lowest ESR, Highest working voltage, High self resonance frequencies (to25GHz).

◆Product Application

Base station Products, L/C Filter.

◆Part Numbering



① **DLC75 Series – High Q, Microwave Type** (Temperature coefficient: $0 \pm 30\text{ppm}/^\circ\text{C}$)

② Dimensions Code

unit: inch(millimeter)

	75H	75P	75D	75B
Length	$.040 \pm .004$ (1.02 ± 0.1)	$.06 \pm .006$ (1.52 ± 0.15)	$.08 \pm .010$ (2.0+0.25~-0.25)	0.110 +.020~-0.010 (2.79 +0.51~-0.25)
width	$.020 \pm .004$ (0.51 ± 0.1)	$.030 \pm .006$ (0.81 ± 0.15)	$.05 \pm .010$ (1.2 ± 0.25)	$.110 \pm .010$ (2.79 ± 0.25)
Thickness	$.020 \pm .004$ (0.51 ± 0.1)	$.03+.005~-0.003$ (0.76+0.13~ -0.08)	$.057(1.45)\text{max}$	$.10(2.6)\text{max}$

③ Rated Capacitance

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

Capacitance is not less than 10pF; 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
Type	Nickel, Plated 100% Sn(RoHS)

⑥ Rated voltage

Code	Rated Voltage
500	50V
251	250V

⑦ Laser Marking

X denote Marking; N denote No-Marking.

⑧ Packaging Type

	DLC75H	DLC75P	DLC75D	DLC75B
T:Tape carrier packaging	√	√	√	√
B:Bulk packaging in a bag		√	√	√

Quantity per Reel: 1000,2000,3000,4000pcs/reel

◆ Performance Requirements

DLC75 Series Capacitors are designed and manufactured to meet the requirements of MIL-C-55681 and MIL-C-123.

◆ All of Dalicap DLC75 Series products are in compliance with RoHS instruction.

DLC75H Series

◆DLC75H Series Rated Capacitance & Rated Voltage Table

Cap.pF	Code	Tol.	Rated WVDC	Cap.pF	Code	Tol.	Rated WVDC	Cap.pF	Code	Tol.	Rated WVDC
0.1	0R1	A,B, C,D	50V Code 500	2.0	2R0	A,B, C,D	50V Code 500	10	100	F,G, J,K	50V Code 500
0.2	0R2			2.1	2R1			11	110		
0.3	0R3			2.2	2R2			12	120		
0.4	0R4			2.4	2R4			13	130		
0.5	0R5			2.7	2R7			15	150		
0.6	0R6			3.0	3R0			16	160		
0.7	0R7			3.3	3R3			18	180		
0.8	0R8			3.6	3R6			20	200		
0.9	0R9			3.9	3R9			22	220		
1.0	1R0			4.3	4R3			24	240		
1.1	1R1			4.7	4R7			27	270		
1.2	1R2			5.1	5R1						
1.3	1R3			5.6	5R6						
1.4	1R4			6.2	6R2						
1.5	1R5			6.8	6R8						
1.6	1R6			7.5	7R5						
1.7	1R7			8.2	8R2						
1.8	1R8			9.1	9R1						
1.9	1R9										

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

◆Performance

Item	Specifications
Quality Factor (Q)	2,000 min.
Insulation Resistance (IR)	10 ⁵ Megohms min. @ +25°C at rated WVDC. 10 ⁴ Megohms min. @ +125°C at rated WVDC.
Rated Voltage	50V
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

