

# SMD QUARTZ CRYSTAL

## SERIES HC-49/US-SMD

### FEATURES

- + High reliability for low cost / Cheapest available SMD-Crystal
- + 3 pad package for grounding
- + Low profile - 3.2 and 3.0 mm package heights available
- + Extended temperature range to -40/+125°C available
- + Very tight frequency tolerances available



### GENERAL DATA

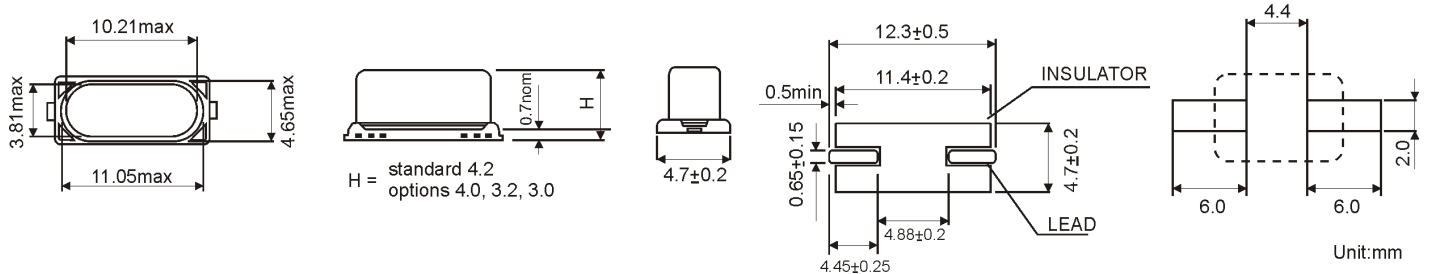
PB FREE / ROHS-2 2011/65/EU COMPLIANT

PARAMETERS	PRODUCT FEATURES AND CONDITIONS
SMD-CRYSTAL SERIES	HC-49/US-SMD (without grounding pin) HC-49/US-GSMD (with grounding pin)
NUMBER OF SOLDER PINS	HC-49/US-SMD = 2 (standard) HC-49/US-GSMD = 3 (middle pin for grounding)
FREQUENCY RANGE	3.5 ~ 40.0 MHz AT-Fundamental 24.0 ~ 40.5504 MHz BT-Fundamental 24.576 ~ 80.0 MHz 3rd Overtone
FREQUENCY TOLERANCES AT 25°C	±5 ppm ~ ±50 ppm
LOAD CAPACITANCE (C <sub>L</sub> )	6 pF ~ 50 pF or Series
WORKING TEMPERATURE RANGES	0/+50°C ~ -40/+125°C
SHUNT CAPACITANCE (C <sub>0</sub> )	7 pF max.
DRIVE LEVEL	100 µW typical (0.01 mW ~ 1 mW possible on request)
AGING	±3 ~ ±5 ppm per year standard (±2 ppm available as option)
INSULATION RESISTANCE	>500 MΩ DC/100V ±10%
STORAGE TEMPERATURE	-55°/+125°C
DELIVERY FORM	Tape and Reel (1.000 pcs per reel)
<a href="#">OTHER PARAMETERS ARE AVAILABLE ON REQUEST / CREATE HERE YOUR SPECIFICATION</a>	

