

## FEATURES

- HIGH RELIABILITY FOR LOW COST / CHEAPEST AVAILABLE CRYSTAL
- 3 PAD PACKAGE FOR GROUNDING
- LOW PROFILE - 3.2, 3.0 AND 2.5 MM PACKAGE HEIGHTS AVAILABLE
- EXTENDED TEMPERATURE RANGE TO -40/+125°C AVAILABLE
- EXCELLENT CLOCK SIGNAL GENERATOR FOR CPU'S
- VERY SMALL FREQUENCY TOLERANCES AVAILABLE
- QUALIFIED FOR QUOTMOTIVE APPLICATIONS

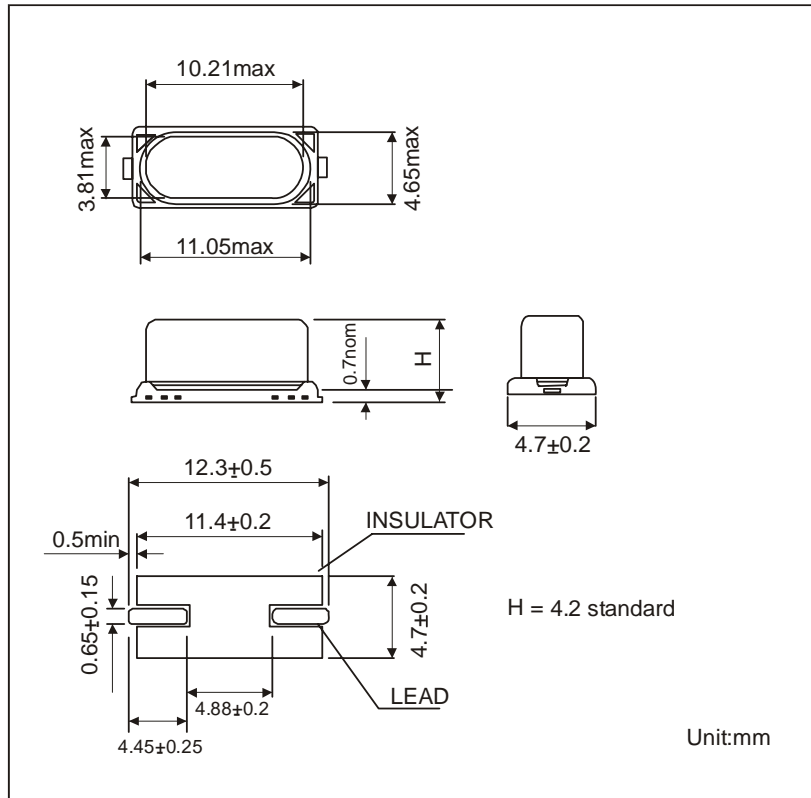


SMD CRYSTAL IN METAL PACKAGE		HC-49/US-SMD		
PACKAGE HEIGHT	STANDARD	4.2 mm max.		
	OPTION	3.2 mm max. / 2.5 mm max.		
NUMBER OF LEADS		2 = standard package		
		3 = optional 3rd pad for package grounding		
FREQUENCY	3.4875 ~ 40.0 MHz	24.0 ~ 40.5504 MHz	24.0 ~ 75.0 MHz	
MODE OF VIBRATION	AT-FUNDAMENTAL	BT-FUNDAMENTAL	3rd OVERTONE	
RESONANCE RESISTANCE	150 ~ 25 Ω max.	30 ~ 40 Ω max.	120 ~ 60 Ω max.	
FREQUENCY TOLERANCE AT 25°C		+5 ppm ~ +50 ppm		
TEMPERATURE RANGE		0/+50°C ~ -40/+125°C		
TEMPERATURE STABILITY OVER TEMPERATURE RANGE	+3 ppm	0/+50°C		
	+5 ppm	0/+50°C / -10/+60°C		
	+10 ppm	0/+50°C / -10/+60°C / 0/+70°C / -20/+70°C		
	+15 ppm	0/+50°C / -10/+60°C / 0/+70°C / -20/+70°C / -40/+85°C		
	+20 ppm	0/+50°C / -10/+60°C / 0/+70°C / -20/+70°C / -40/+85°C		
	+30 ppm	0/+50°C / -10/+60°C / 0/+70°C / -20/+70°C / -40/+85°C		
	+50 ppm	0/+50°C / -10/+60°C / 0/+70°C / -20/+70°C / -40/+85°C / -40/+125°C		
	+100 ppm	0/+50°C / -10/+60°C / 0/+70°C / -20/+70°C / -40/+85°C / -40/+125°C		
LOAD CAPACITANCE		5 ~ 50 pF or series		
SHUNT CAPACITANCE		7 pF max.		
DRIVE LEVEL		100 μW typical (0.01 mW ~ 1 mW possible)		
AGING		+3 ~ +5 ppm per year (+2 ppm available as option)		
INSULATION RESISTANCE		>500 MΩ DC/100V +-10%		
STORAGE TEMPERATURE		-55/+125°C		
PACKAGE		Tape & Reel (1.000 pcs per reel)		
<b>OTHER PARAMETERS ARE AVAILABLE ON REQUEST / CREATE HERE YOUR SPECIFICATION</b>				

