

# FEATURES Crystals / Quarze HC-49/U

- HIGH RELIABILITY FOR LOW COST
- EXTENDED TEMPERATURE RANGE TO -40/+125°C
- EXCELLENT CLOCK SIGNAL GENERATOR FOR CPU'S
- QUALIFIED FOR QUOTMOTIVE APPLICATIONS



<b>TYPE</b>		HC-49/U				
<b>NUMBER OF LEADS</b>	<b>STANDARD</b>	2 LEADS				
	<b>OPTION</b>	3 LEADS				
<b>SMD-VERSION</b>		AVAILABLE WITH BENT LEADS AND METAL JACKET				
<b>PACKAGE HEIGHT</b>	<b>STANDARD</b>	13.46 MM				
	<b>OPTION</b>	10.7 MM				
<b>FREQUENCY</b>		1.8432 ~ 40.000 MHz	20.0 ~ 40.0 MHz	23.0 ~ 100.0 MHz	60.0 ~ 150.0 MHz	120.0 ~ 200.0 MHz
<b>MODE OF VIBRATION</b>		AT-FUNDAMENTAL	BT-FUNDAMENTAL	3rd OVERTONE	5th OVERTONE	7th OVERTONE
<b>RESONANCE RESISTANCE</b>		800 ~ 20 Ω MAX.	30 Ω MAX.	80 Ω MAX.	80 Ω MAX.	100 Ω MAX.
<b>FREQUENCY TOLERANCE AT 25°C</b>		+10 PPM ~ +50 PPM				
<b>TEMPERATURE RANGE</b>		0/+50°C ~ -40/+125°C				
<b>TEMPERATURE STABILITY</b>	<b>+3 PPM</b>	0+50°C				
	<b>+5 PPM</b>	0+50°C / -10/+60°C / 0/+70°C -20/+70°C				
	<b>+10 PPM</b>	0+50°C / -10/+60°C / 0/+70°C / -20/+70°C				
	<b>+15 PPM</b>	0+50°C / -10/+60°C / 0/+70°C / -20/+70°C / -40/+85°C				
	<b>+20 PPM</b>	0+50°C / -10/+60°C / 0/+70°C / -20/+70°C / -40/+85°C				
	<b>+30 PPM</b>	0+50°C / -10/+60°C / 0/+70°C / -20/+70°C / -40/+85°C				
	<b>+50 PPM</b>	0+50°C / -10/+60°C / 0/+70°C / -20/+70°C / -40/+85°C / -40/+125°C				
	<b>+100 PPM</b>	0+50°C / -10/+60°C / 0/+70°C / -20/+70°C / -40/+85°C / -40/+125°C				
<b>LOAD CAPACITANCE</b>		8 ~ 50 PF OR SERIES				
<b>SHUNT CAPACITANCE</b>		7 PF MAX.				
<b>DRIVE LEVEL</b>		100 µW typical (0.01 mW ~ 2 mW possible)				
<b>AGING</b>		+3 ~ +5 PPM PER YEAR				
<b>INSULATION RESISTANCE</b>		>500 MΩ DC/100V +10%				
<b>STORAGE TEMPERATURE</b>		-55/+125°C				
<b>DELIVERY FORM FOR LEADED VERSION</b>	<b>STANDARD</b>	BULKS				
	<b>OPTION</b>	TAPE AND REEL (1.000 PCS PER REEL)				
<b>DELIVERY FORM FOR SMD-VERSION</b>		TAPE AND REEL				
<b>INSULATOR FOR LEADED VERSION</b>	<b>STANDARD</b>	WITHOUT INSULATOR				
	<b>OPTION</b>	WITH INSULATOR				
<b>CUTTED LEADS</b>		AVAILABLE ON REQUEST				

