

# SAW Resonator UNIT

AW DCC6C Series



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## SPECIFICATION

**SJK P/N: AW433920DCC6CA75UE**

**深圳市晶科鑫实业有限公司**  
**SHENZHEN CRYSTAL TECHNOLOGY INDUSTRIAL CO., LTD.**

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## AW DCC6C Series



The SJK433.920 is a true one- port , surface- acoustic- wave( SAW) resonator in a low- profile DCC6C case. It provides reliable , fundamental- mode , quartz frequency stabilization of fixed- frequency transmitters operating at 433.920MHz.

### Performance

#### 1-1.Maximum Rating

Rating		Value	Unit
RF Power Dissipation	$P_S$	10	dBm
DC voltage between any two pins	$V_{DC}$	10	V
Operating temperature range	$T_A$	-40 ~ +85	°C
Storage temperature range	$T_{stg}$	-55 ~ +125	°C

#### 1-2.Electronic Characteristics

Test Temperature: 25°C±2°C/Terminating source impedance: 50Ω/Terminating load impedance: 50Ω

Characteristic		Sym	Minimum	Typical	Maximum	Unit
Center Frequency	Absolute Frequency	$f_c$		433.920		MHz
	Tolerance from 433.920 MHz	$\Delta f_c$		±75		kHz
Insertion Loss		IL		1.4	2.0	dB
Quality Factor	Unloaded Q	$Q_U$		12451		
	50Ω Loaded Q	$Q_L$		1984		
Temperature Stability	Turnover Temperature	$T_O$	25	40	55	°C
	Turnover Frequency	$f_o$		$f_c$		kHz
	Frequency Temperature Coefficient	FTC		0.032		ppm/°C <sup>2</sup>
Frequency Aging	Absolute Value during the First Year	$ f_A $		≤10		ppm/yr
DC Insulation Resistance between the Two Pins			1.0			MΩ
RF Equivalent RLC Model	Motional Resistance	$R_M$		14.5	25.5	Ω
	Motional Inductance	$L_M$		65.5	95.5	μH
	Motional Capacitance	$C_M$		2.05		fF
	Pin 1 to Pin 2 Static Capacitance	$C_O$	2.55	2.95	3.35	pF

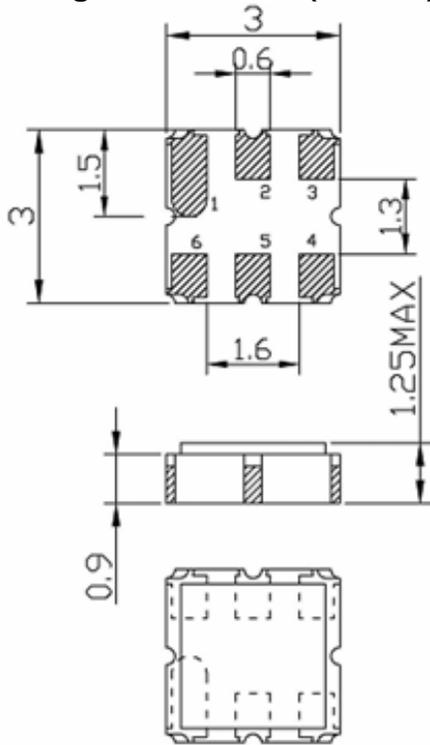
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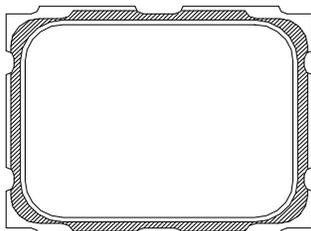
## Package Dimension (DCC6C)



## Pin Configuration

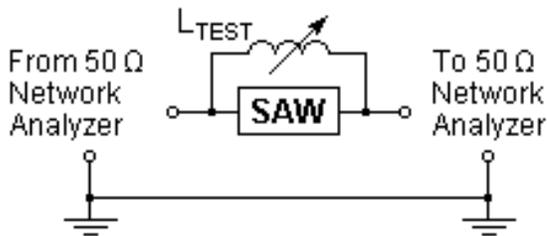
<b>2</b> ↻	Input↻	↻
<b>5</b> ↻	Output↻	↻
<b>1,3,4,6</b> ↻	Ground↻	↻

## Marking



<b>R</b>	SAW Resonator
<b>433.92</b>	Part number

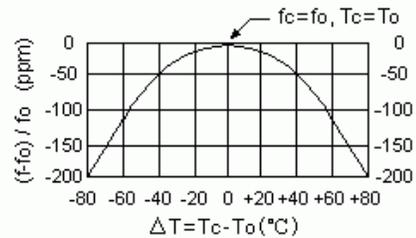
## Test Circuit



One-port Resonator

The test circuit inductor,  $L_{TEST}$ , is tuned to resonate with the static capacitance,  $C_0$  at  $f_c$ .