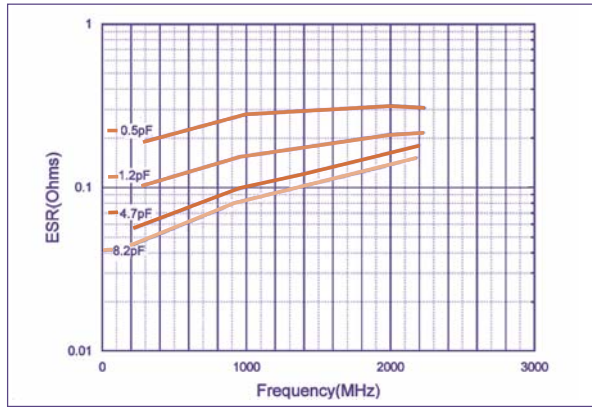
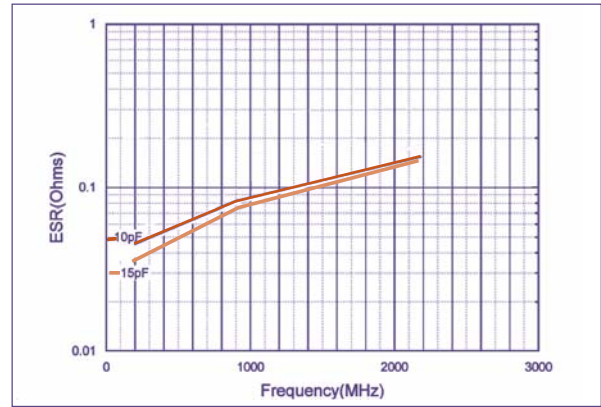
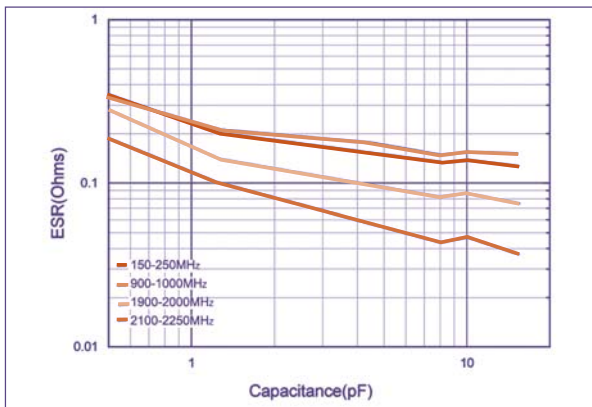
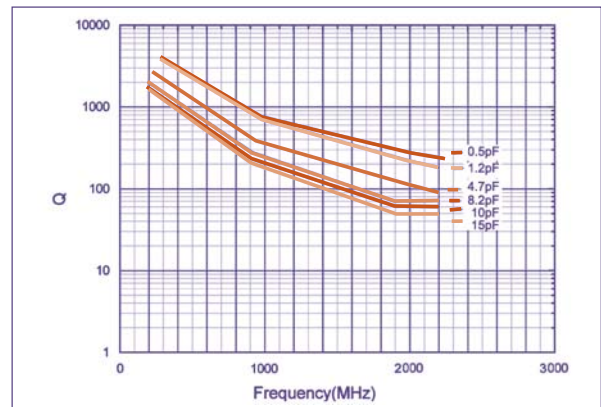
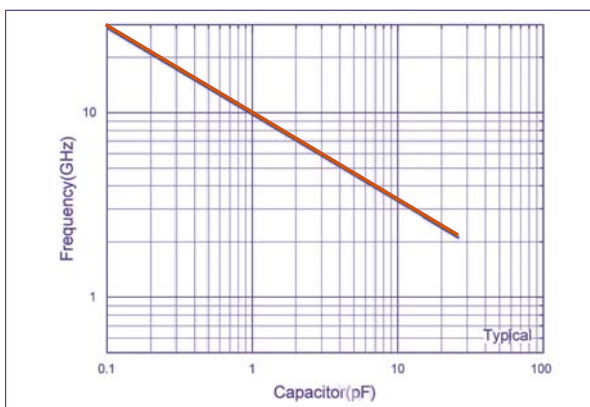
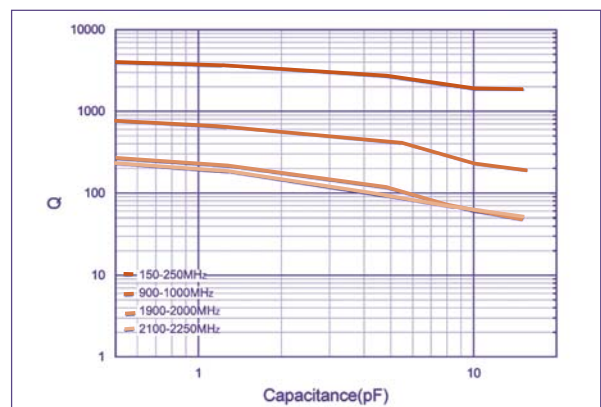
◆ Environmental Tests

