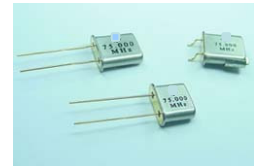


CRYSTAL UNITS (Rohs Compliant / Lead Free)
UM1-SMD & UM5-SMD Crystal
(AP-UM1S & AP-UM5S Series)



- SPECIFICATIONS

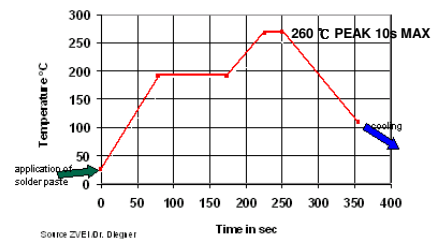
FREQUENCY RANGE		3.5MHz TO 160.0MHz
MODE OF OSCILLATION	FUNDAMENTAL	3.5MHz TO 49.9MHz
	THIRD OVERTONE	30.0MHz TO 100.0MHz
	FIFTH OVERTONE	75.0MHz TO 160.0MHz
FREQUENCY TOLERANCE AT 25°C		±5PPM TO ±50PPM
FREQUENCY STABILITY OVER TEMPERATURE RANGE		±3PPM TO ±30PPM
STABILITY OVER OPERATING TEMPERATURE RANGE		±3PPM @ -10°C TO +60°C
		±5PPM @ -20°C TO +70°C
		±7PPM @ -30°C TO +80°C
		±30PPM @ -40°C TO +90°C
OPERATION TEMPERATURE RANGE		-40°C TO +90°C
SHUNT CAPACITANCE		7pF MAXIMUM
LOAD CAPACITANCE		10pF TO SERIES OR SPECIFIED
EQUIVALENT SERIES RESISTANCE (ESR)		SEE TABLE
DRIVE LEVEL		100 TO 500µW
AGING PER YEAR		±3PPM MAXIMUM STANDARD
		<±3PPM ON REQUEST



- Equivalent Series Resistance (ESR) and Mode Of Vibration (Mode)

Frequency Range (MHz)	Mode	UM1S ESR max.	UM5S ESR max.
3.500 to 3.900	Fundamental/AT	200	—
4.000 to 4.990	Fundamental/AT	150	—
5.000 to 9.900	Fundamental/AT	60	—
10.000 To 14.900	Fundamental/AT	40	60
15.000 to 40.000	Fundamental/AT	30	35
25.000 to 29.900	Fundamental/AT	50	60
30.000 to 49.900	Fundamental/AT	30	30
30.000 to 49.900	Third Overtone	45	50
50.000 to 100.00	Third Overtone	60	60
75.000 to 160.00	Third Overtone	80	90

- SOLDER REFLOW PROFILE



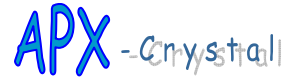
- OUTLINE DIMENSIONS

PLEASE SEE ATTACHED DRAWING.

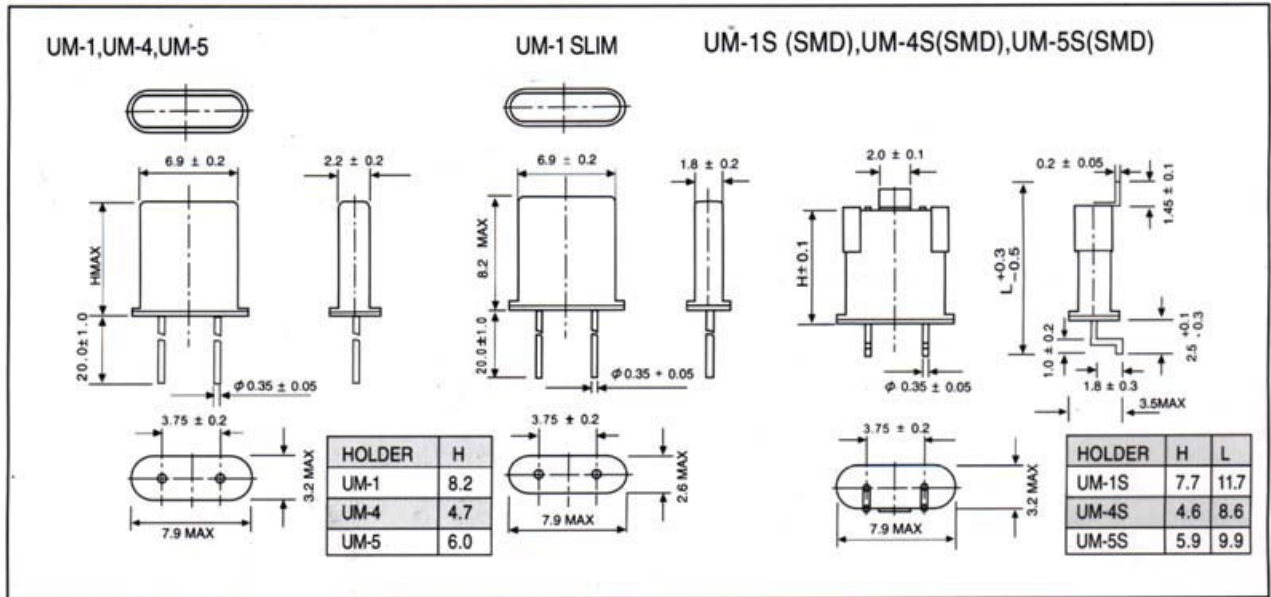
ORDERING CODE SYSTEM (VERSION 1.1 UPDATED MAY 2008)					EXAMPLE:
SERIES	FREQUENCY	LOAD CAPACITANCE	TEMPERATURE RANGE	TOLERANCE/STABILITY	AP-UM1S-13-10X-2020
AP-UM1S, UM5S	IN MHZ	10pF TO SERIES OR SPECIFIED	X: EXT.TEMP.-40 TO +85°C BLANK: STANDARD	2020: PPM/PPM BLANK: STANDARD	

NON STANDARD FREQUENCIES AND SPECIFICATIONS ARE AVAILABLE ON REQUEST

CRYSTAL UNITS (Rohs Compliant / Lead Free)
UM1-SMD & UM5-SMD Crystal
(AP-UM1S & AP-UM5S Series)



- OUTLINE DIMENSIONS



Packaging: 1,000 pcs/box (Leaded type)
 1,000 pcs/reel (SMD type)

SPECIFICATION FOR APPROVAL