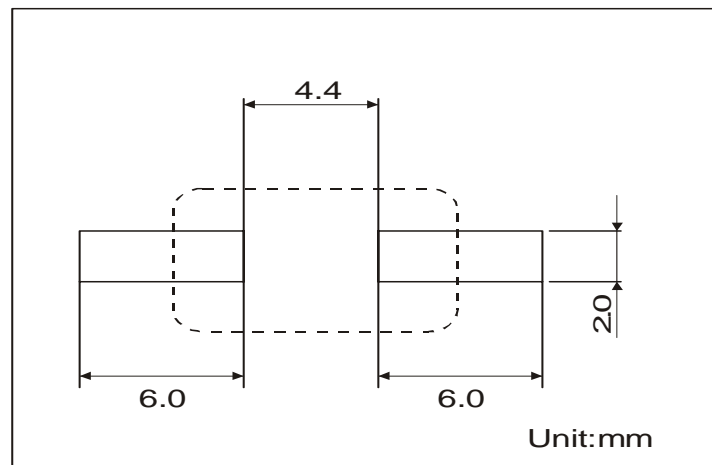
## PART NUMBERING SYSTEM

EXAMPLE	HC-49/US-SMD 3.2 27.000 MHz 30/50/-40+125/20pF
TYPE	HC-49/US-SMD = 2 pad standard package HC-49/US-GSMD = 3 pad for optional grounding function
PACKAGE HEIGHT	BLANK FOR 4.2 mm 3.2 or 2.5 mm
FREQUENCY	IN MHZ
FREQUENCY TOLERANCE AT 25°C	REQUIRED VALUE
TEMPERATURE STABILITY	REQUIRED VALUE
TEMPERATURE RANGE	REQUIRED VALUE
LOAD CAPACITANCE	REQUIRED VALUE

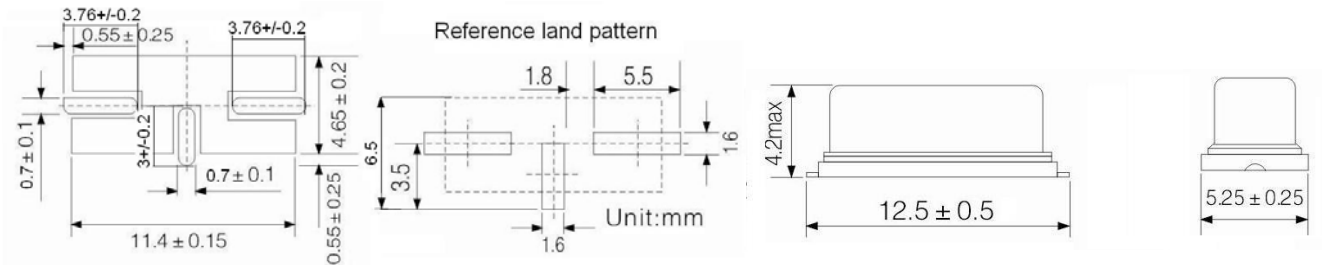
**OUTLINE DRAWING OF HC-49/US-SMD (2 pad standard package)**