Item	Specifications	Method
Terminal Adhesion	Termination should not pull off, Ceramic should remain undamaged.	Linear pull force exerted on axial leads soldered to each terminal. 2.0lbs.
Resistance to soldering heat	No mechanical damage Capacitance change: $-1.0\% \sim +2.0\%$ $Q > 500$ I.R. > 10 G Ohms Breakdown voltage: $2.5 \times$ WVDC	Preheat device to 150°C - 180°C for 60 sec. Dip in $260^{\circ}\pm 5^{\circ}\text{C}$ solder for 10 ± 1 sec. Measure after 24 ± 2 hour cooling period
Thermal shock	No mechanical damage Capacitance change: $\pm 0.5\%$ or 0.5pF max $Q > 2000$ I.R. > 10 G Ohms Breakdown voltage: $2.5 \times$ WVDC	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.
Humidity, Steady state	No mechanical damage Capacitance change: $\pm 0.5\%$ or 0.5pF max. $Q > 300$ I.R. > 1 G Ohms Breakdown voltage: $2.5 \times$ WVDC	MIL-STD-202, Method 106.
Low voltage humidity	No mechanical damage Capacitance change: $\pm 0.3\%$ or 0.3pF max. $Q > 300$ I.R. > 1 G Ohms Breakdown voltage: $2.5 \times$ WVDC	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	No mechanical damage Capacitance change: $\pm 2.0\%$ or 0.5pF max. $Q > 500$ I.R. > 1 G Ohms Breakdown voltage: $2.5 \times$ WVDC	MIL-STD-202, Method 108, for 1000 hours, at 125°C . 200% Rated voltage D.C. applied.

◆ DLC75H Chip Dimensions

unit: inch(millimeter)

	Length	width	Thickness
DLC75H Chip Dimensions	$.040 \pm .004$ (1.02 ± 0.1)	$.020 \pm .004$ (0.51 ± 0.1)	$.020 \pm .004$ (0.51 ± 0.1)

◆ DLC75H Performance Curve
ESR VS Frequency

ESR VS Frequency

ESR VS Capacitance

Q Factor VS Frequency

Series Resonant Frequency VS Capacitor

Q Factor


DLC75P Series
◆ DLC75P Series Rated Capacitance & Rated Voltage Table

Cap.pF	Code	Tol.	Rated WVDC	Cap.pF	Code	Tol.	Rated WVDC	Cap.pF	Code	Tol.	Rated WVDC
0.1	0R1	A,B, C,D	250V Code 251	2.2	2R2	A,B, C,D	250V Code 251	16	160	F,G, J,K	250V Code 251
0.2	0R2			2.4	2R4			18	180		
0.3	0R3			2.7	2R7			20	200		
0.4	0R4			3.0	3R0			22	220		
0.5	0R5			3.3	3R3			24	240		
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						

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

◆ Performance

Item	Specifications
Quality Factor (Q)	2,000 min.
Insulation Resistance (IR)	10 ⁵ Megohms min. @ +25°C at rated WVDC. 10 ⁴ Megohms min. @ +125°C at rated WVDC.
Rated Voltage	250V
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

