

Specification

Part No.: DLC75N

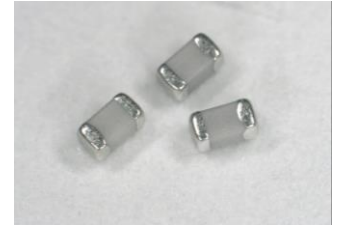
DLC75N (.020" x .010")

◆ **Product Features**

Ultra-low ESR value, high working voltage, high RF power,
high self-resonant frequency.

◆ **Product Application**

Typical applications : mobile communication base station, repeater, cluster
communication,MRI.

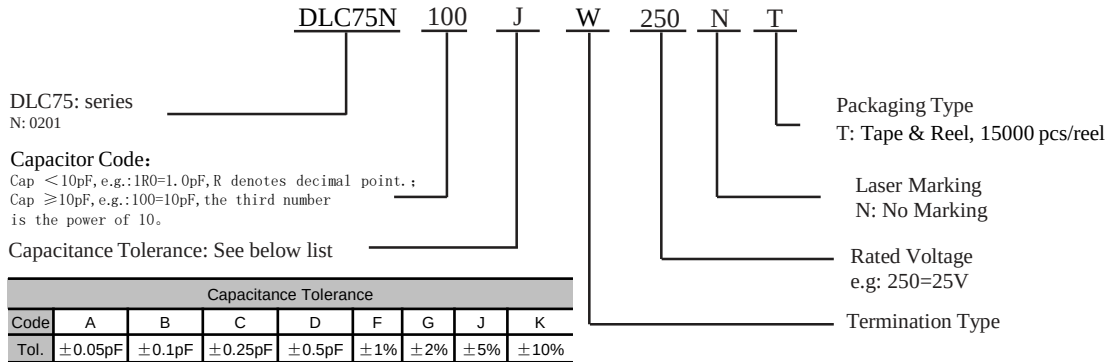


◆ **DLC75N Capacitance Table**

Cap. pF	Code	Tol.	Rated WVDC	Cap. pF	Code	Tol.	Rated WVDC	Cap. pF	Code	Tol.	Rated WVDC
0.2	0R2	A, B, C, D	25V Code 250	1.9	1R9	A, B, C, D	25V Code 250	8.2	8R2	A, B, C, D	25V Code 250
0.3	0R3			2.0	2R0			9.1	9R1		
0.4	0R4			2.1	2R1			10	100	F, G, J	
0.5	0R5			2.2	2R2			11	110		
0.6	0R6			2.4	2R4			12	120		
0.7	0R7			2.7	2R7			13	130		
0.8	0R8			3.0	3R0			15	150		
0.9	0R9			3.3	3R3			16	160		
1.0	1R0			3.6	3R6			18	180		
1.1	1R1			3.9	3R9						
1.2	1R2			4.3	4R3						
1.3	1R3			4.7	4R7						
1.4	1R4			5.1	5R1						
1.5	1R5			5.6	5R6						
1.6	1R6			6.2	6R2						
1.7	1R7			6.8	6R8						
1.8	1R8			7.5	7R5						

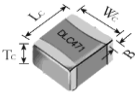
Remark: special capacitance, tolerance and WVDC are available, consult with DALICAP.

◆ Part Numbering

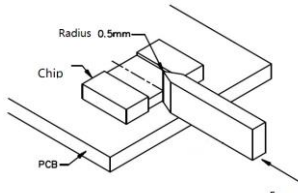


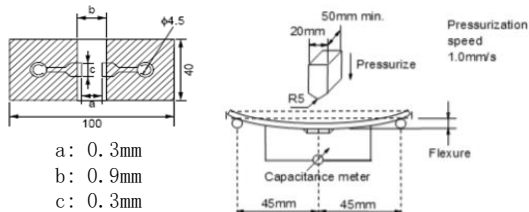
◆ DLC75N Termination Type and Dimensions

unit: inch (millimeter)

