

QUARTZ CRYSTAL RESONATOR

AT38/AT39/AT310 Series (DIP TYPE)

Features

- Tuning Fork type crystal generates time keeping clock signal
- The best choice of watch, clock, audio/video, home appliance
- Excellent shock and environmental characteristics
- RoHS Compliant / Pb Free



Specifications

Holder Type	AT3.0x8.0	AT3.0x9.0	AT3.0x10
Frequency Range	3.57545Mhz to 70.000Mhz		
Operating	-10°C to +60°C typical or custom-designed		
Storage	- 40°C to +85°C typical		
Frequency	±30ppm, or specify		
Frequency	±50ppm, or specify		
Load Capacitance	12pF ~ 32pF or Series		
Drive Level	100µW typical		
Shunt Capacitance	7pF Max.		
Insulation	500 MΩ Mini. at DC 100V		
Aging (at 25°C)	±5ppm/ year Max.		

Equivalent Series Resistance (ESR) and Mode of Operation

Frequency Range	ESR(Ω)	Mode	Frequency Range	ESR(Ω)	Mode
3.579545 ~ 4.000	200 Max.	Fundamental	8.0001 ~ 10.000	80 Max.	Fundamental
4.001 ~ 5.000 Mhz	150 Max.	Fundamental	10.001 ~ 27.000	50 Max.	Fundamental
5.001 ~ 6.000 Mhz	120 Max.	Fundamental	27.001 ~ 36.000	100 Max.	3rd Overtone
6.001 ~ 8.000 Mhz	100 Max.	Fundamental	36.001 ~ 70.000	80 Max.	3rd Overtone

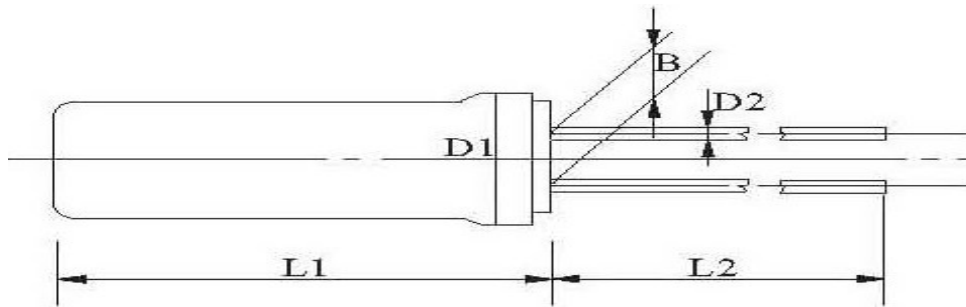
How to order

Series	Frequency	Operating Temp.	Load capacitance	Package
AT38 :3x8mm	2.0Mhz	1= -10°C~+60°C	16=16pF	B = Bulk
AT39 :3x9mm	3.0Mhz	2= -20°C~+70°C	20=20pF	R = Tape Reel
AT310 :3x10mm	4.000Mhz	3= -40°C~+85°C	30=30pF 32=32pF or specify	

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Dimensions (mm)



Model	L1	L2	D1	D2	B
AT38 ($\Phi 3 \times 8$)	8.3	10.0	$\Phi 3.1$	$\Phi 0.3$	0.8
AT39 ($\Phi 3 \times 9$)	9.3	10.0	$\Phi 3.1$	$\Phi 0.3$	1.1
AT310 ($\Phi 3 \times 10$)	10.3	10.0	$\Phi 3.1$	$\Phi 0.3$	1.1