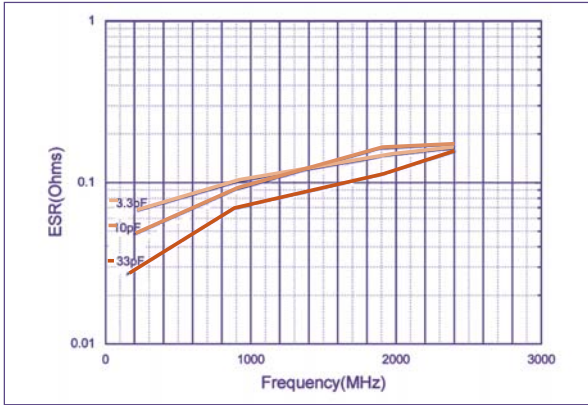
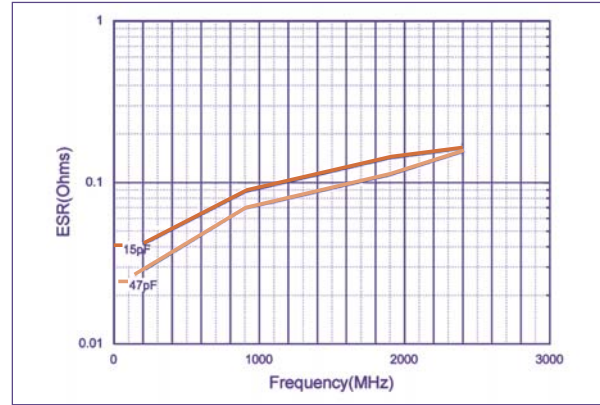
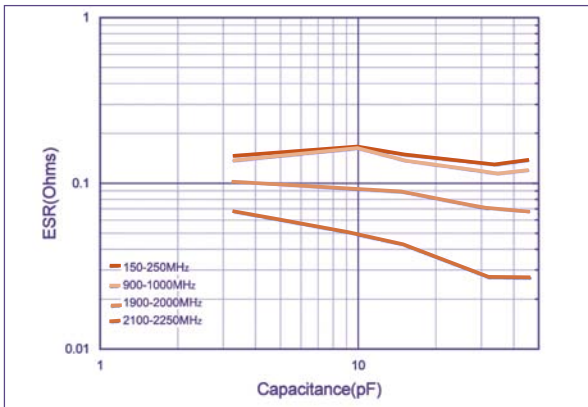
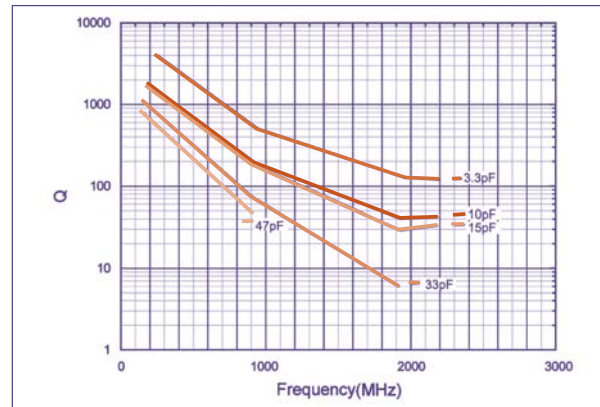
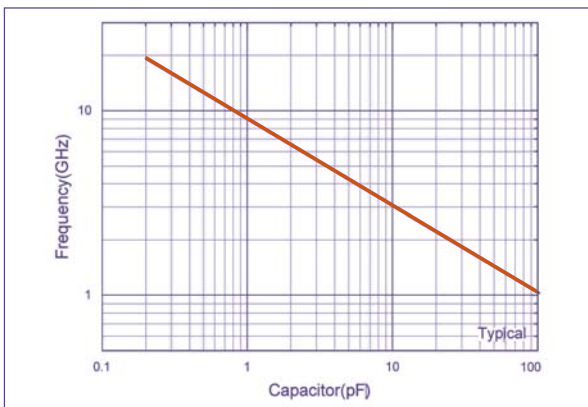
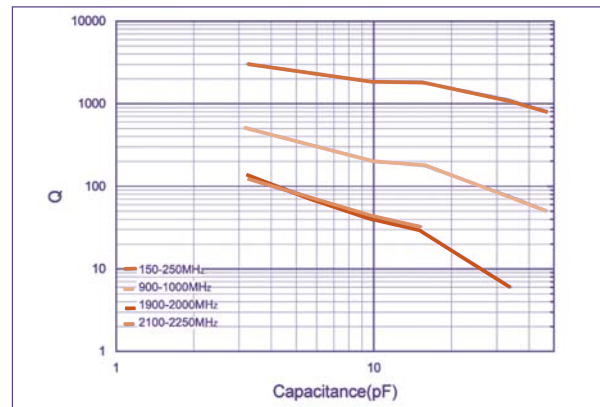
◆ Environmental Tests

Item	Specifications	Method
Terminal Adhesion	Termination should not pull off, Ceramic should remain undamaged.	Linear pull force exerted on axial leads soldered to each terminal. 2.0lbs.
Resistance to soldering heat	No mechanical damage Capacitance change: $-1.0\% \sim +2.0\%$ $Q > 500$ I.R. $> 10 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	Preheat device to $150^{\circ}\text{C} - 180^{\circ}\text{C}$ for 60 sec. Dip in $260^{\circ}\pm 5^{\circ}\text{C}$ solder for 10 ± 1 sec. Measure after 24 ± 2 hour cooling period
Thermal shock	No mechanical damage Capacitance change: $\pm 0.5\%$ or 0.5pF max $Q > 500$ I.R. $> 10 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	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.
Humidity, Steady state	No mechanical damage Capacitance change: $\pm 0.5\%$ or 0.5pF max . $Q > 300$ I.R. $> 1 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	MIL-STD-202, Method 106.
Low voltage humidity	No mechanical damage Capacitance change: $\pm 0.3\%$ or 0.3pF max . $Q > 300$ I.R. $> 1 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	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	No mechanical damage Capacitance change: $\pm 2.0\%$ or 0.5pF max . $Q > 500$ I.R. $> 1 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	MIL-STD-202, Method 108, for 1000 hours, at 125°C . 200% Rated voltage D.C. applied.