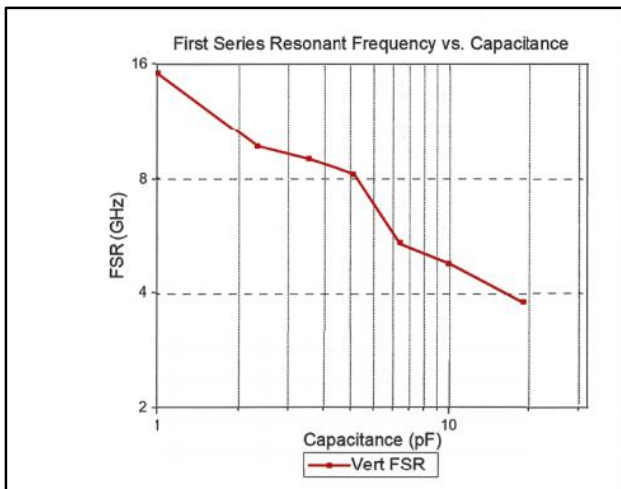
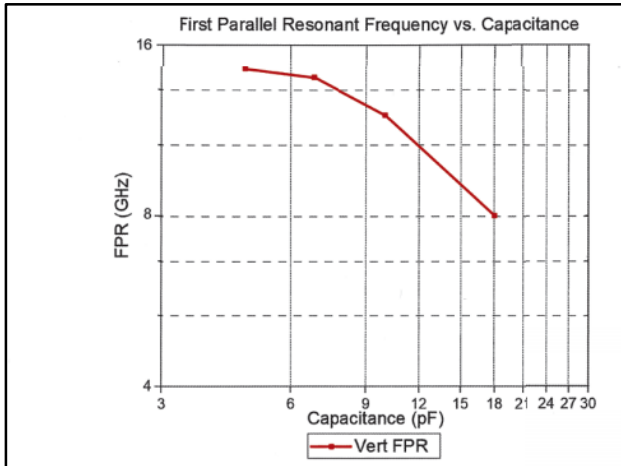
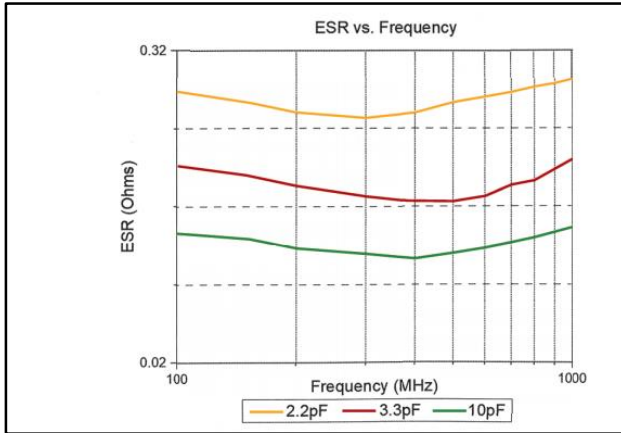
Series	Term. Code	Type/ Outlines	Capacitor Dimensions				Termina Material
			Length Lc	Width Wc	Thickness Tc	Overlap B	
75N	W		0.024±0.001 (0.60±0.03)	0.012±0.001 (0.30±0.03)	0.012±0.001 (0.30±0.03)	0.004~0.008 (0.10±0.20)	100%Sn over Nickel Plating , RoHS Compliant
	L						10%Pb90%Sn over Nickel Plating ,