## Temperature Characteristics



The curve shown above accounts for resonator contribution only.

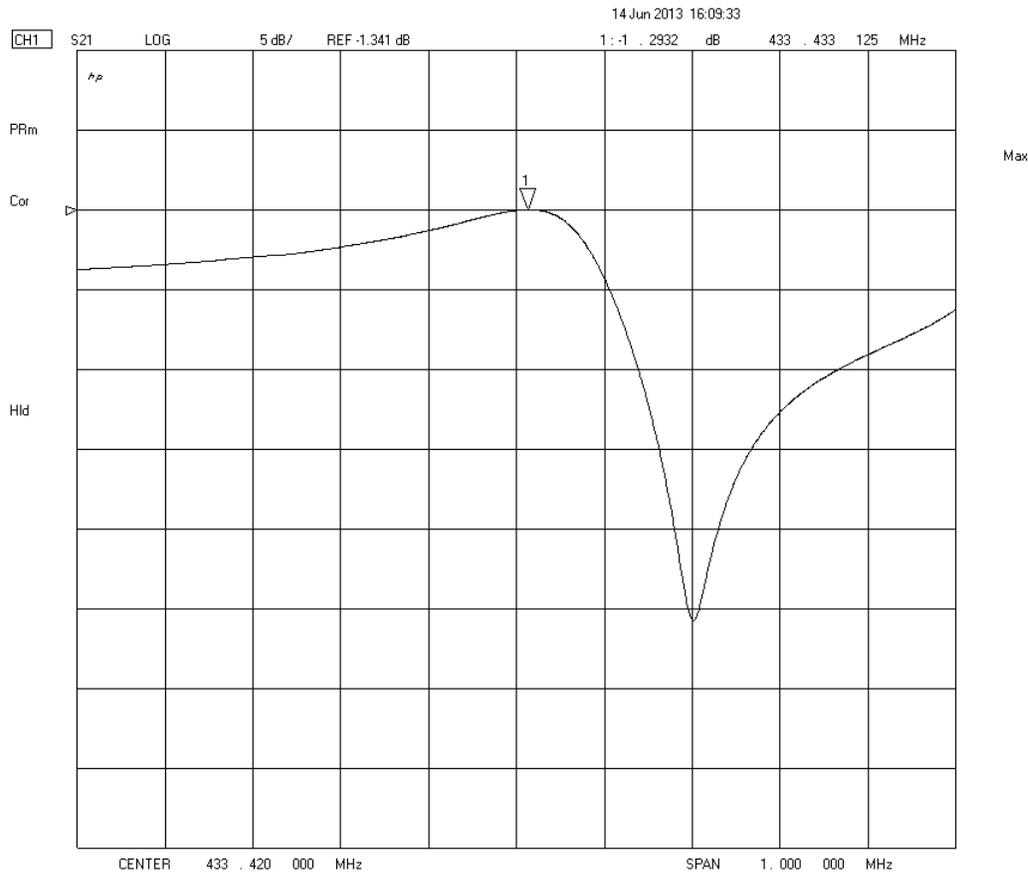
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## Typical Frequency Response



**CAUTION:** Electrostatic Sensitive Device. Observe precautions for handling!

### NOTES:

1. The center frequency,  $f_c$ , is measured at the minimum IL point with the resonator in the 50 $\Omega$  test system.
2. Unless noted otherwise, case temperature  $T_C = +25^\circ\text{C} \pm 2^\circ\text{C}$ .
3. Frequency aging is the change in  $f_c$  with time and is specified at  $+65^\circ\text{C}$  or less. Aging may exceed the specification for prolonged temperatures above  $+65^\circ\text{C}$ . Typically, aging is greatest the first year after manufacture, decreasing in subsequent years.
4. Turnover temperature,  $T_0$ , is the temperature of maximum (or turnover) frequency,  $f_0$ . The nominal frequency at any case temperature,  $T_C$ , may be calculated from:  $f = f_0 [1 - \text{FTC} (T_0 - T_C)^2]$ .
5. This equivalent RLC model approximates resonator performance near the resonant frequency and is provided for reference only. The capacitance  $C_0$  is the measured static (nonmotional) capacitance between the two terminals. The measurement includes case parasitic capacitance.
6. Derived mathematically from one or more of the following directly measured parameters:  $f_c$ ,  $I_L$ , 3 dB bandwidth,  $f_c$  versus  $T_C$ , and  $C_0$ .
7. The specifications of this device are based on the test circuit shown above and subject to change or obsolescence without notice.
8. Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.
9. Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) per se, not for applications, processes and circuits implemented within components or assemblies.
10. For questions on technology, prices and delivery please contact our sales offices .

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