◆ DLC75P Chip Dimensions

unit: inch (millimeter)

	Length	width	Thickness
DLC75P Chip Dimensions	$.060 \pm .006$ (1.52 ± 0.15)	$.030 \pm .006$ (0.81 ± 0.15)	$.030 + .005 \sim -.003$ ($0.76 + 0.13 \sim -0.08$)

◆ DLC75P Performance Curve
ESR VS Frequency

ESR VS Frequency

ESR VS Capacitance

Q Factor VS Frequency

Series Resonant Frequency VS Capacitor

Q Factor


DLC75D Series

◆DLC75D Series Rated Capacitance & Rated Voltage Table

Cap.pF	Code	Tol.	Rated WVDC	Cap.pF	Code	Tol.	Rated WVDC	Cap.pF	Code	Tol.	Rated WVDC
0.1	0R1	A,B, C,D	250V Code 251	2.4	2R4	A,B, C,D	250V Code 251	20	200	F,G, J,K	250V Code 251
0.2	0R2			2.7	2R7			22	220		
0.3	0R3			3.0	3R0			24	240		
0.4	0R4			3.3	3R3			27	270		
0.5	0R5			3.6	3R6			30	300		
0.6	0R6			3.9	3R9			33	330		
0.7	0R7			4.3	4R3			36	360		
0.8	0R8			4.7	4R7			39	390		
0.9	0R9			5.1	5R1			43	430		
1.0	1R0			5.6	5R6			47	470		
1.1	1R1			6.2	6R2	51		510			
1.2	1R2			6.8	6R8	56		560			
1.3	1R3			7.5	7R5	62		620			
1.4	1R4			8.2	8R2	68		680			
1.5	1R5			9.1	9R1	75		750			
1.6	1R6			10	100	82		820			
1.7	1R7			11	110	91		910			
1.8	1R8			12	120	100		101			
1.9	1R9			13	130	120		121			
2.0	2R0			15	150	150		151			
2.1	2R1			16	160	180		181			
2.2	2R2			18	180	220		221			

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

◆Performance

Item	Specifications
Quality Factor (Q)	2,000 min.
Insulation Resistance (IR)	10 ⁵ Megohms min. @ +25°C at rated WVDC. 10 ⁴ Megohms min. @ +125°C at rated WVDC.
Rated Voltage	250V
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

◆ Environmental Tests

Item	Specifications	Method
Terminal Adhesion	Termination should not pull off, Ceramic should remain undamaged.	Linear pull force exerted on axial leads soldered to each terminal. 2.0lbs.
Resistance to soldering heat	No mechanical damage Capacitance change: $-1.0\% \sim +2.0\%$ $Q > 500$ I.R. $> 10 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	Preheat device to $150^{\circ}\text{C}-180^{\circ}\text{C}$ for 60 sec. Dip in $260^{\circ}\pm 5^{\circ}\text{C}$ solder for 10 ± 1 sec. Measure after 24 ± 2 hour cooling period
Thermal shock	No mechanical damage Capacitance change: $\pm 0.5\%$ or 0.5pF max $Q > 500$ I.R. $> 10 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	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.
Humidity, Steady state	No mechanical damage Capacitance change: $\pm 0.5\%$ or 0.5pF max . $Q > 300$ I.R. $> 1 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	MIL-STD-202, Method 106.
Low voltage humidity	No mechanical damage Capacitance change: $\pm 0.3\%$ or 0.3pF max . $Q > 300$ I.R. $> 1 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	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	No mechanical damage Capacitance change: $\pm 2.0\%$ or 0.5pF max . $Q > 500$ I.R. $> 1 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	MIL-STD-202, Method 108, for 1000 hours, at 125°C . 200% Rated voltage D.C. applied.