◆ **Reliability Test Conditions.**

No.	Item	Specification	Test method												
1	Operating temperature	-55℃～150℃													
2	Appearance	No defects or abnormality	Visual inspection: ×10 microscope.												
3	Dimensions	See the previous page	Caliper inspection												
4	Capacitance	Shall be within the applicable tolerance specified.	Test frequency: 1MHz±10% Test voltage: 1.0±0.2Vrms												
5	D.F	D.F≤0.05%													
6	Insulation resistance	10 ⁵ Megohms min. @ +25 ℃ 10 ⁴ Megohms min. @ +125 ℃	Voltage: DC Rated Voltage												
7	Dielectric withstanding voltage (DWV)	Shall be no evidence of breakdown or visible evidence of arcing or damage.	1. Test Voltage: 250% of the rated voltage 2.Applied Time: 5 s 3.Charge/discharge current: 50mA max.												
8	Temperature coefficient	(0±30)ppm/℃	The capacitance change should be measured after 5 min. at each specified temp. stage. Capacitance value as a reference is the value in step 3. <table><tr><td>step</td><td>temperature (℃)</td></tr><tr><td>1</td><td>25±2</td></tr><tr><td>2</td><td>-55±3</td></tr><tr><td>3</td><td>25±2</td></tr><tr><td>4</td><td>150±3</td></tr><tr><td>5</td><td>25±2</td></tr></table> $TC=\frac{C_5-C_3}{C_3 \times \Delta T} \times 10^6 \text{ ppm/}^\circ\text{C}$	step	temperature (℃)	1	25±2	2	-55±3	3	25±2	4	150±3	5	25±2
step	temperature (℃)														
1	25±2														
2	-55±3														
3	25±2														
4	150±3														
5	25±2														
9	Capacitance Drift	±0. 2% or ±0.05pF, whichever is larger.													
10	Adhesive Strength of Termination	No removal of the terminations or other defect should occur.	Pressurizing force:1.0^{+0.5}₀N Test time: 10±1 sec. 												

No.	Item	Specification	Test method															
11	Substrate Bending test	Appearance: No defects or abnormalities. Capacitance Change: With in $\pm 5\%$ or $\pm 0.3\text{pF}$ whichever is larger.	Mounting method: Reflow solder the capacitor on the test substrate. Pressurization Method: Shown as below. Flexure 1mm. Holding Time $5 \pm 1\text{s}$  a: 0.3mm b: 0.9mm c: 0.3mm															
12	Solderability of termination	Shall be at least 95 percent covered with a smooth solder coating.	Immerse the capacitor in a eutectic solution requirement temperature $245 \pm 2^\circ\text{C}$ for 2 ± 0.5 seconds. Capacitor shall be immersed to a depth of 10mm.															
13	Resistance to soldering Heat	Appearance: No evidence of mechanical damage or delamination or exposed. Cap change: within $-1.0\% \sim +2.0\%$ or $\pm 0.5\text{pF}$ whichever is larger. Q: No less than initial requirement. IR(25°C): No less than initial requirement.	Preheat for 1 minute at 150°C to 180°C before immerse the capacitor in a eutectic solution at $260 \pm 5^\circ\text{C}$ for 10 ± 1 seconds. Capacitor shall be immersed to a depth of 10mm. And following a 24 ± 2 hours cooling period.															
14	Temperature Cycle	Appearance: No evidence of mechanical damage . Cap change: within $\pm 0.5\%$ or $\pm 0.5\text{pF}$ whichever is larger. Q: No less than initial requirement. IR(25°C): No less than 30% initial requirement. DWV: To meet initial requirement.	Perform the 5 cycles according to the four heat treatments listed in the following table. Set it for 24 ± 2 hours at room temperature. <table><tr><th>step</th><th>Temperature($^\circ\text{C}$)</th><th>Time(Min)</th></tr><tr><td>1</td><td>$-55(-3 \sim 0)$</td><td>≥ 30</td></tr><tr><td>2</td><td>25 ± 10</td><td>≤ 5</td></tr><tr><td>3</td><td>$125(0 \sim +3)$</td><td>≥ 30</td></tr><tr><td>4</td><td>25 ± 10</td><td>≤ 5</td></tr></table>	step	Temperature($^\circ\text{C}$)	Time(Min)	1	$-55(-3 \sim 0)$	≥ 30	2	25 ± 10	≤ 5	3	$125(0 \sim +3)$	≥ 30	4	25 ± 10	≤ 5
step	Temperature($^\circ\text{C}$)	Time(Min)																
1	$-55(-3 \sim 0)$	≥ 30																
2	25 ± 10	≤ 5																
3	$125(0 \sim +3)$	≥ 30																
4	25 ± 10	≤ 5																
15	Humidity, steady state	Appearance: No evidence of mechanical damage . Cap change: within $\pm 0.3\%$ or $\pm 0.3\text{pF}$ whichever is larger. IR(25°C): No less than initial requirement.	With 1.5 Volts D.C. applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours minimum. Removed and sit 3.5 ± 0.5 hours at room temperature.															
16	High Temperature Load (Life)	Appearance: No evidence of mechanical damage . Cap change: within $\pm 2\%$ or $\pm 0.5\text{pF}$ whichever is larger. Q: No less than 50% initial requirement. IR(25°C): No less than 30% initial requirement.	Test Voltage: 200% of the rated voltage The charge/discharge current is less than 50mA. Temperature: 150°C ; Time: 2000h. Measurement: Set it for 48 hours at room temperature, then measure.															