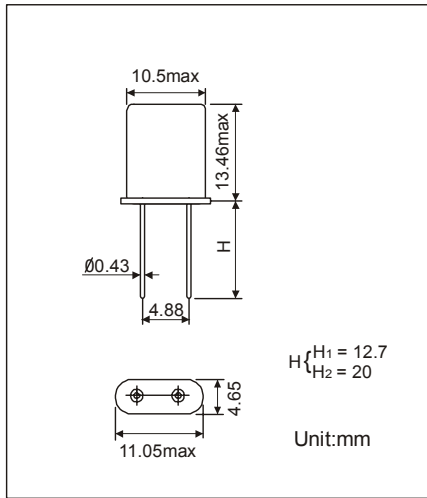
OTHER PARAMETERS ARE AVAILABLE ON REQUEST / CREATE HERE YOUR SPECIFICATION

## PART NUMBERING SYSTEM

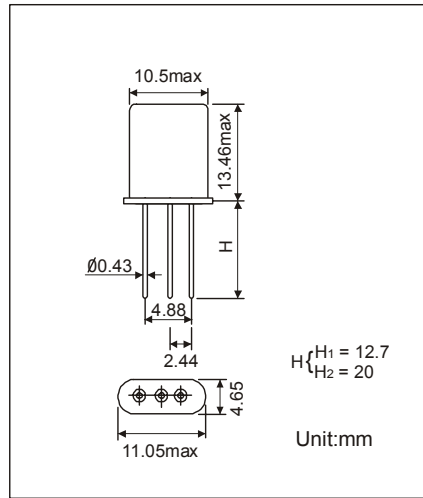
<b>EXAMPLE</b>	HC-49/U 27.000 MHz 30/50/-40+125/20pF/T/I
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<b>TYPE</b>	HC-49/U FOR TYPE WITH 2 LEADS
	HC-49/3U FOR TYPE WITH 3 LEADS
	HC-49/U-SMD FOR SMD-VERSION
<b>PACKAGE HEIGHT</b>	BLANK FOR 13.46 MM
	10.7 FOR 10.7 MM
<b>FREQUENCY</b>	REQUIRED VALUE
<b>FREQUENCY TOL. AT 25°C</b>	REQUIRED VALUE
<b>TEMPERATURE STABILITY</b>	REQUIRED VALUE
<b>TEMPERATURE RANGE</b>	REQUIRED VALUE
<b>LOAD CAPACITANCE</b>	REQUIRED VALUE
<b>DELIVERY FORM</b>	BLANK FOR BULKS
	T FOR TAPE AND REEL
<b>INSULATOR</b>	BLANK = WITHOUT INSULATOR
	I = WITH INSULATOR

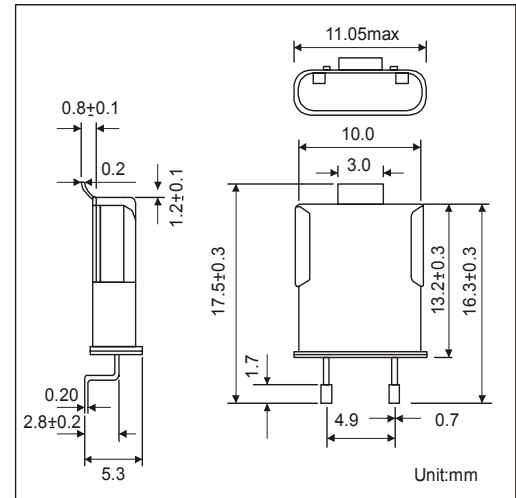
OUTLINE DRAWING OF HC-49/U



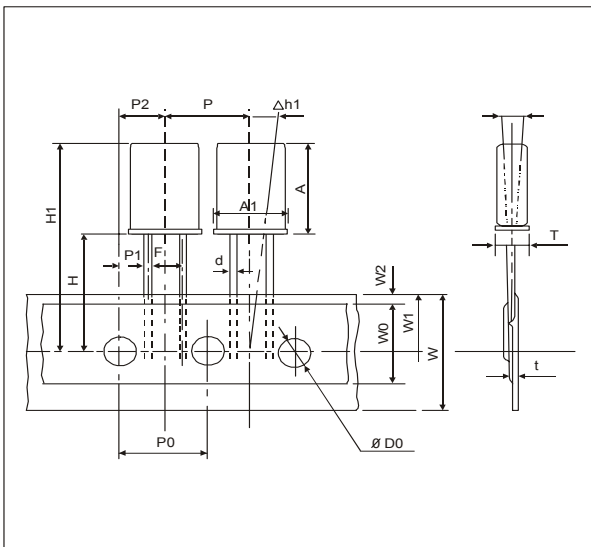
OUTLINE DRAWING OF HC-49/3U



OUTLINE DRAWING OF HC-49/U-SMD



REEL SPECIFICATION (LEADED VERSION)



Description	Symbol	Dimensions
Outside Diameter of Part	AxA1	13.5x11.1
Thickness of Part	T	5.0max
Lead Wire Diameter	d	Ø0.43 <sup>+0.05</sup> / <sub>-0.02</sub>
Interval Spacing of Part	P	12.7±1.0
Pitch fo Leading Hole	P0	12.7±1.0
Tolerance of Leading Hole	P1	3.85±0.7
	P2	6.35±1.0
Lead Pitch	F	5.0 <sup>+0.5</sup> / <sub>-0.2</sub>
Inclination	Δ h	0±1.0
Tape Width	W	18.2±0.2
Adhesive Tape Width	W0	13.0 <sup>+0.8</sup> / <sub>-0.2</sub>
Tolerance of Leading Hole(Vertical)	W1	8.5±0.3
Tolerance of Cover Tape	W2	2.0max
Bottom Surface Position of Part	H	18.2±0.2
Top Surface Position of Part	H1	33.6max
Hole Diameter	D0	Ø4.0±0.2
Tape Thickness	t	0.7±0.1
Inclination	Δ h1	0±1.0

Unit:mm

REEL SPECIFICATION FOR SMD VERSION