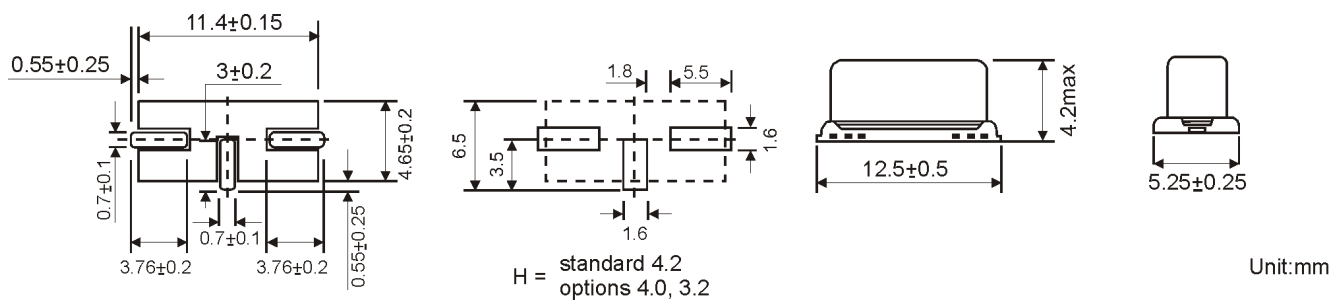
### FREQUENCY STABILITY VS. TEMPERATURE

	±5ppm	±10ppm	±15ppm	±20ppm	±30ppm	±50ppm
0°/+50°C	+	+	+	+	+	+
-10°/+60°C	+	+	+	+	+	+
0°/+70°C		+	+	+	+	+
-20°/+70°C		+	+	+	+	+
-40°/+85°C			+	+	+	+
-40°/+125°C						+