◆ DLC75N Performance Curve



Definitions and Measurement conditions:

On the S21 curve of a capacitor, there are several parallel resonance points (V-shaped attenuation points). The first parallel resonance frequency (FPR) is the frequency of the lowest-frequency parallel resonance point. It is not affected by the thickness and dielectric constant of the substrate, but it is affected by the installation direction of the capacitor. A horizontal direction means that the internal electrode plates of the capacitor are parallel to the substrate.

Definitions and Measurement Conditions

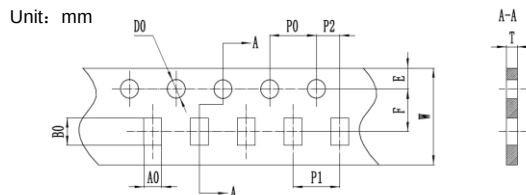
On the input impedance $[Z_{in}]$ curve of a capacitor, there are several series resonance points (V-shaped attenuation points). The first series resonance frequency (FSR) is the frequency of the lowest-frequency series resonance point. At this frequency, the imaginary part of the input impedance is zero ($\text{Im}[Z_{in}] = 0$), and the reference plane is at the edge of the capacitor. Below FSR, the real part $\text{Re}[Z_{in}]$ and imaginary part $\text{Im}[Z_{in}]$ of the input impedance do not change linearly with frequency. The value of FSR is related to the following factors: the structure of the internal electrodes of the capacitor, the substrate material, the substrate thickness, the substrate dielectric constant, the installation direction of the capacitor on the substrate, and the size of the substrate pad.

Measurement Conditions:

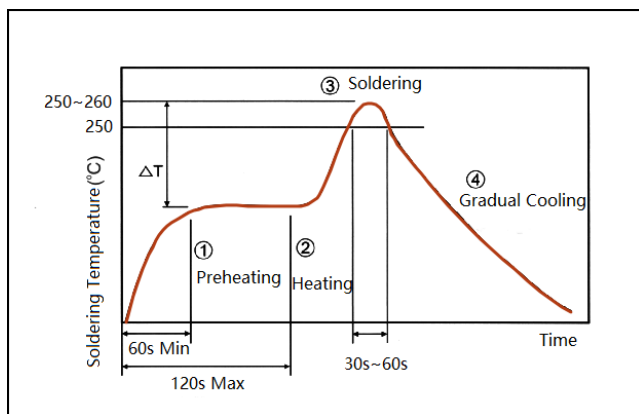
- Rogers Ro3006 substrate with a dielectric constant of 6.15, substrate thickness of 10 mils, microstrip gap of 6 mils, horizontally mounted microstrip width of 14.1 mils, and the reference plane at the edge of the sample.

◆ Tape & Reel Specifications

EIA	A0	B0	W	P0	P1	T	F	Qty/reel	Tape Material
0201	0.40	0.70	8.00	4.00	2.00	0.42	3.50	15000	Paper



◆ Recommended soldering conditions



$\Delta T \leq 190^{\circ}\text{C}$;

Maximum temperature: $255^{\circ}\text{C} \pm 5^{\circ}\text{C}$;

Heating rate: $\leq 4^{\circ}\text{C/s}$.

◆ Recommended Land Dimensions

EIA	A(mm)	B(mm)	C(mm)
0201	0.20-0.30	0.20-0.35	0.20-0.40

