

Specification

Part No.: DLC60H

DLC60H (.040" x .020")

◆ Product Features

Ultra low ESR value, high working voltage, high RF Power,
high Self-resonance frequency.



◆ Product Application

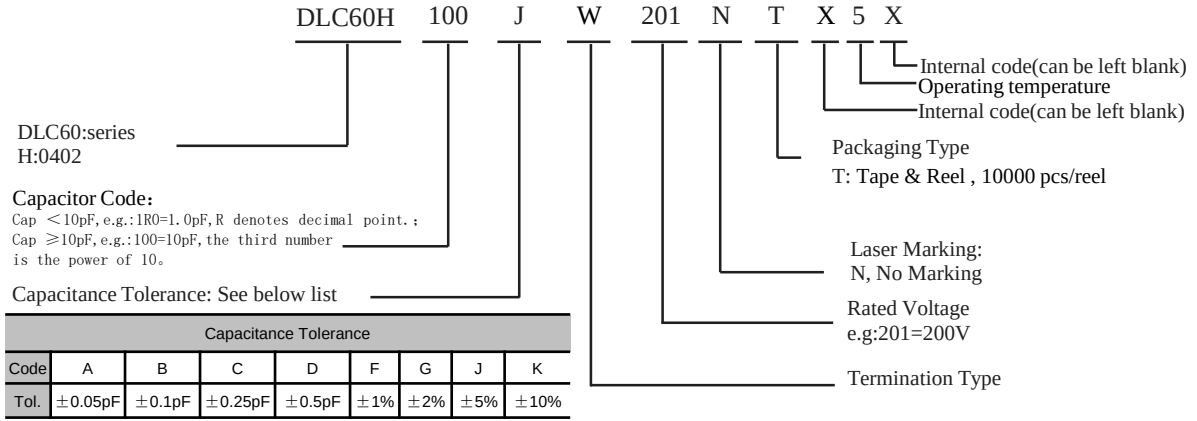
Typical applications: civil satellite communication, mobile communication base station, repeater, cluster communication.

◆ DLC60H Capacitance 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	200V Code 201	1.8	1R8	A,B,C,D	200V Code 201	7.5	7R5	A,B,C,D	200V Code 201
0.2	0R2			1.9	1R9			8.2	8R2		
0.3	0R3			2.0	2R0			9.1	9R1		
0.4	0R4			2.1	2R1			10	100	F,G,J,K	
0.5	0R5			2.2	2R2			12	120		
0.6	0R6			2.4	2R4			13	130		
0.7	0R7			2.7	2R7			15	150		
0.8	0R8			3.0	3R0			16	160		
0.9	0R9			3.3	3R3			18	180		
1.0	1R0			3.6	3R6			20	200		
1.1	1R1			3.9	3R9			22	220		
1.2	1R2			4.3	4R3			24	240		
1.3	1R3			4.7	4R7			27	270		
1.4	1R4			5.1	5R1			30	300		
1.5	1R5			5.6	5R6			33	330		
1.6	1R6			6.2	6R2						
1.7	1R7			6.8	6R8						

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

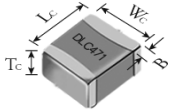
◆ Part Numbering



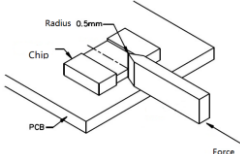
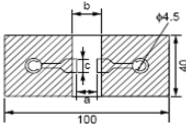
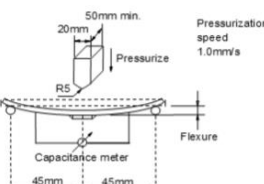
※ Operating temperature: left blank : -55°C~125°C; 5: -55°C~150°C;

◆ DLC60H Termination Type and Dimensions

unit: inch (millimeter)

