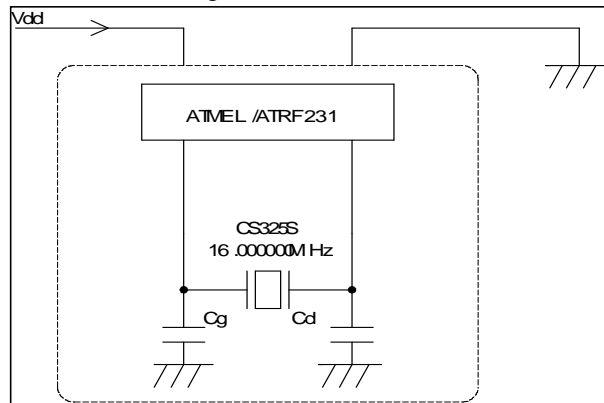


Investigation Report of Oscillation Circuit

*at Vdd=3.0V/25°C

IC		ATMEL
		ATRF231
CRYSTAL		CS325S
Nominal Frequency	MHz	16.000000
Laod Capacitance	pF	12
Cg,Cd	pF	12 15
Negative Resistance (-R)	ohm	2370
Drive Level	μW	14
Startup Time	ms	1

* Our Recommendable Negative Resistance Value : over 800 ohm

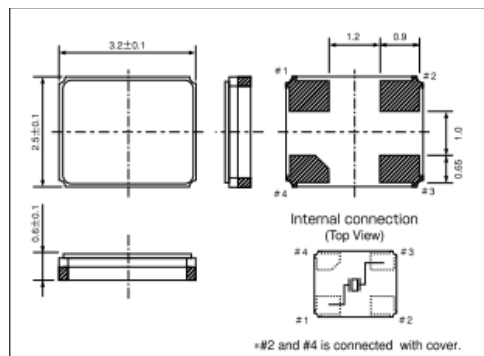


*These recommendations are based on actual evaluation results and intended to support users in picking the right components.

As the actual board layout and choice of external components influences the best suitable crystal load capacitance, we does not assume evaluation.

Please refer to IC maker's manual for designing.

CS325S



AT-CUT CRYSTAL UNIT			
<ul style="list-style-type: none"> ■ High-density SMD TYPE ■ Reliable cermaic package and excellent environmental characters. ■ Suitable for various applications such as communication devices, AV devices and other equipment. 			
Standard Specification			
Nominal Frequency	MHz	13.0~54.0 (Fundamental)	
Frequency Tolerance	ppm	+/- 30 (at 25°C)	
Operatating Temperature Rang	°C	-40 to 85	
Storage Temperature Range	°C	-55 to 125	
Motional Resistance	Ω	13.0 to 16.0MHz	150 Max
		16.0 to 20.0MHz	120 Max
		20.0 to 30.0MHz	80 Max
		30.0 to 54.0MHz	50 Max
Level of drive	uW	10 (100 Max)	
Insulation Resistance	MΩ	500 Min. (at DC100+/-15V)	