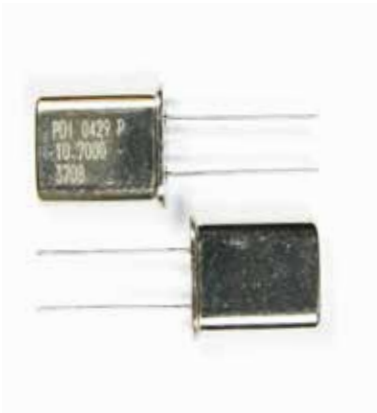


HA-Series Specifications



11.05L x 4.65W x 13.46H (mm)

PDI HA-Series is a hermetically sealed quartz crystal in a HC-49U through-hole package. This crystal, designed to meet your most demanding specification, is available in standard or custom frequencies and/or with customized parameters. PDI provides quick-turn sampling for your proto-typing needs, mass production capability, and competitive pricing.

ex) **HA-25000X-F-C-D-08-X-X***

FREQUENCY

03000X – 99999X =
3.000MHz – 99.000MHz
C10000 – C20000 =
100.000MHz – 200.000MHz

MODE

F = Fundamental
3 = 3rd Overtone
5 = 5th Overtone

TOTAL TOLERANCE

B = +/-25
(Temp A & B)
C = +/-50
D = +/-100
S = Special

OPERATING TEMPERATURE

A = 0 to +70°C
B = -20 to +70°C
D = -40 to +85°C
E = -55 to +125°C
S = Special

LOAD

08-99 = pF
SE = Series

PACKAGE

A = Third Lead Top
C = Cut
D = Insulation Sleeve
E = Third Lead Side
F = Top Lead & Insulation Sleeve
G = Gull Wing
H = Insulator
J = Cut w/Insulator
X = Through Hole
S = Special

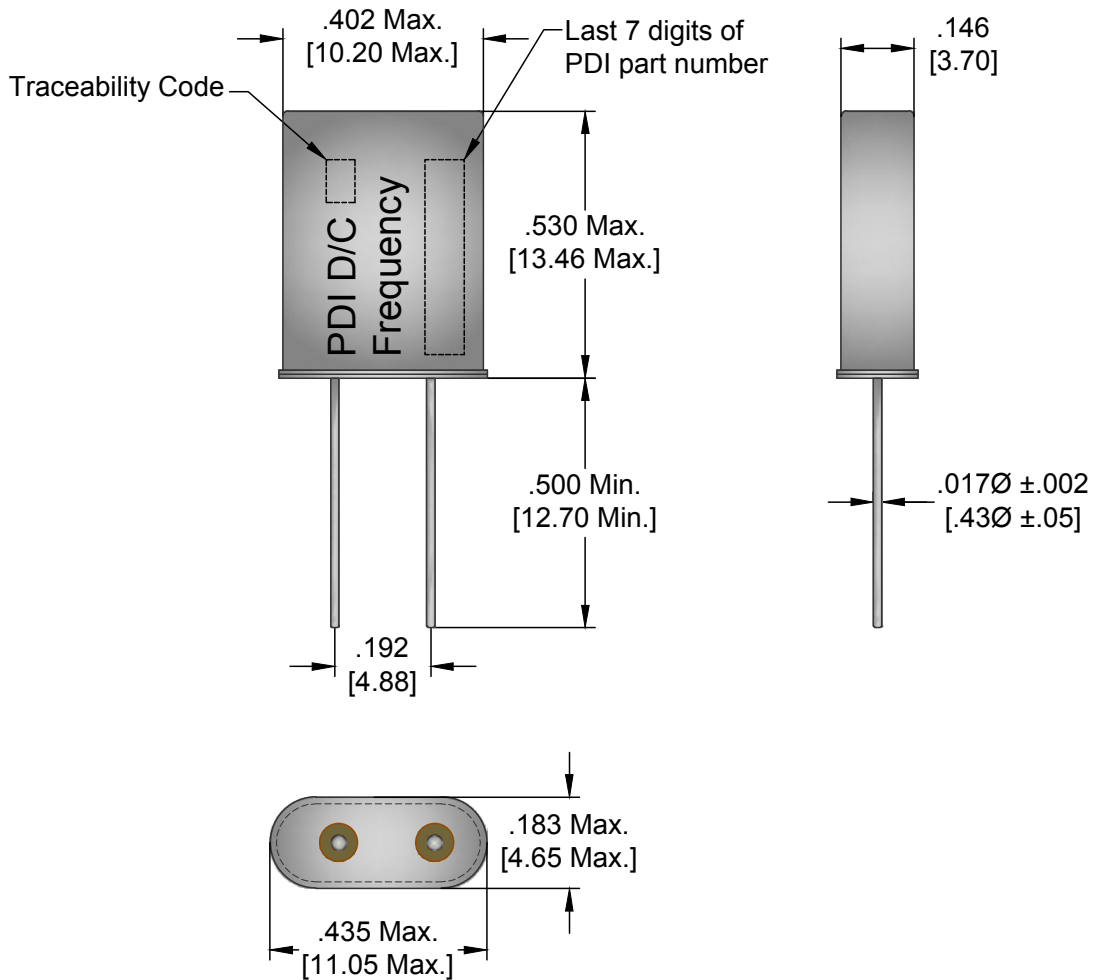
*(X) for standard or assigned for customization.

Parameter		Frequency Range	Units
		3.000000 to 200.000000	MHz
Temperature Range	Operating	Per Chart	°C
	Storage	-55 to +125	
Insulation Resistance	@ 100Vcc (Min.)	500	MΩ
Drive Level	(Max.)	1	mW
Aging	Per Year	±5.0	ppm
Shunt Capacitance (Co)	(Max.)	7.0	pF
Motional Capacitance (C1)		Consult Applications Engineering	
Motional Inductance (L1)		Consult Applications Engineering	
Frequency Range – MHz	Oscillation Mode	Series Resistance – Max.	Units
3.000000 – 8.000000	Fundamental	80	Ohms
>8.000000 – 13.000000		60	
>13.000000 – 20.000000		40	
>20.000000 – 30.000000		30	
>25.000000 – 40.000000		60	
>40.000000 – 60.000000	3rd Overtone	50	
>60.000000 – 80.000000		60	
>80.000000 – 125.000000		70	
>75.000000 – 100.000000	5th Overtone	80	
>100.000000 – 150.000000		90	
>125.000000 – 200.000000		100	

HA-Series 11.05 x 4.65 x 13.46 (mm)



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Mechanical Shock: MIL-STD-202 Method 213, Condition C
Vibration: MIL-STD-202, Method 201, 204, and 214
Hermeticity: MIL-STD-202, Method 112
Solderability: IPC/EIA-STD-002A

NOTES:

Terminals are Au.
 Other options are available, please consult factory.
 All product is supplied *RoHS* and *REACH* compliant.
 Product can be supplied on Tape and Reel, on reels of 1,000 units.
 Not all Frequency/Temperature combinations are available.
Decimal XXX = $\pm .008$, XX = $\pm .020$ *Metric* [XXX = $\pm .20$], [XX = $\pm .50$]
 Specifications subject to change without notice, last updated 4/1/13.