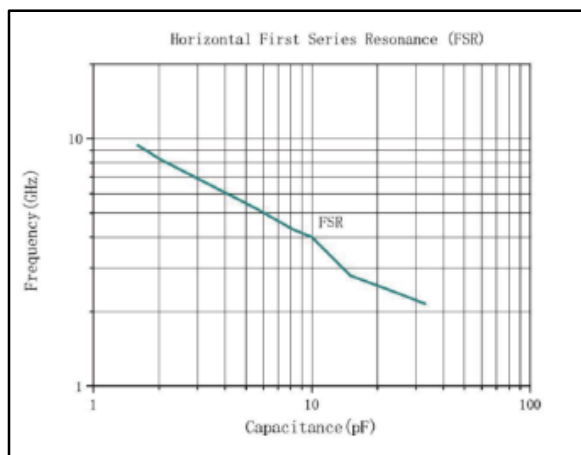
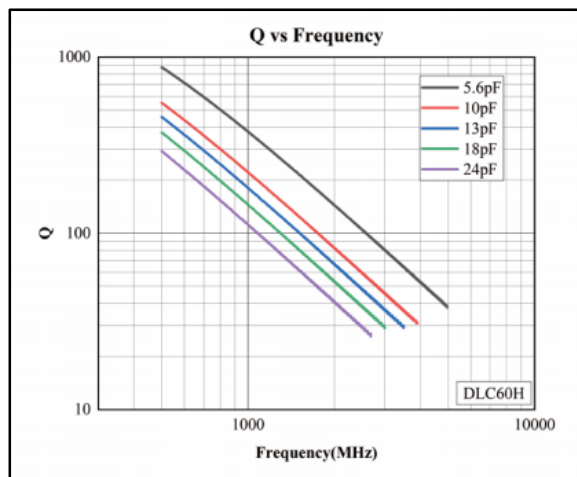
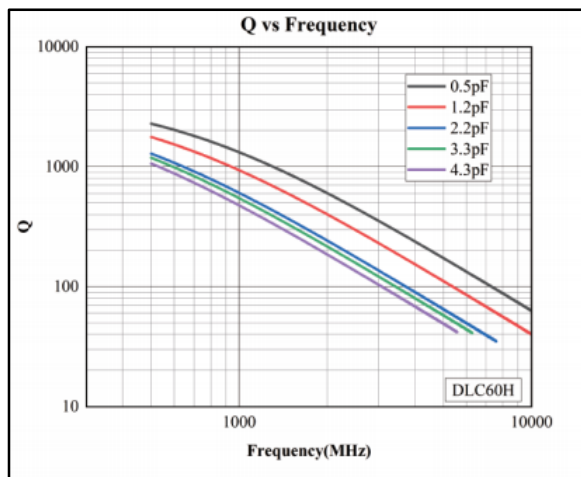
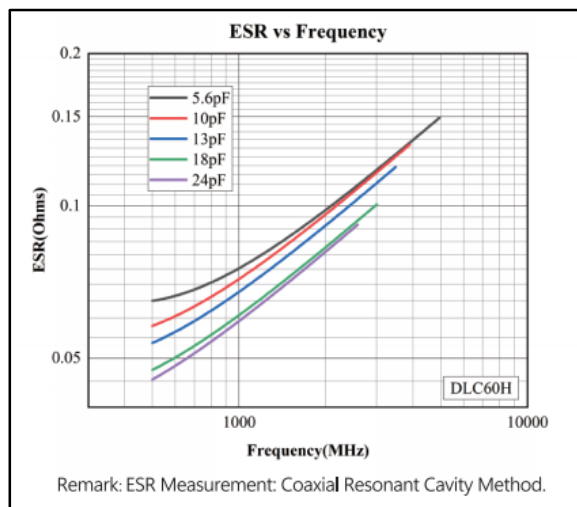
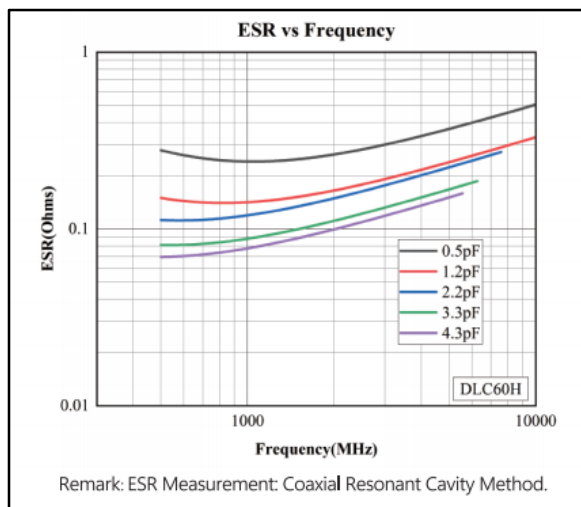
Series	Term. Code	Type/ Outlines	Capacitor Dimensions				Termina Material
			Length Lc	Width Wc	Thickness Tc	Overlap B	
60H	W		.0394±.004 (1.00±0.10)	.0197±.004 (0.50±0.10)	.0197±0.004 (0.50±0.10)	.004~.015 (0.10~0.40)	100%Sn over Nickel Plating, RoHS Compliant