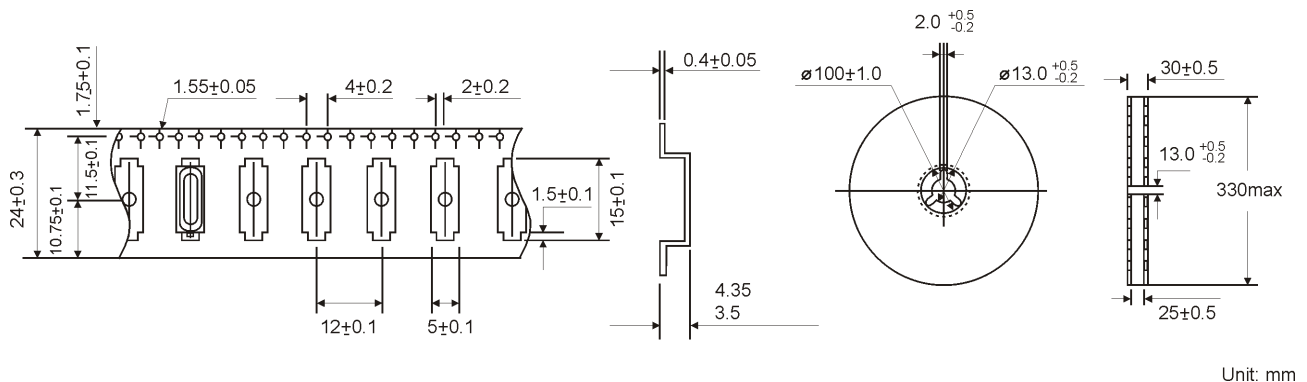
## DIMENSIONS OF HC-49/US-SMD



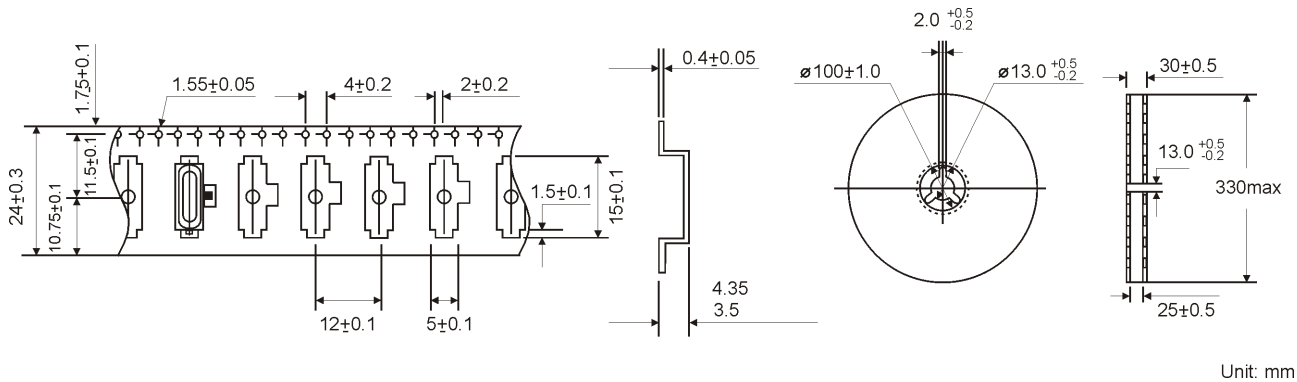
## DIMENSIONS OF HC-49/US-GSMD



## REEL SPECIFICATION OF HC-49/US-SMD

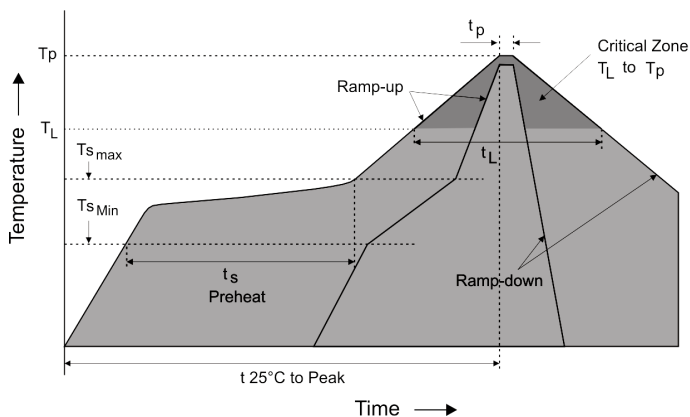


## REEL SPECIFICATION OF HC-49/US-GSMD



Unit: mm

## REEL SOLDER PROFILE

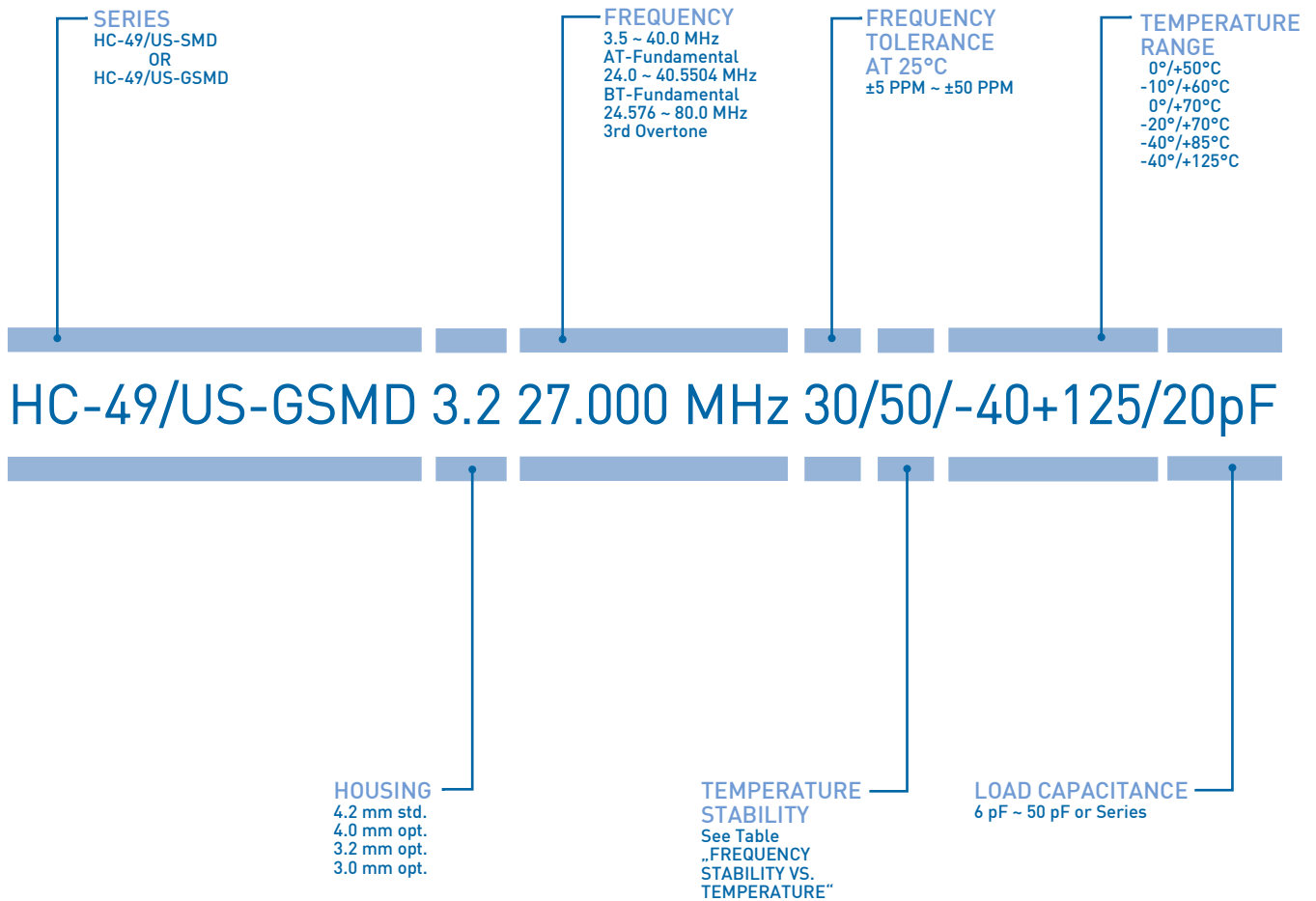


Profile Feature	Pb-Free Assembly
Average ramp-up rate (TL to TP)	3°C/second max.
Preheat:	
Temperature Min (Tsmin)	150°C
Temperature Max (Tsmax)	200°C
Time (min to max) (ts)	60-180 seconds
Time maintained above:	
Temperature (TL)	217°C
Time (tL)	60-150 seconds
Peak/Classification Temperature (Tp)	260°C
Time within 5°C of actual Peak Temperature (tp)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

## RESONANCE RESISTANCE

FREQUENCY IN MHz	VIBRATION MODE	ESR MAX. IN Ω
