

UM1 & UM5 Series



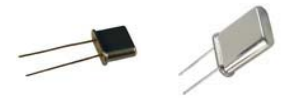
Crystal unit

RoHS & REACH compliant

Metal can Through hole type crystal unit : UM1: 8mm height, UM5 : 6mm height

wide frequency range

SMD gull wing type and 3 lead option available



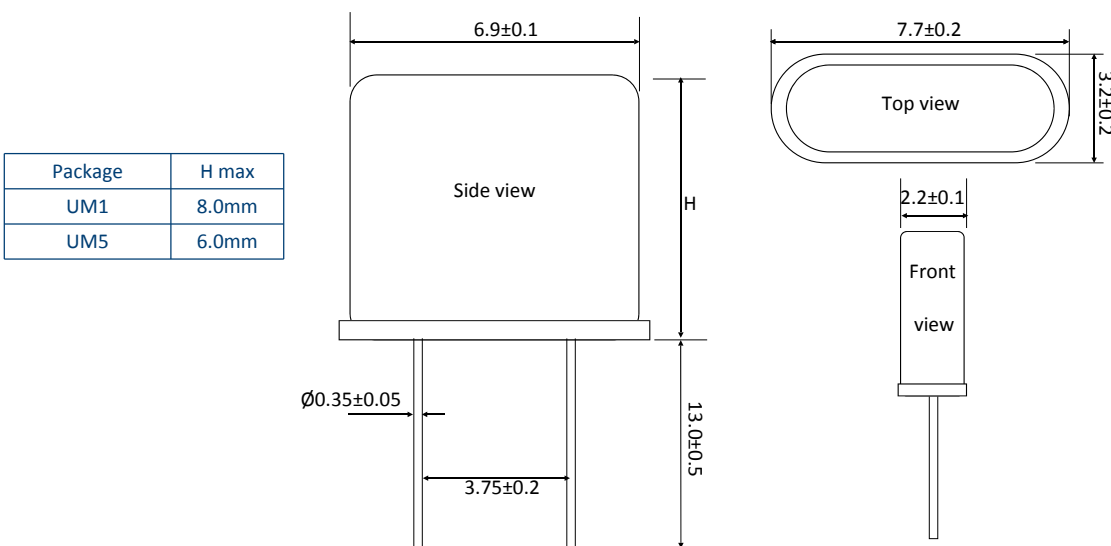
Parameters		Specification	Remarks
Frequency Range	F _{nom}	3.5MHz ~ 100.0MHz (UM1) 10.0MHz~100.0MHz (UM5)	Table 1
Frequency Tolerance	F _{tol}	±5.0ppm ~ ±50.0ppm	±30.0ppm standard
Frequency stability over operating temperature range	F _{stb}	±5.0ppm ~ ±50.0ppm	Table 2
Operating Temperature Range	T _{use}	-10°C ~ +60°C, -20°C ~ +70°C, -40°C ~ +85°C	Table 2
Storage temperature	T _{stg}	-55°C ~ +125°C	
Load capacitance	CL	5.0pF ~ 32.0pF, Series	
Equivalent Series Resistance	ESR	Table 1	
Shunt capacitance	C0	7.0pF max	
Drive level	DL	500µW max	100µW typical
Frequency Aging	F _{age}	±3.0ppm/year at 25°C	
Moisture sensitivity level	MSL	1 (unlimited)	
Electrostatic discharge	ESD	Not applicable	
Insulation resistance	IR	500MΩ min	At 100V DC

Table 1. Frequency vs ESR	
UM1 Series	
3.5Hz ~ 4.5MHz (Fund.)	200Ω
4.5MHz ~ 6.0MHzFund.)	150Ω
6.0MHz ~ 7.0MHzFund.)	120Ω
7.0MHz ~ 8.0MHzFund.)	100Ω
8.0MHz ~ 9.0MHzFund.)	60Ω
9.0MHz ~ 11.0MHzFund.)	40Ω
11.0MHz ~ 13.0MHzFund.)	35Ω
13.0MHz ~ 50.0MHzFund.)	30Ω
26.0MHz ~ 100.0MHz(3 rd OT)	45Ω

Table 1. Frequency vs ESR	
UM5 Series	
10.0MHz ~ 12.0MHz (Fund.)	120Ω
12.)MHz ~ 13.0MHz (Fund.)	80Ω
13.0MHz ~ 50.0MHz(Fund.)	40Ω

Table 2 Frequency Stability vs Temperature					
Temp. (°C)	Stability in ppm				
	±10	±15	±20	±30	±50
-10°C ~ 60°C	√	√	√	√	√
-20°C ~ 70°C	√	√	√	√	√
-40°C ~ 85°C	Enq.	Enq.	√	√	√

Dimensions (mm)



For Cropped lead crystal options and crystal with washer fitted are available ; Please check part numbering for ordering code.

ACT (A wholly owned Acal BFi Company)
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ISO9001 Registered

Specifications subject to change without notification

UM1 & UM5 Series

Crystal unit



Part number generation								
MO	2700	G	K	L	GO	F	L	-PF
ACT Series Code	Frequency (MHz)	Frequency Tolerance (\pm ppm)	Frequency stability over temperature range (\pm ppm)	Operating Temperature Range ($^{\circ}$ C)	Load capacitance (CL -pF)	Frequency Mode	Packaging (Tape & Reel)	RoHS
<p><u>UM1</u></p> <p>UM1 Through hole = MO Gull Wing (SMD) = XO</p> <p><u>UM5</u></p> <p>UM5 Through hole = NO Gull Wing (SMD) = ZO</p>	<p>8MHz = 0800 27MHz = 2700</p> <p>Note: Use the first 4 characters of the frequency in Hz i.e. 27MHz = 27000000Hz</p> <p>If the frequency is 100MHz or higher then the first 5 characters are used</p>	<p>\pm5 = A \pm10 = E \pm15 = F \pm20 = G \pm25 = H \pm30 = I \pm50 = L</p>	<p>\pm5 = B \pm10 = F \pm15 = G \pm20 = I \pm25 = J \pm30 = K \pm50 = O</p>	<p>-10~+60 = E -20~+70 = G -30~+80 = K -40~+85 = M</p>	<p>8 = GO 9 = JO 10 = KO 11 = MO 12 = OO 13 = YO 14 = ZO 15 = PO 16 = RO 18 = TO 20 = VO 22 = WO 30 = DA SR = SR</p>	<p>F¹mental = F 3rd OT = A</p>	<p>Loose = L</p>	<p>RoHS = -pF</p>
<p>Note: It is important to suffix the above part number with full frequency required to give a completed part number as illustrated below. Full Example Part Number : MO0800GKLGOF-L-PF [8.000MHz], MO2700GKLGOF-L-PF [27.000MHz] , MO2457GKLGOF-L-PF [24.576MHz]</p>								

Additional information

Please enquire for SMD gull wing type mechanical drawing
Please enquire for 3 lead option

Drawing control: (Internal use only)
Commodity code: 854160 00 00
Issue number: 1
Date: 1/2/2017
Internal reference: H3

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