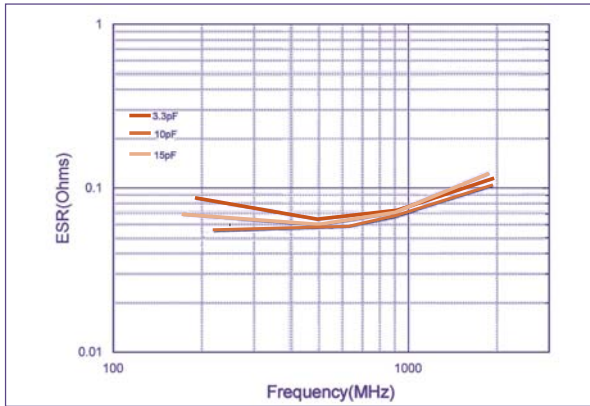
◆ DLC75D Chip Dimensions

unit: inch (millimeter)

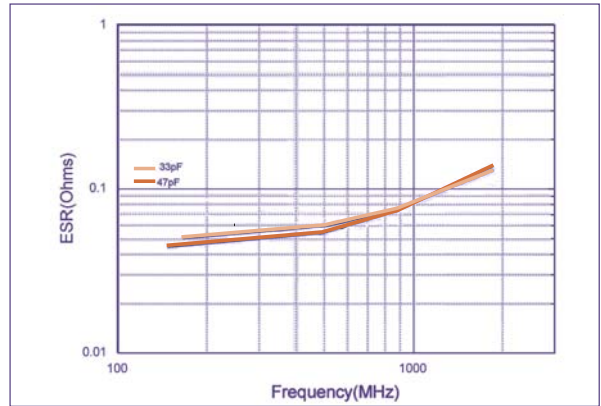
	Length	width	Thickness
DLC75D Chip Dimensions	$.080 \pm .01$ ($2.0+0.25 \sim -0.25$)	$.050 \pm .01$ (1.2 ± 0.25)	$.057(1.45)$ max

◆ DLC75D Performance Curve

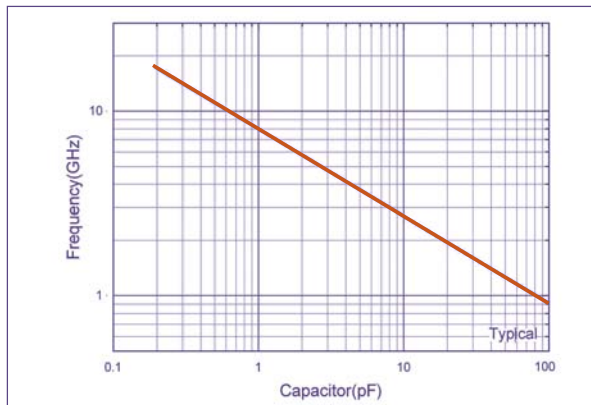
ESR VS Frequency



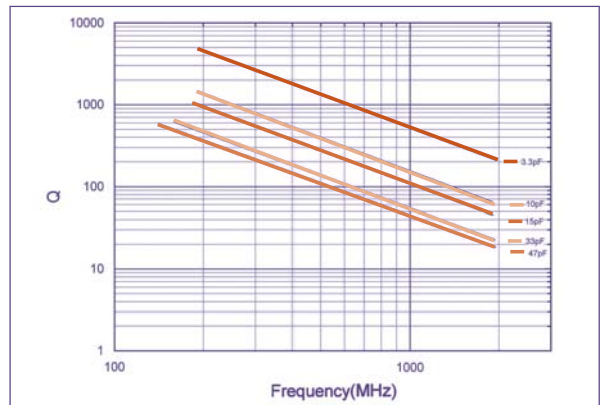
ESR VS Frequency



Series Resonant Frequency VS Capacitor



Q Factor VS Frequency



DLC75B Series
◆DLC75B Series Rated Capacitance & Rated Voltage 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		500 Code 501	3.3	3R3	A, B, C, D	500 Code 501	24	240	F, G, J, K, M	500 Code 501	180	181	F, G, J, K, M	300 Code 301		
0.6	0R6			3.6	3R6				27			270			200	201	
0.7	0R7			3.9	3R9				30			300			220	221	
0.8	0R8			4.3	4R3				33			330			240	241	
0.9	0R9			4.7	4R7				36			360			270	271	
1.0	1R0			5.1	5R1				39			390			300	301	
1.1	1R1			5.6	5R6				43			430			330	331	
1.2	1R2			6.2	6R2				47			470			360	361	
1.3	1R3			6.8	6R8				51			510			390	391	
1.4	1R4			7.5	7R5				56			560			430	431	
1.5	1R5			8.2	8R2			62	620			470	471				
1.6	1R6			9.1	9R1			68	680			510	511				
1.7	1R7			10	100			75	750			560	561				
1.8	1R8			11	110			82	820			620	621				
1.9	1R9			12	120			91	910			680	681				
2.0	2R0			13	130			100	101			750	751				
2.1	2R1			15	150			110	111			820	821				
2.2	2R2			16	160			120	121			910	911				
2.4	2R4			18	180			130	131			1000	102				
2.7	2R7			20	200			150	151								
3.0	3R0		22	220		160	161										