3.5 ~ 3.79 MHz	AT Fund.	120
3.9 ~ 4.99 MHz	AT Fund.	100
4.5 ~ 5.99 MHz	AT Fund.	90
6.0 ~ 6.99 MHz	AT Fund.	70
7.0 ~ 7.99 MHz	AT Fund.	70
8.0 ~ 8.99 MHz	AT Fund.	60
9.0 ~ 9.99 MHz	AT Fund.	60
10.0 ~ 11.99 MHz	AT Fund.	50
12.0 ~ 19.99 MHz	AT Fund.	40
20.0 ~ 26.99 MHz	AT Fund.	30
27.0 ~ 40.00 MHz	AT Fund.	25
27.0 ~ 40.00 MHz	3rd OT AT	100
40.0 ~ 80.00 MHz	3rd OT AT	60

## ORDERING INFORMATION



EXAMPLE: HC-49/US-GSMD 3.2 27.000 MHz 30/50/-40+125/20pF  
PLEASE INDICATE YOUR REQUIRED PARAMETERS



## PREMIUM QUALITY BY PETERMANN-TECHNIK



OUR COMPANY IS CERTIFIED ACCORDING TO ISO 9001:2008 IN OCTOBER 2013 BY THE DMSZ CERTIFIKATION GMBH.

THIS IS FOR YOU TO ENSURE THAT THE PRINCIPLES OF QUALITY MANAGEMENT ARE FULLY IMPLEMENTED IN OUR QUALITY MANAGEMENT SYSTEM AND QUALITY CONTROL METHODS ALSO DOMINATE OUR QUALITY STANDARDS.