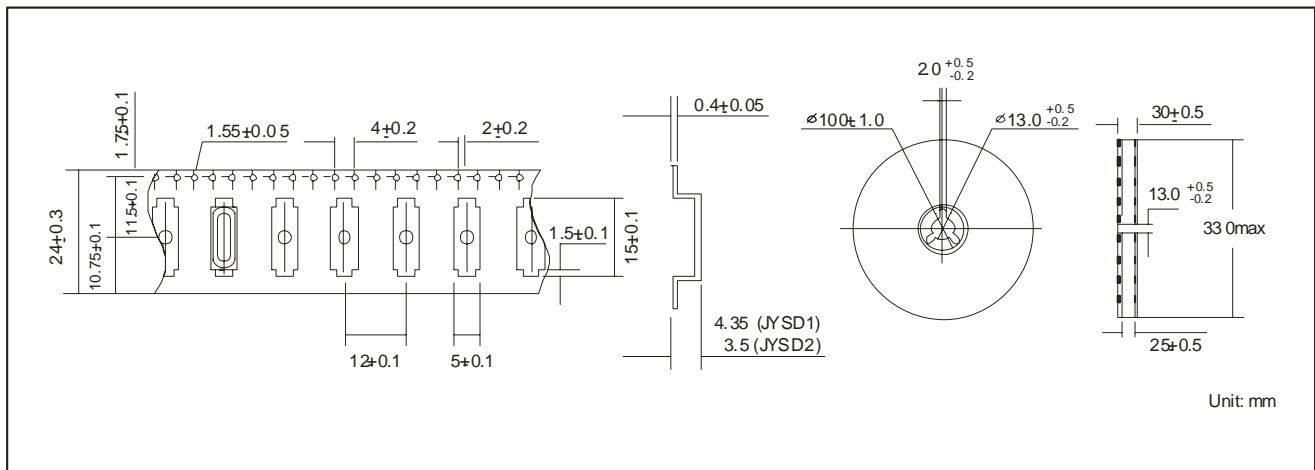
**RECOMMENDED PAD LAYOUT (2 pad standard package)**



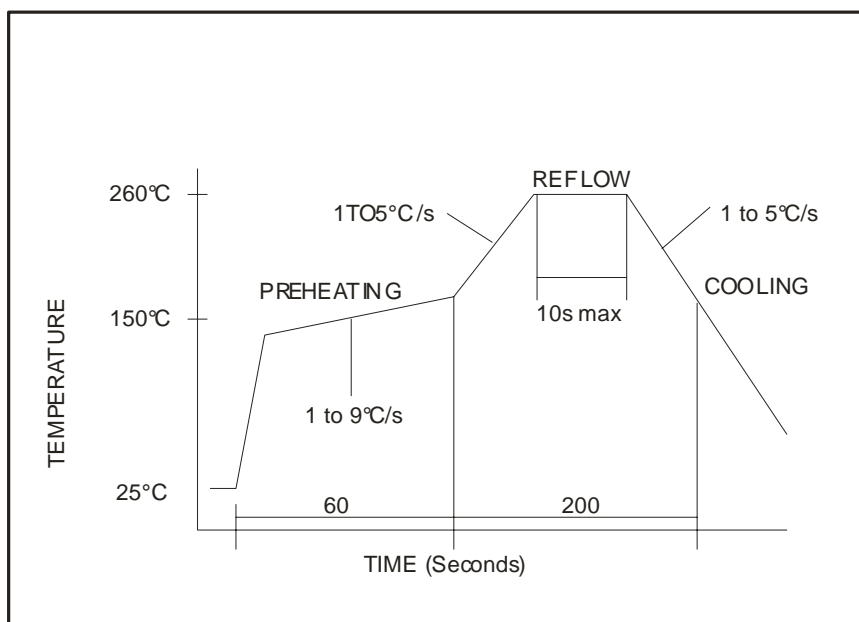
**OUTLINE DRAWING OF HC-49/US-GSMD (middle pad for grounding)**



**REEL SPECIFICATION**



**REFLOW SOLDER PROFILE**



Crystals can be soldered according to the norm JEDEC J-STD-020C.