◆ **Reliability Test Conditions.**

No.	Item	Specification	Test method												
1	Operating temperature	-55℃~125℃ -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	DF≤0.05%													
6	Insulation resistance	10 ⁵ Megohms min. @ +25 °C 10 ⁴ Megohms min. @ +125 °C	Voltage: DC Rated Voltage .												
7	Dielectric withstanding voltage (DWV)	Shall be no evidence of breakdown or visible evidence of arcing or damage.	Rated voltage: 200% of the rated voltage Applied Time: 5 s Charge/discharge current: 50mA max.												
8	Temperature coefficient	(0±30)ppm/°C (-55℃~150℃)	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><th>step</th><th>temperature (°C)</th></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>Tmax±3</td></tr><tr><td>5</td><td>25±2</td></tr></table> $TC = \frac{C_x - C_3}{C_3 \times \Delta T} \times 10^6 \text{ ppm/}^\circ\text{C}$	step	temperature (°C)	1	25±2	2	-55±3	3	25±2	4	Tmax±3	5	25±2
step	temperature (°C)														
1	25±2														
2	-55±3														
3	25±2														
4	Tmax±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: 2^{+0.5}₀N Test time: 10±1 sec. 												
11	Substrate Bending test	Appearance: No defects or abnormalities. Capacitance Change: With in ±5% or ±0.3pF whichever is larger.	Mounting method: Reflow solder the capacitor on the test substrate. Pressurization Method: Shown as below. Flexure 1mm. Holding Time 5±1s  a: 0. 4mm b: 1. 4mm c: 0. 5mm 												

No.	Item	Specification	Test method															
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 100 cycles according to the four heat treatments listed in the following table. Set it for 24 ± 2 hours at room temperature. <table><tr><td>step</td><td>Temperature($^{\circ}\text{C}$)</td><td>Time(min)</td></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>$T_{\text{max}}(0 \sim +3)$</td><td>$\geq 30$</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	$T_{\text{max}}(0 \sim +3)$	≥ 30	4	$25+10$	≤ 5
step	Temperature($^{\circ}\text{C}$)	Time(min)																
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2	$25+10$	≤ 5																
3	$T_{\text{max}}(0 \sim +3)$	≥ 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 1.5Volts 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: $T_{\text{max}}^{\circ}\text{C}$. Time: 2000h. Measurement: Set it for 48 hours at room temperature, then measure.															

◆ DLC60H Performance Curve



Definition and measurement conditions:

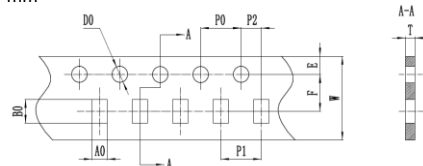
Definition: The capacitor is installed in series on the microstrip, that is, the capacitor is connected across the two ends of a 50Ω microstrip with a gap.

Measurement conditions: Ro4350 Rogers substrate with 3.48 dielectric constant, and characteristic impedance is 50Ω.

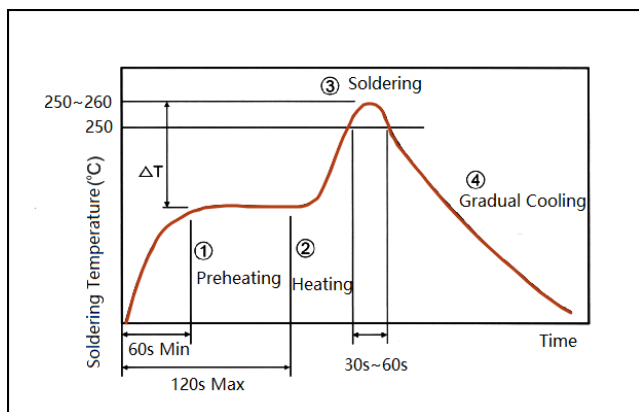
◆ Tape & Reel Specifications

EIA	A0	B0	W	P0	P1	T	F	Qty/reel	Tape Material
0402	0.70	1.20	8.00	4.00	2.00	0.65	3.50	10000	Paper

Unit: mm



◆ 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)
0402	0.3-0.5	0.35-0.45	0.4-0.6