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

◆Performance

Quality Factor (Q)	2,000 min.
Insulation Resistance (IR)	10 ⁵ Megohms min. @ +25°C at rated WVDC. 10 ⁴ Megohms min. @ +125°C at rated WVDC.
Rated Voltage	250V
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

◆ Environmental Tests

Item	Specifications	Method
Terminal Adhesion	Termination should not pull off, Ceramic should remain undamaged.	Linear pull force exerted on axial leads soldered to each terminal. 2.0lbs.
Resistance to soldering heat	No mechanical damage Capacitance change: $-1.0\% \sim +2.0\%$ $Q > 500$ I.R. $> 10 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	Preheat device to $150^{\circ}\text{C} - 180^{\circ}\text{C}$ for 60 sec. Dip in $260^{\circ} \pm 5^{\circ}\text{C}$ solder for 10 ± 1 sec. Measure after 24 ± 2 hour cooling period
Thermal shock	No mechanical damage Capacitance change: $\pm 0.5\%$ or 0.5pF max $Q > 500$ I.R. $> 10 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	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.
Humidity, Steady state	No mechanical damage Capacitance change: $\pm 0.5\%$ or 0.5pF max . $Q > 300$ I.R. $> 1 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	MIL-STD-202, Method 106.
Low voltage humidity	No mechanical damage Capacitance change: $\pm 0.3\%$ or 0.3pF max . $Q > 300$ I.R. $> 1 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	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	No mechanical damage Capacitance change: $\pm 2.0\%$ or 0.5pF max . $Q > 500$ I.R. $> 1 \text{ G Ohms}$ Breakdown voltage: $2.5 \times \text{WVDC}$	MIL-STD-202, Method 108, for 1000 hours, at 125°C . 200% Rated voltage D.C. applied.

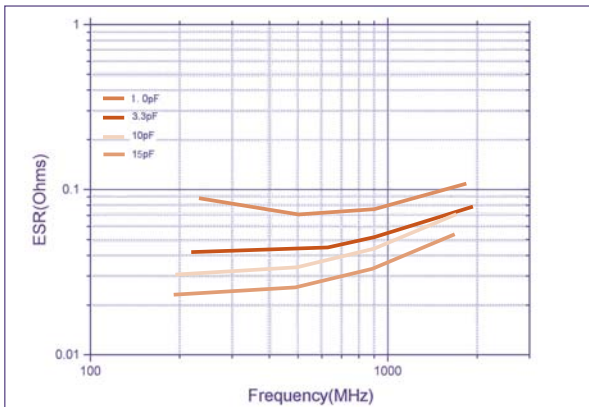
◆ DLC75B Chip Dimensions

unit: inch (millimeter)

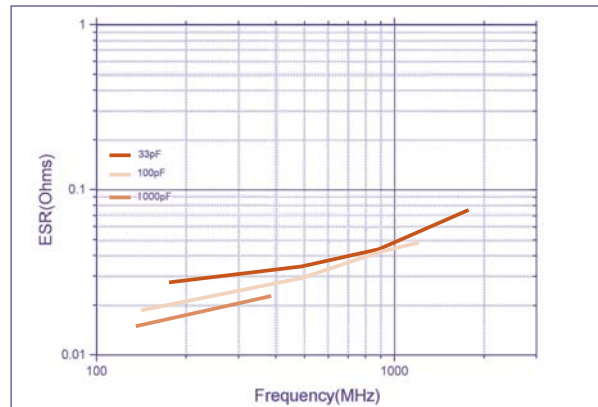
	Length	width	Thickness
DLC75B Chip Dimensions	$0.110 + .025 \sim -.010$ ($2.79 + 0.51 \sim -0.25$)	$.110 \pm .010$ (2.79 ± 0.25)	$.10(2.6)\text{max}$

◆DLC75B Performance Curve

ESR VS Frequency



ESR VS Frequency



Series Resonant Frequency VS Capacitor

