



AT-49 CRYSTAL 49/S 49/SS



FEATURES

- AT-cut crystal performance
- Wide frequency range
- Standard and moderate precision available
- Low profile package



Item		Specifications
Nominal Frequency Range	f_0	3.5MHz ~ 40.0MHz (Fundamental)
		30.0MHz ~ 80.0MHz (3rd Overtone)
Frequency Tolerance, $T_a=25^{\circ}\text{C} \pm 3^{\circ}\text{C}$	$\Delta f/f$	$\pm 20\text{ppm}$
Load Capacitance	C_L	20pF, or customer specify
Frequency Tolerance over Operating Temperature Range	$\Delta f/f$	$\pm 20\text{ppm}$
Operating Temperature Range	T_{OPR}	-10°C to 70°C
Storage Temperature Range	T_{STG}	-40°C to 85°C
Drive Level	DL	0.1mW (1mW Max.)
Shunt Capacitance	C_0	7pF Max.
Insulation Resistance	IR	500M Ω Min.
Aging	Δf_A	$\pm 5\text{ppm/Year}$ Max.

SERIES RESISTANCE (ESR)

Frequency Range	$3.5 < f_0 \leq 4.5$	$4.5 < f_0 \leq 6.0$	$6.0 < f_0 \leq 8.0$	$8.0 < f_0 \leq 12.0$	$12.0 < f_0 \leq 15.0$	$15.0 < f_0 \leq 18.0$
ESR	120 Ω Max.	90 Ω Max.	70 Ω Max.	60 Ω Max.	40 Ω Max.	30 Ω Max.

Frequency Range	$18.0 < f_0 \leq 40.0$	$30.0 < f_0 \leq 35.0$ (3.O.T)	$35.0 < f_0 \leq 40.0$ (3.O.T)	$40.0 < f_0 \leq 80.0$ (3.O.T)
ESR	25 Ω Max.	100 Ω Max.	80 Ω Max.	70 Ω Max.

Please consult our sales representatives for other specifications.

DIMENSION (mm)

Series	Height (H)
THHF-49S3	3.5mm Max.
THHF-49S2A	2.5mm Max.
THHF-49S2B	2.3mm Max.

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All specifications are subject to change without notice.